



EUROPEAN COMMISSION
DG Competition

PUBLIC VERSION

***Case M.9343 – HYUNDAI HEAVY INDUSTRIES
HOLDINGS / DAEWOO SHIPBUILDING & MARINE
ENGINEERING***

(Only the English text is authentic)

**REGULATION (EC) No 139/2004
MERGER PROCEDURE**

Article 8(3) Regulation (EC) 139/2004
Date: 13/01/2022

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EUROPEAN
COMMISSION

Brussels, 13.1.2022
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COMMISSION DECISION

of 13.1.2022

**declaring a concentration to be incompatible with the internal market
and the functioning of the EEA Agreement**

**(Case M.9343 - HYUNDAI HEAVY INDUSTRIES HOLDINGS / DAEWOO
SHIPBUILDING & MARINE ENGINEERING)**

(Text with EEA relevance)

(Only the English text is authentic)

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THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union¹,

Having regard to the Agreement on the European Economic Area, and in particular Article 57 thereof,

Having regard to Council Regulation (EC) No 139/2004 of 20.1.2004 on the control of concentrations between undertakings^{2 3}, and in particular Article 8(3) thereof,

Having regard to the Commission's decision of 17 December 2019 to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission,

Having regard to the opinion of the Advisory Committee on Concentrations,

Having regard to the final report of the Hearing Officer in this case,

1. INTRODUCTION

- (1) On 12 November 2019, the Commission received a notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which Hyundai Heavy Industries Holdings (“HHIH”, South Korea) through its subsidiary Korea Shipbuilding & Offshore Engineering (“KSOE”, South Korea) acquires within the meaning of Article 3(1)(b) of the Merger Regulation sole control of Daewoo

¹ OJ C 115, 9.8.2008, p.47.

² OJ L 24, 29.1.2004, p. 1 (“the Merger Regulation”). With effect from 1 December 2009, the Treaty on the Functioning of the European Union (“TFEU”) has introduced certain changes such as the replacement of “Community” by “Union” and “common market” by “internal market”. The terminology of the TFEU will be used throughout this decision.

³ For the purposes of this Decision, although the United Kingdom withdrew from the European Union as of 1 February 2020, according to Article 92 of the Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community (OJ L 29, 31.1.2020, p. 7), the Commission continues to be competent to apply Union law as regards the United Kingdom for administrative procedures which were initiated before the end of the transition period.

Shipbuilding & Marine Engineering Co., Ltd. (“DSME”, South Korea) (the “Transaction”).

2. THE PARTIES

- (2) HHIH is a South Korean holding company that controls, through KSOE, Hyundai Heavy Industries Co. Ltd (“HHI”), Hyundai Samho Heavy Industries (“Hyundai Samho”) and Hyundai Mipo Dockyard (“Hyundai Mipo”). Its shipbuilding activities entail the production of a range of cargo vessels, marine engines and offshore facilities.
- (3) DSME is a South Korean company mainly active in shipbuilding. It notably produces a range of cargo vessels and offshore facilities, but not marine engines. Its majority shareholder and the seller in the Transaction is the Korea Development Bank (“KDB”).
- (4) For the purpose of this Decision, HHIH (including KSOE) and DSME are referred to as the “Parties” while HHIH (including KSOE) is designated as the “Notifying Party”. The shipbuilding business of HHIH, namely, HHI, Hyundai Samho and Hyundai Mipo, is referred to as “HHI” which is the name under which it is widely recognised.

3. THE OPERATION AND THE CONCENTRATION

- (5) For the purpose of the Transaction, HHIH incorporated KSOE, a new holding entity, which now holds HHI. KDB will contribute the entirety of its majority shareholding in DSME (55.7%) to KSOE in exchange for approximately 6.9% of the common shares and 9.4% of the non-voting redeemable convertible preference shares in KSOE. KSOE will participate as a third-party subscriber in DSME’s private placement, which will increase its holding in DSME to 68.4%.⁴
- (6) As a result of the Transaction, HHIH will have sole control of DSME within the meaning of Article 3(1)(b) of the Merger Regulation.
- (7) According to the Notifying Party, the rationale of the Transaction is to create a stronger business with a more efficient cost structure that is able to compete effectively in the global shipbuilding industry. The Notifying Party states that through the operation it will be able to optimise the Parties’ cost structure by reducing certain duplicate costs, mainly in connection with investments related to R&D and in manufacturing facilities.

4. UNION DIMENSION

- (8) The combined aggregate worldwide turnover of the undertakings concerned is more than EUR 5 000 million (HHIH: EUR [...], DSME: EUR [...]) and the aggregate Union-wide turnover of each of the undertakings concerned is above EUR 250 million (HHIH: EUR [...], DSME: EUR [...]). The undertakings concerned do not each achieve more than two third of their aggregate Union-wide turnover within one and the same Member State.
- (9) The Transaction therefore has a Union dimension within the meaning of Article 1(2) of the Merger Regulation.

⁴ Form CO, paragraphs 153-154.

5. THE PROCEDURE

- (10) The Transaction was announced after the Parties concluded an In-Kind Contribution and Investment Agreement and a Shareholders' Agreement on 8 March 2019.
- (11) The Notifying Party submitted a first draft Form CO on 17 May 2019.
- (12) On 12 November 2019, the Commission received formal notification of the Transaction pursuant to Article 4 of the Merger Regulation.
- (13) Throughout its initial (Phase I) investigation, the Commission reached out to a large number of market participants (competitors, customers, and other stakeholders) by means of telephone conferences and requests for information, including electronic questionnaires.
- (14) On 2 December 2019, a state-of-play meeting between the Parties and the Commission took place during which the Commission explained the preliminary findings of the market investigation and its preliminary conclusions.
- (15) On 17 December 2019, the Commission raised serious doubts as to the compatibility of the Transaction with the internal market and adopted a decision to initiate proceedings pursuant to Article 6(1)(c) of the Merger Regulation ("the Article 6(1)(c) decision"), thereby opening an in-depth investigation (Phase II). The Article 6(1)(c) decision raised serious doubts about the Transaction in the worldwide markets for the construction of the following commercial vessels:
 - (a) Liquefied Natural Gas ("LNG") carriers ("LNGCs") and the potential sub-market for large LNG carriers ("LLNGCs", 145 000 cubic meters and above), including the potential market for Floating Storage Regasification Units, ("FSRUs") and the potential sub-market for large FSRUs (145 000 cubic meters and above);
 - (b) Oil tankers and the potential sub-market for Very Large Crude Carriers ("VLCCs", 200 000 DWT⁵ and above);
 - (c) Liquefied Petroleum Gas ("LPG") carriers and the potential sub-market for Very Large LPG Carriers ("VLGCs", 60 000 cubic meters and above);
 - (d) Containerships and the potential sub-market for large containerships (15 000 TEU⁶ and above).
- (16) On 10 January 2020, the procedure was extended by 20 working days following the request of the Notifying Party under Article 10(3)2 of the Merger Regulation. The Notifying Party submitted its written comments on the Article 6(1)(c) decision on 13 January 2020 ("the Response to the Article 6(1)(c) decision"). Following the Response to the Article 6(1)(c) decision, a state of play meeting with the Notifying Party was held on 17 January 2020.
- (17) During the Phase II investigation, the Commission sent several requests for information to the Parties and third parties, including competitors, customers, and other stakeholders. The procedure was suspended twice by Commission decisions adopted pursuant to Article 11(3) of the Merger Regulation due to the failure of the Notifying Party to provide complete and timely responses to Commission's requests

⁵ A tanker size is measured in Dead Weight Tonnage ("DWT"), which is a measure of how much weight a vessel can carry. It is the sum of the weights of cargo, fuel, fresh water, ballast water, crew and other.

⁶ A containership's capacity is measured in TEU, Twenty Feet Equivalent Unit, which refers to one standard 6.1 meters long container.

for information (“RFIs”). The first decision was adopted on 4 February 2020 after the Notifying Party failed to respond fully to the RFI of 8 January 2020. The decision suspended the time limits referred to in the first subparagraph of Article 10(3) of the Merger Regulation as of 23 January 2020 and the suspension ended on 21 February 2020. The second decision was adopted on 1 April 2020 after the Notifying Party failed to respond fully to the RFI of 24 March 2020 and suspended the proceedings as of 31 March 2020; the suspension ended on 2 June 2020.

- (18) In the meantime, another state of play meeting between the Commission and the Notifying Party took place on 31 March 2020.
- (19) On 8 June 2020 the Commission issued a Statement of Objections with respect to the Transaction (the “SO”) in which it raised concerns regarding its effects on competition in the worldwide markets for the construction of VLGCs and LLNGCs (including large FSRUs).⁷ In particular, the Commission preliminarily considered that the Transaction would significantly impede effective competition in the worldwide LLNGCs market including in the large FSRUs segment, by either (i) the creation of a dominant position and/or (ii) the elimination of important competitive constraints that the merging parties had exerted upon each other and a reduction of competitive pressure on the remaining competitors. Furthermore, it preliminarily considered that the Transaction would significantly impede effective competition in the worldwide VLGCs market, by either (i) the strengthening of HHI’s dominant position and/or (ii) the elimination of important competitive constraints that the merging parties had exerted upon each other and a reduction of competitive pressure on the remaining competitors.
- (20) Access to file was given to the Notifying Party on 9 and 23 of June 2020.
- (21) On 29 June 2020, the Notifying Party replied to the SO (“Response to the SO”). Due to the difficulties caused by the COVID-19 pandemic, the Parties did not request to be heard at a formal oral hearing, choosing instead to present orally the Response to the SO within the framework of a virtual meeting held with the Commission on 7 July 2020.
- (22) The proceedings were suspended for the third time by a Commission decision of 14 July 2020 adopted pursuant to Article 11(3) of the Merger Regulation in relation to RFI 45 of 5 July 2020. The suspension started on 13 July 2020 and ended on 18 November 2021 upon submission by the Notifying Party of a full response to RFI 45.
- (23) In the meantime, a State of Play meeting was held on 16 July 2020, where the Commission communicated to the Notifying Party that, upon consideration of the Response to the SO, it maintained its concerns only with respect to the risk of a significant impediment to effective competition resulting from the creation of a dominant position in the worldwide market for the construction of LLNGCs.
- (24) Additional access to file was given to the Notifying Party on 21 October 2020.

⁷ In the SO, with respect to LNGCs, the Commission used the following terminology, which is also valid for the purposes of this decision: LNGCs including ice-breaker or Arc7 LNGCs are referred to as “conventional LNGCs”; Floating Regassification Units are referred to as “FSRUs”; conventional LNGCs and FSRUs are together referred to as “LNGCs”; small conventional LNGCs and small FSRUs are together referred to as “small LNGCs”; large LNGCs including large ice-breaker or Arc7 LNGCs are referred to as “conventional LLNGCs”; conventional LLNGCs and large FSRUs are together referred to as “LLNGCs”.

- (25) During the period of the suspension, the Commission continued its investigation by collecting information from the Parties and third parties. On the basis of this information, the Commission issued two letters of facts to the Notifying Party. On 28 April 2021, the Commission issued a letter of facts relating to several aspects of the worldwide market for the construction of LLNGCs (the “First Letter of Facts”). Access to file was provided to the Notifying Party on 30 April 2021. The Notifying Party commented on the First Letter of Facts by means of a submission dated 2 June 2021.
- (26) On 19 November 2021, the Commission issued a second letter of facts relating to several aspects of the worldwide market for the construction of LLNGCs (the “Second Letter of Facts”).⁸⁹ Access to file was given to the Notifying Party on 22 November 2021. The Notifying Party commented on the Second Letter of Facts on 29 November 2021.
- (27) Following the submission of the comments on the Second Letter of Facts and the end of the suspension of the deadline as of 18 November 2021, a State of Play meeting was held on 30 November 2021, followed by a status call with the Notifying Party on 3 December 2021.
- (28) On 3 December 2021, upon review of the Notifying Party’s Response to the Second Letter of Facts, the Commission sent an email to the Notifying Party containing a very limited set of additional factual points, inviting the Notifying Party to provide observations. On 6 December 2021, the Notifying Party provided observations. Moreover, on 6 and 7 December 2021, the Commission sent emails to the Notifying Party, in which the Commission provided clarifications on a very limited set of facts. A subsequent state of play meeting took place on 15 December 2021 in which the Commission informed the Notifying Party that it maintains its concerns and intends to consult the Advisory Committee on a draft prohibition decision under Article 8(3) of the Merger Regulation. On 21 December 2021 and on 10 January 2022, the Notifying Party submitted additional observations, discussed in **Section 8.3.8.3 (C) vi)** and in **Section 8.3.8.3 (C) vii).a)**, respectively.
- (29) The meeting with the Advisory Committee took place on 10 January 2022.
- (30) This decision only addresses the worldwide market for the construction of LLNGCs (including the large FSRUs segment) in respect of which the Commission maintains its objections that the Transaction would lead to the creation of a dominant position even in light of the Notifying Party’s Response to the SO and subsequent observations, including in response to the First Letter of Facts and Second Letter of Facts.

⁸ The Commission notes that where the Parties provided updated information, to the extent updated data or facts submitted were different than those the Commission had previously relied on, the Notifying Party was informed of the Commission’s view that the different data would not affect its assessment, including in particular by references in the First Letter of Facts and the Second Letter of Facts.

⁹ In the Response to the Second Letter of Facts (see for example paragraph 78), the Notifying Party claims that the Commission would have relied on “*outdated feedback from the market investigation*”. The Commission rejects these allegations, for the following reasons. Indeed, in addition to questionnaires Q3, Q8 and Q11 to customers and to questionnaires Q5 and Q10 to competitors, the Commission also continuously reached out to other market participants in the course of the proceedings. To carry out a proper update of the file in the course of the proceedings, besides sending requests for information to the Notifying Party, the Commission reached out to a selected set of market participants, when necessary. The Commission considered that this was not necessary where third-party market data and updated market data provided by the Notifying Party showed no material alteration in market conditions and thus no need to re-start a fully-fledged market investigation.

(31) The Commission leaves open the question of whether the Transaction would give rise to a significant impediment of effective competition in the worldwide market for the construction of VLGCs. This is because the assessment relating to the likely impact of the Transaction on that market would not affect the conclusion reached as to the compatibility of the Transaction with the internal market having regard to the maintained objections with respect to LLNGCs.

5.1. [...]

(32) [...] ¹⁰ [...].

(33) [...], ¹¹ [...].

(34) [...] ¹² [...] ¹³ [...].

(35) [...] ¹⁴ [...] ¹⁵ [...] ¹⁶ [...].

(36) [...] ¹⁷

(37) [...].

(38) [...].

(39) [...].

(40) [...].

(41) [...].

(42) [...].

(43) The Notifying Party did not submit commitments pursuant to Article 8(2) of the Merger Regulation and Article 20 of the Implementing Regulation by the deadline of 7 December 2021.

6. OVERVIEW OF THE SHIPBUILDING INDUSTRY

(44) The worldwide cargo shipbuilding industry in the period 2016-2020 represented orders in the value of EUR 172.9 billion and EEA customers accounted for 30.7% of these aggregate orders. ¹⁸

(45) The underlying demand for cargo shipbuilding comes from maritime transport, which itself is driven by the macroeconomic indicators and global economic outlook. Measured in value, in 2020, sea transport accounted for 46% of goods traded between the EU and the rest of the world, measured in volume the share was 81%. ¹⁹ For the purpose of EU external trade, shipping companies rely on the types of vessels

¹⁰ [...].

¹¹ [...].

¹² [...].

¹³ [...].

¹⁴ [...].

¹⁵ [...].

¹⁶ [...].

¹⁷ [...].

¹⁸ The Notifying Party's response to question 12 of RFI 67, Annex 12. Commercial ships are generally vessels performing an economic activity of carrying cargo or passenger. Types of non-commercial ships are for example navy ship or leisure boats.

¹⁹ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_trade_in_goods_by_mode_of_transport

mostly affected by the Transaction, which are the largest-sized vessels used for deep-sea sailing (i.e., ocean crossing).

6.1. Competitive landscape

- (46) From the supply side, cargo shipbuilding (especially for large vessels) mostly takes place in three countries, namely South Korea, Japan and China. These three countries are responsible for approximately 85% of all cargo shipbuilding output worldwide.²⁰
- (47) Customers in Asia are more likely to order new build vessels domestically than abroad: “*Between 2005 and 2016, ship buyers placed the majority of orders at domestic yards; take the example of 2015 where around 90% of Korean owners ordered from Korean yards, 80% of Japanese buyers and 70% of Chinese owners did so at their respective national yards.*”²¹ By contrast, because there is very limited cargo shipbuilding outside of Japan, China and South Korea, EEA customers order cargo vessels mostly from shipbuilders in these countries.
- (48) From the demand side perspective, there are two categories of players, namely shipowners and charterers. Shipowners are those that actually own the vessel, while charterers are those that operate it. This Decision refers to customers as those who have placed orders (being firm orders or option orders), regardless of whether they will actually own the vessel or whether, once the order has been placed, they will subsequently issue a call for tender to select shipowners (for example, for these shipowners to enter into contracts with the shipbuilders) and operate the vessels as charterers. Some customers are both shipowners and charterers, depending on the project.
- (49) Regardless of whether the order is placed by a shipowner or a charterer, there are two main procurement methods in the shipbuilding industry:²² customers purchase vessels either directly from shipbuilders or through specialised brokers. A considerable number of orders involve specialised brokers such as Clarksons, Arrows, Affinity and others. These brokers are active across all vessel types and have relationships with all shipbuilders, as well as an up-to-date understanding of the prevailing market conditions. A number of customers order their vessels directly from shipbuilders without involving a broker. Such cases may involve large companies like shipping lines that buy vessels regularly.
- (50) For most orders of new vessels, the procurement process involves two separate stages, usually with four to seven total rounds, namely the technical proposal and the commercial proposal.²³ At the start of a typical procurement process, the customer, either directly or with the help of a broker, asks several shipbuilders to submit technical proposals for the required vessel. After evaluating the technical proposals, the customer usually asks a smaller number of shipbuilders to refine their technical proposals and excludes other shipbuilders from the process. The customer then asks the selected shipbuilders to submit commercial proposals for the technical specification they put forward. Customers may ask shipbuilders to revise their commercial proposals several times, narrowing the field of competing shipbuilders

²⁰ Form CO, paragraph 481. See also Organisation for Economic Co-operation and Development (OECD), “Imbalances in the Shipbuilding Industry and Assessment of Policy Responses”, C/WP6(2016)6/FINAL, pages 22-23.

²¹ Organisation for Economic Co-operation and Development (OECD) Science, technology and industry, Policy papers, “An analysis of market-distorting factors in shipbuilding”, April 2019 (No. 67), page 11.

²² Form CO, paragraphs 1120-1122.

²³ Form CO, paragraphs 1123-1136.

with every round of proposals. At the end of the process there are usually no more than two or three shipbuilders left, which then submit final offers.

6.2. Description of the cargo shipbuilding process

- (51) Despite employing a large amount of labour, the shipbuilding industry is a capital intensive industry. Invested capital in the shipbuilding industry consists of heavy investment in long-term assets that are essential for the building of vessels. Each shipyard occupies a large portion of land and coastal areas and is equipped with cranes (to lift and lower ship blocks for all vessels), docks where vessel blocks are installed and assembled together in order to turn it into a floatable vessel, and quays.
- (52) Vessels are built on docks. Shipyards use two types of docks: dry docks (box-shaped docks below sea level with dock gates) and floating docks (type of pontoon floated on the sea with floodable buoyancy chambers on the side). While both dry and floating docks are used for the same purpose of constructing vessels, floating docks also enable shipbuilders to resolve issues relating to a shortage of land if additional dock capacity is required.
- (53) Once a shipyard receives an order (following the procurement process described above), it will allocate a specific slot to the building of the ordered vessel. The number of docks therefore are key elements that will determine the number of vessels that can be built at one particular time.
- (54) The construction process is generally divided between several phases, i.e., (i) sales/design, (ii) engineering, (iii) procurement and (iv) construction. These phases cover the period from contract negotiation to the production process to the post-delivery warranty period.
- (55) At the sale/design stage, the shipbuilder first designs a vessel, most often on the basis of its design of similar vessels produced in the past, while taking into account specifications and technical requirements of the customer. Then, the shipbuilder submits to the customer a commercial and technical proposal with the proposed design and expected performance of the vessel.
- (56) In the engineering phase, based on the design, the shipbuilder prepares drawings to build the particular vessel according to its own facilities and shipyards, as well as all drawings and documents necessary for the various stages of construction.
- (57) In the procurement phase, the shipbuilder orders equipment, materials and parts based on a list which is negotiated and agreed with the customer (maker list). Major shipbuilders generally have a list of available suppliers of equipment for each vessel type and their terms (e.g. price and type of product).
- (58) Finally, the construction phase includes the following sequences: (a) steel pre-treatment, cutting and bending; (b) component assembly; (c) block assembly; (d) pipe fabrication & blasting and painting; (e) pre-outfitting (welding work to pre-install parts and equipment into blocks); (f) block painting; (g) pre-erection & erection; (h) outfitting; (i) sea trial; and (j) delivery & After Sale warranty.
- (59) Most of these construction sequences (as well as the design, engineering and procurement phases) are subject to inspection by a classification society, a firm that is retained to certify that the newbuild vessel complies with safety and environmental standards. Only once the classification society has approved a particular phase the shipbuilder can move to the next phase.

(60) Finally, shipbuilders active in the building of commercial vessels are multi-product firms. This because their shipyards typically produce, at the same time, a number of different vessel types.²⁴

6.3. Procurement and key parameters of competition

(61) As explained above, the procurement process for cargo vessels involves different stages. The first one is the invitation to the tender. In most cases, when the customer is a large shipping or oil company or a government body, a formal open tender is organized. The buyer publicly invites shipbuilders (typically more than two²⁵) to tender, in some cases through a broker, and may also limit the number of participating shipbuilders. Alternatively, usually when the buyer is a private owner, an informal process takes place. In this case, the buyer itself or a broker contacts shipbuilders either at the same time (multilateral) or one by one if an agreement is not reached with the previous shipbuilder (bilateral).

(62) Tender data for 2011-2020 submitted by the Parties to the Commission specify, according to the Parties’ best knowledge, whether one or more shipbuilder was invited, regardless of the type of tender. **Table 1** and **Table 2** show the tender type for the different vessel classes. Although there are unconfirmed tenders, multilateral tenders are prevalently used across all vessel types.

Table 1 Mode of competition based on HHI tender data, 2011-2020

	Bilateral tender	Multilateral tender	Unconfirmed
LLNGC ²⁶	[...]	[...]	[...]
VLGC	[...]	[...]	[...]
Post-Panamax ²⁷	[...]	[...]	[...]
VLCC ²⁸	[...]	[...]	[...]

Source: HHI’s tender data submitted in response to RFI 65

Table 2 Mode of competition based on DSME tender data, 2011-2020

	Bilateral tender	Multilateral tender
LLNGC	[...]	[...]
VLGC	[...]	[...]
Post-Panamax	[...]	[...]
VLCC	[...]	[...]

Source: DSME’s tender data submitted in response to RFI 65

(63) In turn, the results of the market investigation reveal that the key parameters of competition for the majority of customers having expressed an opinion, especially in relation to LLNGCs, are in order of importance: quality/vessel’s performance, price, slot availability/delivery time, engineering skills/design, track record/technology and

²⁴ Organisation for Economic Co-operation and Development (OECD): *An analysis of market-distorting factors in shipbuilding. The role of government interventions*; OECD Science, technology, and industry Policy Papers April 2019 No.67, page 20.

²⁵ Form CO p. 406.

²⁶ [...].

²⁷ Post-Panamax containership is a vessel that can carry at least 15 000 TEUs.

²⁸ VLCCs are very large crude carriers of at least 200 000 DWT.

historical relationship.²⁹ Hence, quality/vessel performance plays a prominent role in the negotiations and in the price setting mechanism, especially with respect to more complex vessels like LLNGCs, in line with the Commission's understanding of the highly sophisticated nature of these vessels and their various levels of differentiation. Conversely, contrary to the Notifying Party's argument, price and payment terms do not seem to be the most prevalent competition parameters on the basis of which customers select suppliers.³⁰

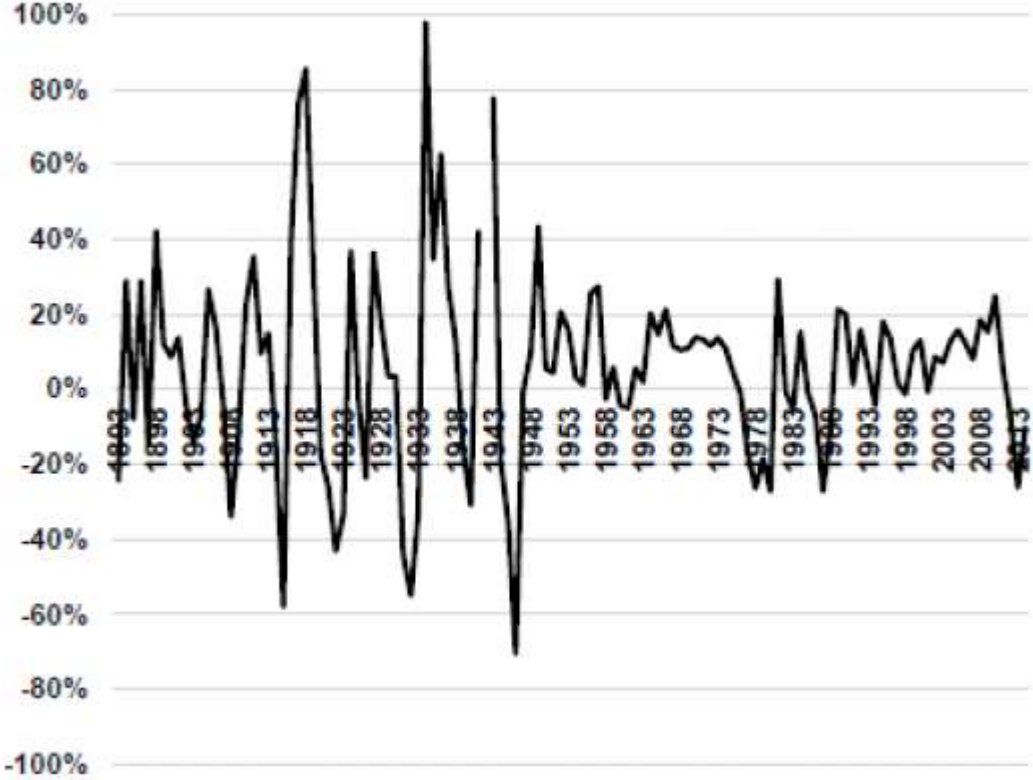
6.4. Cyclical industry and capacity

- (64) Significant time, sometimes as much as three years, lapses from the moment a decision is taken to order a new vessel, a shipbuilder is chosen, the terms of the order are negotiated, the vessels are built and delivered. Consequently, the demand for new cargo vessels depends on the forecasts of future demand for sea transport services, several years in advance.
- (65) Future demand for sea transport services has various drivers including the global economic outlook, evolution of underlying markets (for example, LNG imports are expected to grow and with them the need for LNGCs), trade flows (for example, the significant decrease in the seaborne export of oil from the Middle East to the US) and geopolitical developments (for example, trade wars). Another important consideration in ordering a new vessel is the future cost of its operation, maintenance and environmental footprint.
- (66) The above elements mean that shipbuilders do not experience a steady flow of orders overall or for a particular vessel type over time. Indeed, as illustrated in **Figure 1** below, demand in the industry tends to be cyclical with periods of high demand followed by periods of low demand.

²⁹ Replies to question 18 of Questionnaire Q3 to Customers. [DOC ID: 3244]

³⁰ Form CO, paragraphs 1174-1202.

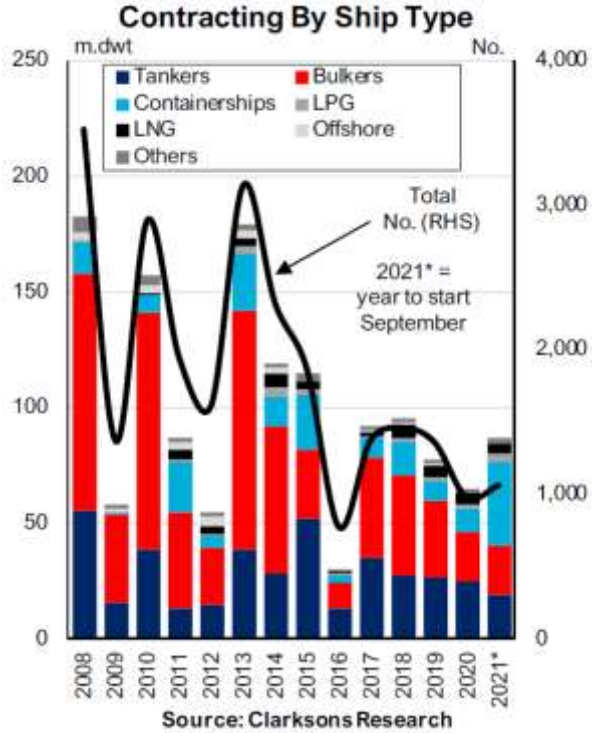
Figure 1 Year on year change in commercial shipbuilding output, 1983 to 2014



Source: Paul Stott "Towards a Better Understanding of the Commercial Shipbuilding Market", April 2018, available on <http://www.oecd.org/sti/ind/towards-a-better-understanding-of-the-commercial-shipbuilding-market.pdf>

- (67) Because of the cyclical nature of demand in the cargo shipbuilding industry, it is difficult for shipbuilders to calibrate their capacity in a way that allows for flexible adjustments to demand levels. Conversely, the shipbuilding industry is by and large a fixed costs industry requiring significant investments in infrastructure. In addition, the industry requires a large and skilled workforce that cannot be found at short notice. The relevant investments and built-up of workforce require a significant time to be developed and cannot be easily adjusted either to changes in demand. Overall, shipbuilders need sufficient capacity to make the most of the peak years in the cycle but they may have unemployed spare capacity in the slump years.
- (68) As shown in **Figure 2**, in the decade since 2009, the shipbuilding industry has experienced a low level of orders overall compared to the peak in 2007-2008.

Figure 2 Contracting by ship type



Source: Clarksons [Research] Shipping Review and Outlook, September 2021

- (69) As a result, industry analysts have in the past observed a phenomenon of overcapacity in the shipbuilding industry overall.³¹ However, the recent outlook has been more optimistic. According to industry analyst Clarksons [Research], global capacity already shrunk by 36% from its peak in 2011 and that it is likely that most over capacity has by now left the industry. Further cuts are projected to be relatively moderate and global shipbuilding is projected to increase by 31% from the end of 2019 until 2023 while the utilisation rates at shipyards are planned to reach 88%.³² In a more recent report, industry analyst Clarksons [Research] reports that regardless of possible increase in shipbuilding capacity, orders and deliveries are likely to keep the industry balanced: “[...] [a]s a result of the pick-up in delivery volumes (driven by firm contracting in 2021 so far), utilisation is expected to rise to a high of c. 90% in 2024”.³³
- (70) The immediate effect of the COVID-19 pandemic in its early months was a decrease in commercial shipbuilders’ output due to restrictions imposed on workplaces and a steep decline in orders due to “operational challenges for [ship] owners to visit yards and increasingly weak sentiment around strategic transactions in the current economic environment.”³⁴ However, Clarksons [Research] reported in September

³¹ See for example, Organisation for Economic Co-operation and Development (OECD) “Imbalances in the shipbuilding industry and assessment of policy responses”, April 2017 available on https://www.oecd.org/industry/ind/Imbalances_Shipbuilding_Industry.pdf.

³² Clarksons [Research], “The shipbuilding market 2019-2031”, forecast report, March 2019, page 36, submitted by the Notifying Party in response to RFI 1, Annex Q9.2.

³³ The Notifying Party reply to RFI 67 – Clarksons [Research] – “The Newbuilding Market 2021-2033 – Forecast Report, September 2021”, page 30

³⁴ Clarksons [Research] “Shipping Review & outlook”, Spring 2020, page 30, submitted by the Notifying Party on 5 May 2020. Note that, before placing orders, ship owners typically visit the shipyards for first hand impression and audit of its building process.

2021 that “[h]aving faced a range of Covid-10 related impacts for much of 2020, [shipbuilding] has improved significantly into 2021. In the first eight months of the year, 1,060 vessels (c.1,000+GT) of 85.6m dwt and 63.7m GT were reported ordered globally, the strongest start to a year since 2014. On an annualised basis, contracting is equivalent to more than a double the 2020 level in dwt and GT terms, driven mainly by the dramatic surge in containership contracting since Q4 2020”.³⁵ As explained in **Section 8.3.6**, this is equally true for LLNGCs. As confirmed by Clarksons [Research] in September 2021, “[a]gainst the backdrop of spectacular market conditions, [...] LNG carrier contracting is on track to see a strong total this year, with 47 ships of 7.0m cbm ordered in Jan-Aug”.³⁶

- (71) Overall, capacity in the shipbuilding industry is often computed in terms of maximum aggregate compensated gross tonnes (“CGT”) of output in a given period (usually annual basis) at the level of the shipyard.³⁷ This CGT metric is a statistical tool used by the industry to measure and compare shipyards’ activity and it takes into account a vessel’s total cargo carrying capacity (Gross Tonnage, GT), as well as the complexity related to the shipbuilding process.³⁸ By doing so, this metric aims to smoothen out the differences in the output mix when comparing the production of shipyards over time or across different entities. Conversely, while shipbuilders normally build in parallel several vessel types at any given point in time in their shipyards,³⁹ CGT does not capture the capacity of shipyards to build particular vessels, such as LNGCs, let alone specific categories of vessels within a particular type or class based on size or other technological features and characteristics, such as LLNGCs.
- (72) In terms of the time horizon to be considered, for the estimation of the maximum level of output, different choices can be made. A longer period would capture variations in output that would not be captured by looking at a shorter period. However, considering a too long period may overestimate a shipyard capacity if the production capacity of the shipyard in question has been reduced over time. For example, the OECD is assessing shipyard capacity looking at the maximum level of output in terms of CGT considering both a period of 15 years and a shorter period of only the last 3 years.⁴⁰

³⁵ Clarksons [Research] “Shipping Review & outlook”, September 2021, page 31, submitted by the Notifying Party in reply to question 1 of RFI 67.

³⁶ Clarksons [Research] “Shipping Review & outlook”, September 2021, page 31, submitted by the Notifying Party in reply to question 1 of RFI 67.

³⁷ The metric CGT was developed by the OECD and it is an indicator that aim to standardize and make comparable across vessels the amount of work that is necessary to build a given vessel. It is computed on the basis of the internal volume of a vessel (tonnage) and a coefficient that accounts for the ship type and size.

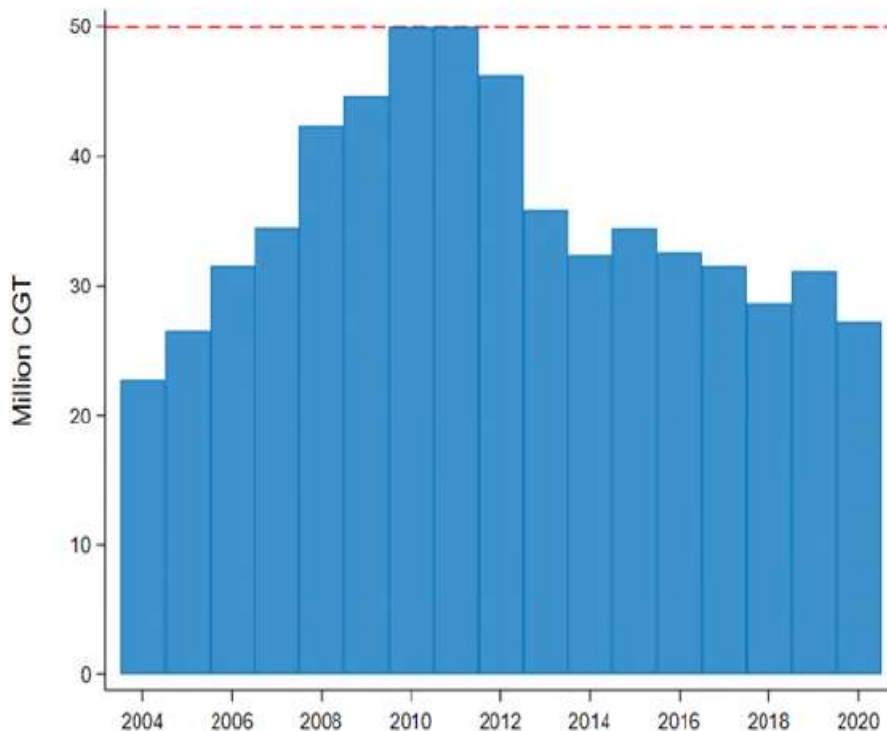
³⁸ Notably, this metric does not apply shipyard specific conversion factors but it uses industry wide factors.

³⁹ Not necessarily only commercial vessels. For example, DSME uses its single shipyard to build commercial vessels (of different types and sizes), offshore units and naval vessels.

⁴⁰ See for example, Organisation for Economic Co-operation and Development (OECD), “Imbalances in the shipbuilding industry and assessment of policy responses”, April 2017, page 16. Available on https://www.oecd.org/industry/ind/Imbalances_Shipbuilding_Industry.pdf. Notably the choice between a 3 years or a 15 years period would have an impact on the assumed maximum capacity. Choosing a longer period may better capture periods of high output and therefore leads to higher capacity estimates. On the other hand, a longer period may not account for capacity reductions that took place and may overestimate the actual production capabilities of the shipyards.

- (73) In relation to the total worldwide overall shipbuilding output, **Figure 3** shows that such output peaked in the years 2010-2011 at about 50 million CGT and then fell at levels just below 30 million CGT in more recent years, while nevertheless denoting a growth with respect to the levels of the early 2000.

Figure 3 Estimation of shipyard's capacity for overall shipbuilding industry



Source: Notifying Party Form CO page 325; updated in reply to RFI 67, page 26 (based on Clarksons data updated to 30 September 2021)

- (74) Considering HHI and DSME specifically, **Figure 4** and **Figure 5** present the evolution of their overall shipbuilding output, measured in terms of annual deliveries in CGT between 2001 and 2020.
- (75) As depicted in **Figure 4**, in line with the trend of the overall shipbuilding industry, HHI experienced a rapid growth in output between 2001 and 2008, as its output almost tripled. The annual output of HHI then remained broadly constant on average terms between 2009 and 2016 with at least three peaks of over [...] in terms of annual vessels delivered (reached respectively in the years 2008, 2011 and most recently in 2015). In the period 2017-2019 there was a slight decrease in deliveries with a more significant fall in deliveries in 2018 and signs of recovery in 2019.
- (76) As depicted in **Figure 5**, DSME also saw its level of output increasing [...] in the period between 2000 and 2010. [...].
- (77) This data on the overall shipbuilding capacity of the Parties, approximated by their maximum level of output over the past 10 years, indicates that in 2019, before the

Covid-19 outbreak, the Parties had a relatively high capacity utilization ratio.⁴¹ Thus, based on this methodology, DSME's capacity utilization would be [...] and HHI's about [...] (considering all vessels and overall output).

Figure 4 HHI historical output by CGT, all vessels

[...]

Source: Commission calculations based on Clarksons database submitted by the Notifying Party responsive to RFI 67

Figure 5 DSME historical output by CGT, all vessels

[...]

Source: Commission calculations based on Clarksons database submitted by the Notifying Party responsive to RFI 67

- (78) The Commission considers that the above general observations on aggregate shipbuilders' output only provides a broad overview of the development of total production over time. In turn, the fact that a metric has been developed to measure output across different vessel types cannot by itself imply that there is perfect substitution across vessel types and that it is possible to establish some clear rates of substitution across different vessel types only based on CGT. This is particularly relevant when assessing the capabilities and capacity to build highly specialized vessels.
- (79) For example, if a standard non-LNGCs type of vessel accounts for 28,000 CGT and an LLNGC accounts for 84,000 CGT, it would not be correct to assume that a shipyard that used to produce three standard vessels could produce a LLNGCs just because of this established mathematical ratio.
- (80) Indeed, only looking at the CGT metric disregards the particular set up and specialization of shipyards. A shipyard could have a set up, cost structure and features that make it more efficient to build a specific vessel type. This efficiency would be lost when switching to other vessel types and may not be captured by the conversion ratio implied by the CGT metric. At the same time the efficiency in building a specific vessel may not be constant with the volume of production. Therefore increasing the level of production of a specific vessel type beyond a certain level may require increasingly additional resources and this would not be captured by using a fixed conversion ratio as implied by the CGT metric.
- (81) The premise that capacity for specific vessel types may not be correctly estimated by aggregating CGT figures, especially across different vessel types, finds also support in internal documents of DSME. Indeed, [...].⁴² This is also consistent with the assessment presented in **Section 7.2.3.1 (B)**.

⁴¹ The time window of 10 years has been chosen following the evidence of the market investigation as illustrated in paragraph 874. Notably, taking a period of 10 years (2011-2020) would in any case include the period of peak deliveries. Thus, there is no risk of underestimating capacity.

⁴² Exhibit 43 of the study submitted by DSME on 30 January 2020 assesses [...].

7. MARKET DEFINITION

(82) The Parties' activities overlap in the manufacturing of cargo vessels⁴³ (bulk carriers, tankers, containerships, ferries, liquefied gas carriers – both LNG and LPG carriers, car carriers and tugs), naval vessels and offshore facilities. The Transaction gives rise to affected markets with respect to LLNGCs (LLNGCs overall, conventional LLNGCs only and large FSRUs only), VLGCs, oil tankers (of various sizes), and containerships (of various sizes).

7.1. Introduction to LLNGCs⁴⁴

(83) LNGCs are cargo vessels carrying liquefied natural gas ("LNG"). LNG is essentially methane that has been cooled to circa -162°C to be liquefied and thus occupy substantially less volume than its normal gaseous volume, making it more suitable for transport over long distances. At its destination, LNG can then be reconverted back into gas via regasification facilities (either onshore such as in LNG terminals or offshore via ship-to-ship transfer from a conventional LNGC to an FSRU, a special type of LNGC functioning as an import terminal) and piped into local gas pipeline networks.⁴⁵

(84) The size of an LNGC is measured in terms of cargo capacity in cubic meters ("m³"). As shown by the data submitted by the Notifying Party, the largest LNGCs in terms of cargo capacity are currently those that can contain up to 263,000m³ of LNG.⁴⁶

(85) In terms of demand for LNG in Europe, as shown in **Figure 6** below, Europe's imports of LNG have been consistently increasing since 1990.

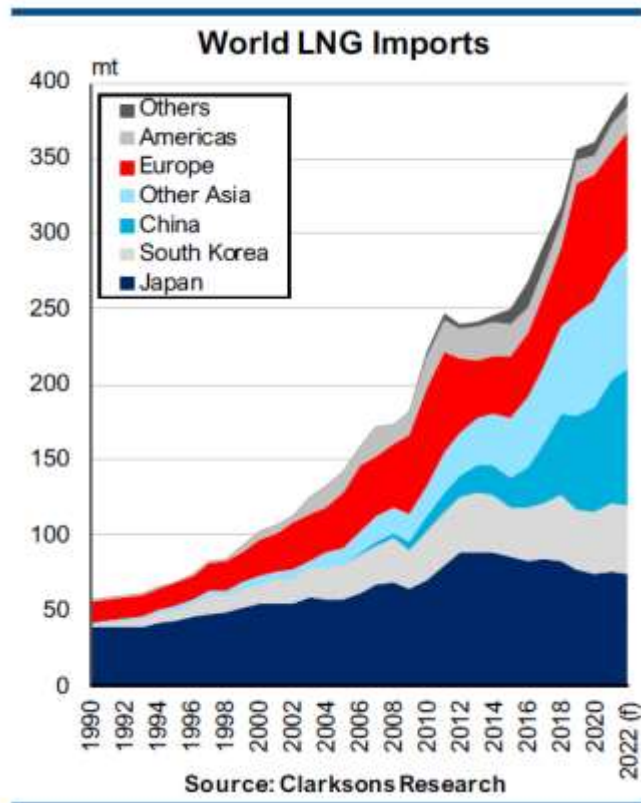
⁴³ In the SO and in the Second Letter of Facts, the Commission used, on the one hand "commercial vessels" and "cargo vessels" and, on the other hand, "commercial shipbuilding" and "cargo shipbuilding" in an almost interchangeable way. Also in its SO, the Commission recalled that in Case M.2772 – HDW/Ferrostaal/Hellenic Shipyard (2002) and in Case M. 4956 – STX/Aker Yards the Commission notably considered that cruise ships constituted a distinct market from other commercial vessels and that chemical/oil tankers and product tankers were distinct from other commercial vessels. As regards other categories of ships, the Commission left the question open and used the terms "commercial vessels" and "cargo vessels" as well as "commercial shipbuilding" and "cargo shipbuilding" in an interchangeable way throughout its assessment. The Commission uses both terms in the present decision.

⁴⁴ In the SO, with respect to LNGCs, the Commission used the following terminology, which is also valid for the purposes of this decision: LNGCs including ice-breaker or Arc7 LNGCs are referred to as "conventional LNGCs"; Floating Regasification Units are referred to as "FSRUs"; conventional LNGCs and FSRUs are together referred to as "LNGCs"; small conventional LNGCs and small FSRUs are together referred to as "small LNGCs"; large LNGCs including large ice-breaker or Arc7 LNGCs are referred to as "conventional LLNGCs"; conventional LLNGCs and large FSRUs are together referred to as "LLNGCs".

⁴⁵ Clarksons [Research] Spring 2019, page 63. [DOC ID: 31]

⁴⁶ The Notifying Party's reply to question 5 of RFI1, Annex Q5. See also the Notifying Party's reply to question 16 of RFI 67, Annex Q16.

Figure 6 World LNG Imports



Source: Clarksons [Research] Shipping Review & Outlook, September 2021, Figure 2.2.15 - submitted by the Notifying Party as Annex Q1 to RFI 67]

- (86) Based on Clarksons research,⁴⁷ initial expectations in the spring of 2020 for LNG trade for that year had been positive with LNG trade projected to increase by 7% (9% in tonne-mile). Although following the outbreak of the Covid-19 pandemic, gas demand has been reducing suggesting that LNG trade growth could be limited to 2% in 2020, Clarksons [Research] expected in the spring of 2020 the LNG sector outlook to remain positive in the longer term.⁴⁸ In September 2021, Clarksons [Research] confirmed that “[...] LNG trade has grown by an estimated 7% y-o-y in Jan-July [...], with 5.8% growth projected in the full year and 3.6% in 2022. Due to a firm rebound in long-haul US exports, tonne-mile trade is projected to grow by a robust 10.2% in 2021.”⁴⁹
- (87) The importance of LNG trade for the EU is also apparent from the fact that 21% of all the important projects of common European interest for energy, which are intended to promote energy security across borders, consist of gas projects, in line with the role of gas when meeting EU’s decarbonisation objectives. These gas projects include LNG specific projects, namely new LNG terminals in Greece,

⁴⁷ Clarksons Research Group Limited is a research pool, which is part of the Clarksons group, the worldwide leading provider of shipbroking and integrated shipping services.

⁴⁸ The Notifying Party’s reply to follow up to question 2 of RFI 36 – Clarksons [Research] Spring 2020, page 26.

⁴⁹ Clarksons [Research] Shipping Review & Outlook, September 2021, page 12 - submitted by the Notifying Party as Annex Q1 to RFI 67.

Cyprus and Poland, as well as two terminals in Croatia and Ireland, where natural gas produced by fracking is expected to be imported from the US to the EU. [...].⁵⁰

- (88) In turn, LNGCs represent an important segment of commercial shipbuilding.⁵¹ Based on Clarkson data provided in response to RFI 67, 216 LNGCs of all size categories were ordered over the 2016-2020 period for a total value of about 39 billion USD.⁵² During those years, 188 LLNGCs were ordered (which means that LLNGCs represent no less than 87% of LNGCs) for a total value of, as explained in **Section 8.3.6**, of EUR 32.8 billion.⁵³ EEA customers (including UK) ordered 88 LLNGCs, representing around 47% of orders.⁵⁴

7.1.1. *Differentiation between LNGCs*

- (89) The Commission finds that, for the reasons explained in the present Section, LNGCs are a differentiated product based on four main parameters of differentiation: by type of LNGCs, by type of gas containment systems technology, gas handling systems and dual-fuel engines, by innovative technologies, and by overall quality of the vessel.

7.1.1.1. The Notifying Party's view

- (90) In its Response to the SO, the Notifying Party argues that the Commission would significantly underplay the extent of homogeneity of LLNGCs.⁵⁵
- (91) In its Response to the First Letter of Facts, the Notifying Party argues that LLNGCs are not meaningfully differentiated products as LLNGC shipbuilders would offer sufficiently equivalent products.⁵⁶
- (92) In its Response to the Second Letter of Facts, the Notifying Party maintains that the Commission would significantly underplay the extent of homogeneity in the LLNGC market.⁵⁷

7.1.1.2. The Commission's assessment

(A) Differentiation by type of LNGCs: FSRUs and icebreaker LNGCs

- (93) In addition to standard LNGCs, there are FSRUs and icebreaker or Arc7 LNGCs. FSRUs are specialised LNGCs with a regasification function used to store, regasify and send natural gas onshore. The regasification function can either be installed as a separate unit on a vessel (either on an existing conventional LNGC converted into an FSRU or on a new-built FSRU) or, alternatively, used only as an offshore installation (i.e. without transporting LNG). In the latter case, FSRUs receive LNG from the transporting conventional LNGCs. Although FSRUs can, in theory, be used as a conventional LNGC (FSRUs typically have self-propulsion systems), in practice, it is

⁵⁰ The Notifying Party's internal documents responsive to RFI 3, "LNG Terminal Krk, Croatia", dated 18-20 April 2017, slides 3, 5, 10, EU_HHI_0000280. [DOC ID: 1514-41]

⁵¹ Commercial or merchant ships are vessels used for the commercial transport of cargo or passengers. Other types of vessels are, among others, naval ships and offshore facilities that the Parties build.

⁵² The Notifying Party's replies to questions 13 of RFI 67, Annex Q13; See also the Notifying Party's reply to question 38 of RFI 67, Annex Q38.

⁵³ The Notifying Party's replies to questions 13 of RFI 67, Annex Q13; See also the Notifying Party's reply to question 38 of RFI 67, Annex Q38.

⁵⁴ The Notifying Party's replies to questions 13 of RFI 67, Annex Q13; See also the Notifying Party's reply to question 38 of RFI 67, Annex Q38.

⁵⁵ Response to the SO, see, for example, paragraph 91.

⁵⁶ Response to the First Letter of Facts, see, for example, paragraph 150.

⁵⁷ Response to the Second Letter of Facts, see, for example, paragraph 301.

less efficient to do so from a fuel consumption perspective. Conversely, FSRUs have two major advantages over onshore import terminals, namely that, first, LNG can be brought online faster and, secondly, an FSRU on a long-term charter contract is less capital-intensive than an LNG onshore terminal. For example, one industry report states that the FSRU market “[...] is growing rapidly. [...] FSRUs will continue to play an important role in bringing LNG imports to new countries.”⁵⁸ Indeed, in emerging LNG consumer countries, FSRUs are preferred to LNG onshore terminals due to the significant amount of time and cost to build onshore facilities.⁵⁹ Contrary to what argued by the Notifying Party,⁶⁰ FSRUs will be increasingly important not only for developing economies but also for the European economy. Indeed, as explained in **Section 8.3.6** of the 2015-2019 total market size (in value) of EUR 2.7 billion, 62% came from EEA customers.⁶¹ Of the 2016-2020 total market size (in value) of EUR 1.83 billion, 67% came from EEA customers.⁶²

- (94) Besides FSRUs, there is another type of LNGC that has different features than standard LNGC and is used in specific circumstances, namely ice-breaker LNGCs. Indeed, standard LNGCs are not intended for navigating freezing seas, though they may be assisted by non-cargo and conventional ice-breaker boats to navigate icy waters. In this context, DSME has built and delivered the first ice-breaker LLNGC in 2016 (and so far DSME is the only one having delivered such vessels).⁶³
- (B) Differentiation by type of gas containment systems technology, gas handling systems and fuel engines
- (95) LNGCs are technically and technologically complex vessels as LNG needs to be transported at extremely low temperatures. This requires mastering specific technologies related to LNG gas containment and LNG gas handling system. In addition, LNGCs have shifted to dual fuel engines also using LNG as propulsion fuel.
- (96) There are various types of LNG gas containment technologies and LNG gas handling technologies.
- (97) With regard to LNG gas containment system technologies,⁶⁴ these are used to store LNG at the appropriate temperature to avoid that the liquified gas will gasify again and therefore evaporate, by using an insulation system. For this reason, know-how in mastering such technology appears to be crucial to build LNGCs: the tank structure must not only be designed and manufactured but also installed in a way that is strong enough to prevent the leakage of gas. There are two types of tanks that respond to different end uses: cargo tanks, aimed at transporting LNG to destination, and fuel tanks, aimed at carrying LNG to be used as a fuel. For both types of equipment, there are two types of tanks: self-supporting or non-membrane tanks, which have their own structure and membrane tanks, which form an integral part of the hull. More specifically, membrane tanks tend to use either MARK or NO technologies, while non-membrane tanks tend to use MOSS or Type C technologies. A typical non-

⁵⁸ Danish Ship Finance, “Shipping Market Review”, November 2018, page 85. [DOC ID: 3136]

⁵⁹ The Notifying Party’s reply to question 40(d) of RFI 1.

⁶⁰ Response to the SO, paragraphs 105-1017.

⁶¹ The Notifying Party’s reply to question 9 of RFI 67, Annex Q9.

⁶² The Notifying Party’s reply to question 9 of RFI 67, Annex Q9.

⁶³ The Notifying Party’s reply to question 2 of RFI 14, Annex Q2. See also the Notifying Party’s reply to question 26 of RFI 67, Annex Q26.2.

⁶⁴ The notion of containment includes the entire system (i.e. physical equipment and technologies) used for storage, leakage prevention, insulation and management of LNG transport in an LNG carrier.

membrane cargo tank⁶⁵ used in LLNGCs, such as MOSS tanks, requires one layer of insulation, while a typical membrane cargo tank used in LLNGCs has two layers of insulation around the entire tank. Membrane tanks were first developed by GazTransport & Technigaz (“GTT”).

- (98) MOSS tanks used to be preferred by customers as they were considered to be more stable than membrane tanks. However, after GTT introduced two new membrane tank models (“MARK III” in 1993 and “NO 96” in 1994), the membrane type tank proved to be stable (although, as explained in **Section 7.1.1** and **Section 8.3.3** still subjected to differentiation and innovation) and is now since a number of years the preferred type of LNG cargo tank for LLNGCs, in particular because it enables LLNGCs to transport a higher volume of LNG compared to MOSS tanks. Thus, according to the data submitted by the Notifying Party, 77% of all LNGCs (regardless of size) delivered in 2014–2018, 74.5% of those delivered in 2015–2019, 76% of those delivered in 2016–2020 and 79% of those delivered in 2017–2021 (up to 30 September 2021) included a membrane tank.⁶⁶ Moreover, 83.5% (81.9% for conventional LLNGCs; 100% for large FSRUs)⁶⁷ of all LLNGCs delivered in 2014–2019, 85.4% (84.3% for conventional LLNGCs; 100% for large FSRUs)⁶⁸ of those delivered in 2015–2020; and 87.4% (86.5% for conventional LLNGCs; 100% for large FSRUs)⁶⁹ of those delivered in 2016–2021 (up to 30 September 2021) include a membrane tank.⁷⁰ All LLNGCs ordered since 2015 include a membrane tank.⁷¹ For LLNGCs, [...].⁷² [...] ⁷³ [...] ⁷⁴ In small LNGCs, another non-membrane type of tank (called Type C) is the preferred technology. This is because non-membrane LNG tanks are easy to be inserted into a vessel’s hull only if the hull is small, whilst a membrane tank is more suitable for LLNGCs.
- (99) With regard to LNG gas handling systems technologies (which change depending on whether they are used for conventional LNGCs or for FSRUs), these are necessary for transferring LNG (i) from cargo tank to cargo tank by a re-liquefaction system, to recover the LNG that evaporates from the cargo tank during transportation to liquid state and return it to the cargo tank (ii) from cargo tank to onshore by a re-gasification system and (iii) from cargo tank to engine by a fuel gas supply system (“FGSS”).
- (100) With regard to fuel engines, according to the data submitted by the Notifying Party, nearly all LNGCs (small and large) ordered in 2015–2019, in 2016–2020 and in

⁶⁵ Another type of non-membrane LNG cargo tank is the one developed in-house by [...] ([...]). Based on the information available, such cargo tank containment system technology was not used in other LLNGCs than those delivered by [...]. As explained in **Section 8.3.4.3** and **Section 8.3.8.3 (B)** [...] experience with LLNGCs building was not successful and this is unlikely to change in the future.

⁶⁶ The Notifying Party’s reply to question 20 of RFI 67, Annex Q20.

⁶⁷ The Notifying Party’s reply to question 23 of RFI 67, Annex Q23.

⁶⁸ The Notifying Party’s reply to question 23 of RFI 67, Annex Q23.

⁶⁹ The Notifying Party’s reply to question 23 of RFI 67, Annex Q23.

⁷⁰ The Notifying Party’s reply to question 22 of RFI 67, Annex Q22..

⁷¹ See **Section 8.3.1** and the Notifying Party’s reply to question 16 of RFI 67, Annex Q16, where it is shown that no Japanese shipbuilder received any LLNGC orders since 2016.

⁷² The Notifying Party’s reply to RFI 21. See also the Notifying Party’s reply to question 23 of RFI 67, Annex Q23.

⁷³ Boil-off rate is the amount of liquid that is evaporating due to heat leakage and expressed in % of total liquid volume per unit time.

⁷⁴ The Notifying Party’s reply to questions 49 and 50 of RFI 1. See also the Notifying Party’s reply to question 21 of RFI 67.

2017-2021 up to 30 September 2021⁷⁵ are equipped with a dual-fuel propulsion system as this assists with the efficient handling of naturally evaporated LNG, which can be used as fuel. There are two types of dual fuel engines used on LLNGCs, namely XDF and MEGI.

(C) Differentiation by innovative technologies

(101) LLNGCs are sophisticated vessels and shipbuilders compete not only or mainly on price and cost efficiency, but on their technological offering and performance, amongst other factors. As discussed in more detail in **Section 8.3.3** and **Section 8.3.8**, the market investigation showed that innovation takes place in a number of areas of LLNGC shipbuilding and that the Parties (especially DSME) are important innovators.

(102) As an illustration, **Figure 7** below presents an extract from DSME's 2020 business plan. As part of this plan, [...].

Figure 7 DSME's analysis of lost projects

[...]

Source: Annex 10.2 Response to RFI 45, page 12

(103) Moreover, LLNGCs are characterized by the existence, continuous development and implementation of various associated technologies (see **Section 8.3.3**) such as Arc⁷⁶, air lubrication⁷⁷, rotor sail⁷⁸ and new LNG cargo tank containment system technologies.⁷⁹ For instance, as confirmed by [...], [...] is currently developing a new membrane technology called [...], which is expected to be commercialised at the beginning of 2022.⁸⁰ Such cargo tank containment system technology is a sort of hybrid between MARKIII and NO96 types.⁸¹ From a market point of view, [...]'s key feature is its ability to reduce the boil-off rate (the rate at which LNG evaporates during transport and storage per day) to 0.07% of LNG cargo volume per day, reaching performance of MARKIII Flex+'s system, which is currently [...]'s best-in-class technology relating to boil-off-rate.⁸² Although this technology is licensed out to shipbuilders by [...], as explained in **Section 8.3.3** and **Section 8.3.8**, shipbuilders do play a role in its development and implementation either by suggesting design improvements or by implementing non-design improvements to [...]' technology.

(104) [Parties' internal document] ⁸³

(D) Differentiation by overall quality of the vessel

(105) As will be discussed in more detail in **Sections 8.3.2** and **Section 8.3.4.2**, the market investigation showed that there are quality differences between LNGCs and LLNGCs built by different shipbuilders.

⁷⁵ The Notifying Party's reply to question 21 of RFI 1, Annex Q21.1. See also the Notifying Party's reply to question 1 of RFI 34, Annex Q1. See also the Notifying Party's reply to question 16 of RFI 67, Annex Q16.

⁷⁶ It is also referred to as ice-breaker LLNGCs or ice-breaker. See **Section 8.3.6**.

⁷⁷ See **Section 8.3.3**.

⁷⁸ See **Section 8.3.3**.

⁷⁹ See **Section 8.3.3**.

⁸⁰ [...]'s reply to question 1 of the Commission RFI 2 to [...] dated 8 February 2021. [DOC ID: 4726].

⁸¹ [...]'s reply to question 1 of the Commission RFI 2 to [...] dated 8 February 2021. [DOC ID:4726].

⁸² [...]'s reply to question 1 of the Commission RFI 2 to [...] dated 8 February 2021. [DOC ID: 4726].

⁸³ [...].

7.2. Product market definition

7.2.1. *The Notifying Party's arguments*

7.2.1.1. Arguments with respect to commercial vessels

- (106) First, the Notifying Party submitted that the relevant product market should encompass all commercial vessels. The Notifying Party's main argument in favour of one overall single product market for all commercial vessels was that the commercial shipbuilding market is characterised by strong supply-side substitutability. The Notifying Party submitted that, once a shipbuilder has experience producing different vessel types, it requires no additional time and costs to switch between the production of different vessel types, because the same facilities, processes and manpower can be used to fulfil all subsequent vessel orders. Once a shipbuilder has decided to invest into a new vessel type, there would only be minor costs involved in switching production to a vessel type that it has not provided before. These costs would not be material to constitute a barrier to switching.⁸⁴
- (107) Second, the Notifying Party considered that the overall market for commercial shipbuilding should include all new built commercial vessels ("newbuilds") as well as all second-hand commercial vessels. To support this claim, the Notifying Party argued that, from the customers' point of view, second-hand vessels and newbuilds would be largely substitutable since both would be used for the same purpose and, considering the very long lifetime of vessels, both can have for a long period of time similar performance and overall operational capability.⁸⁵
- (108) Third, the Notifying Party considered that, should the market be further segmented, it should be segmented only by vessel type as opposed to the specific vessel sizes that exist within each particular vessel type. While each commercial vessel type can be classified by size into (i) small; (ii) medium and (iii) large vessels, the Notifying Party submits that such a segmentation by size would be irrelevant based on the following arguments: (i) within each vessel type, there is high demand-side substitutability between various sizes. While the vessels may be different in size, they are used for the same purpose due to the same characteristics of the same cargo.⁸⁶ (ii) There is a chain of substitution between different sizes as substitutability between adjacent classes would create a chain effect from the largest down to the smallest size.⁸⁷
- (109) Similarly, the Notifying Party also considered that supply-side substitution is high between different sizes of one particular type and there would be no special expertise, know-how or technology in relation to building a particular size within a vessel type. The Notifying Party argues that most shipbuilders are able to and do build nearly every size within one particular vessel type.⁸⁸ This argument was reiterated by the Notifying Party in its Response to the Second Letter of Facts.⁸⁹

7.2.1.2. Arguments with respect to LNGCs

- (110) In support of its argument that the relevant product market should encompass all commercial vessels, the Notifying Party argued specifically with respect to LNGCs

⁸⁴ Form CO, paragraphs 269-284.

⁸⁵ Form CO, paragraphs 296-297.

⁸⁶ Form CO, paragraph 285.

⁸⁷ Form CO, paragraphs 286-288.

⁸⁸ Form CO, paragraphs 290-292.

⁸⁹ Response to the Second Letter of Facts, paragraphs 300-301.

that the skills needed to build LNGCs are not difficult to acquire, as a skilled workforce, equipment or facilities implementing membrane tank technology can be easily obtained on the market and therefore only constitute a relative difference in building process with the other vessel types.⁹⁰

- (111) The Notifying Party also argued that FSRUs are in the same market as conventional LNGCs.⁹¹ This would be because FSRUs are merely LNGCs moored offshore to store LNG in their cargo tanks and are normally used only temporarily to serve newly established LNG supply routes until a land regasification terminal is constructed. The only structural difference between conventional LNGCs and FSRUs would be that FSRUs have a regasification equipment added. Shipbuilders, repair shipyards and other companies active in FSRUs conversions would purchase the regasification units (which are produced by equipment providers) and install them onto (newbuild or existing) LNGCs to transform them into FSRUs.
- (112) The Notifying Party further argued that, should the Commission treat FSRUs separately from other LNG carriers, the LNGCs which were ordered as “conventional” LNG carriers and later converted into FSRUs⁹² by ship repair and conversion companies, should be included in the assessment of a hypothetical market for all FSRUs.⁹³
- (113) The Notifying Party considered that the market for LNGCs should not be segmented into vessel sizes and, if it were to be further segmented by size, the market should be segmented into smaller than 40 000m³ and larger than 40 000m³ LNG carriers.⁹⁴
- (114) The Notifying Party believed that second-hand LNGCs form part of the same market as new LNGCs because they are largely substitutable from the customers’ point of view (both are used for the same purpose and, considering a very long lifetime of ships, both can have for a long period of time similar performance and overall operational capability).⁹⁵

7.2.2. *Previous Commission decisions*

- (115) In previous decisions, the Commission identified distinct product markets within the shipbuilding industry. It identified a market for military (naval) vessels distinct from commercial vessels and it considered that each type of commercial vessels could constitute a distinct product market, leading to separate markets for cargo vessels, which could potentially be further subdivided by type of cargo, ferries and cruise vessels.⁹⁶

⁹⁰ Response to the Article 6(1)(c) decision and the Notifying Party’s submission on considerations relating to the LNG market dated 26 May 2020, Section 2(a).

⁹¹ Response to the Article 6(1)(c) decision, paragraph 82. See also the Notifying Party’s submission on FSRUs, 17 April 2020, paragraph 4.

⁹² There were four conversions between 2009 and 2018.

⁹³ Response to the Article 6(1)(c) decision, paragraph 85; Response to the SO, paragraph 1025.

⁹⁴ Form CO, paragraph 745. Response to the Article 6(1)(c) decision, paragraph 246. The Notifying Party considers that the FSRU segment should not be further sub-segmented by size. According to the Notifying Party there is a strong supply-side substitutability as a supplier who has the physical capacity (i.e. docks) to produce large FSRUs will also be able to produce small FSRUs and, in most cases, vice-versa. See, Response to the SO, paragraph 1018.

⁹⁵ Form CO, paragraph 780.

⁹⁶ M.2772 – HDW/Ferrosaal/Hellenic Shipyard (2002).

- (116) In *Aker Yards/Chantiers de l'Atlantique* and *STX/Aker Yards*,⁹⁷ the Commission distinguished the construction of cruise ships from the overall commercial shipbuilding market both on the basis of demand and supply-side considerations.⁹⁸
- (117) With respect to cargo vessels, the Commission considered that the market for cargo shipbuilding could be further segmented according to the vessel type on the basis of the cargo they are designed to carry.⁹⁹ The Commission considered that the market for cargo shipbuilding could thus be divided into several product markets according to the main types of vessels such as bulk carriers, containerships, oil carriers, LNGCs and LPG carriers. However, the exact product market definition was left open.¹⁰⁰
- (118) A potential segmentation of the cargo vessel market between different types of vessels was based on the fact that the nature of the cargo transported determines the specific features of the vessels such as LNGCs and LPG carriers. In *STX/Aker Yards*, the Commission considered that there was very limited demand-side substitutability between the different types of cargo vessels. Specific categories of products require special facilities and a special design of the vessel and the cargo cannot be transported other than by dedicated vessels. For example, LNG is only transported on LNGCs and cannot be transported on any other type of cargo vessels. The various relevant types of vessels are also subject to different safety measures and specific building and regulatory criteria.¹⁰¹
- (119) In its decisional practice, the Commission has also considered segmentation by size within certain types of commercial vessels due to limited demand-side and supply-side substitutability across different size categories in relation to which market participants have developed a common understanding and which are regularly relied upon in interactions between shipbuilders and customers.¹⁰² In particular, shipping companies may not be able use different size categories of certain vessels to carry out the same types of services at competitive conditions, *i.e.*, different sizes of vessels may address different needs of shipping companies. Conversely, shipbuilders may not be active in the manufacture and supply of all size categories of certain vessels types and, generally, the size of a given vessel appears to be the main factor determining the capabilities of a particular shipbuilder in producing certain vessels, in accordance with the quality standards expected by customers.¹⁰³

7.2.3. *The Commission's assessment*

- (120) From an economic point of view, for the definition of the relevant market, demand substitution constitutes the most immediate and effective disciplinary force on the suppliers of a given product, in particular in relation to their pricing decisions.
- (121) Supply-side substitutability may also be taken into account when defining markets in those situations in which its effects are equivalent to those of demand substitution in terms of effectiveness and immediacy. This means that suppliers are able to switch

⁹⁷ M.4101 – *Aker Yards/Chantiers de l'Atlantique* (2006), paragraphs 8-23 and M. 4956 – *STX/Aker Yards* (2008), paragraphs 11-16.

⁹⁸ M.4956 – *STX/Aker Yards* (2008), paragraphs 11-16.

⁹⁹ M.2772 – *HDW/Ferrostaal/Hellenic Shipyard* (2002), paragraph 37.

¹⁰⁰ M.2772 – *HDW/Ferrostaal/Hellenic Shipyard* (2002), paragraph 38; Case M.9936 – *Imabari/JFE/IHI/JMU* (2020), paragraphs 23-24.

¹⁰¹ M.4956 – *STX/Aker Yards* (2008), paragraph 14.

¹⁰² M.4956 – *STX/Aker Yards* (2008), paragraphs 23-25; Case M.9936 – *Imabari/JFE/IHI/JMU* (2020), sections 5.1.1.2, 5.1.2.2 and 5.1.3.2.

¹⁰³ M.4956 – *STX/Aker Yards* (2008), paragraphs 23-25; Case M.9936 – *Imabari/JFE/IHI/JMU* (2020), sections 5.1.1.2, 5.1.2.2 and 5.1.3.2.

production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices. When these conditions are met, the additional production that is put on the market will have a disciplinary effect on the competitive behaviour of the companies involved. Such an impact in terms of effectiveness and immediacy is equivalent to the demand substitution effect. These situations typically arise when companies market a wide range of qualities or grades of one product; even if, for a given final customer or group of consumers, the different qualities are not substitutable, the different qualities will be grouped into one product market, provided that most of the suppliers are able to offer and sell the various qualities immediately and without the significant increases in costs described above. By contrast, when supply-side substitutability would entail the need to adjust significantly existing tangible and intangible assets, additional investments, strategic decisions or time delays, it will not be considered at the stage of market definition.¹⁰⁴

7.2.3.1. Distinction between LNGCs and other types of cargo vessels

(A) Demand-side substitutability between LNGCs and other types of cargo vessels

(122) The Commission finds that LNGCs are not substitutable from a demand-side perspective with any other type of commercial vessel.

(123) As explained in **Section 7.1** above, LNGCs are different from other types of commercial vessels, as they have to have very specific technical properties to respond to the specific customer demand, carrying LNG cooled to circa -162°C to be liquefied.

(124) The Commission notes that the absence of demand-side substitutability between LNGCs and other types of commercial vessels does not seem to be disputed by the Notifying Party.¹⁰⁵

(125) During the market investigation, the majority of customers indicated that they cannot use any commercial vessel other than LNGCs to carry out the same activities and services they provide using LNGCs.¹⁰⁶

(B) Supply-side substitutability between LNGCs and other types of cargo vessels

(126) The Commission finds that there is a limited supply-side substitutability between LNGCs and other commercial vessels and in any event, that this limited supply-side substitutability is not sufficient in terms of effectiveness and immediacy to justify extending the product market for LNGCs to include other types of commercial vessels.

(127) First, the wide difference in expertise a shipbuilder needs to be able to provide LNGCs compared to other types of cargo vessels is widely recognised. The report of the Organisation for Economic Cooperation and Development (OECD) acknowledges the existence of a certain degree of supply-side substitutability between certain types of cargo vessels but it specifies that: *“Exceptions include specialized ship types, such as cruise ships, LNG/LPG vessels or offshore services, which require experience and a well-connected supplier base.”*¹⁰⁷

¹⁰⁴ Commission notice on the definition of relevant market, paragraphs 13, 20, 21 and 23.

¹⁰⁵ Form CO, paragraph 265.

¹⁰⁶ Replies to question 6 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁰⁷ Organisation for Economic Co-operation and Development (OECD) Science, technology and industry, Policy papers, “An analysis of market-distorting factors in shipbuilding”, April 2019 (No. 67), page 11.

- (128) Second, the market investigation provided indications that there is limited supply-side substitutability between LNGCs and other types of vessels. A large majority of respondents to the market investigation stated that starting to construct a new type of vessel that a commercial shipbuilder did not construct before, and especially high-value vessels, such as LNGCs, would not be easy or would even be very difficult. For instance, one shipbuilder explained that “[i]t is not easy to develop a new type/segmentation vessel”¹⁰⁸ while another one added that “It cost a lot to prepare technical capability of designing new type ship. Usually the change would take place from easier ships to more challenging ones, so we would have to invest on necessary construction facilities such as tank production factories to start building LNG carriers, for example.”¹⁰⁹
- (129) Market participants stressed that, in order to build LNGCs, a shipbuilder would need to acquire know-how (e.g. technical understanding and installation coordination skills for the LNG cargo tank) and suitable facilities.¹¹⁰ One shipbuilder also explained that, as regards know-how and techniques required to build the different types of vessels, additional know-how was necessary for LNGCs and LPG carriers: “Besides the know-how for containers and tankers, additional know-how must be kept for the jobs of almost all engineering and construction aspects in fabrication/installation/testing.”¹¹¹ In particular, according to [...], obtaining a licence to be able to build and install the LNG cargo tank is not an easy process and it is not enough to become a credible shipbuilder.¹¹²
- (130) With regard to the building and construction process, several market participants also explained that some special facilities are necessary, in particular for LPG carriers and LNGCs. For example, a shipbuilder confirmed that “for LPG carriers, LNG carriers, special facilities shall be applied, especially for cargo hold (incl. cargo handling) manufacturing, dock erection and quay outfitting etc.”¹¹³ (sic); another one explained that “Ba[s]ically [hull] construction is almost same, but outfitting work and facilities are totally d[if]ferent among LNG Carrier, Container Carrier and Tanker. Therefore shipyard needs to adjust facilities and human resou[rc]es to meet product.”¹¹⁴
- (131) Third, the market investigation supports the finding that a shipbuilder with no experience in one type of vessel would incur high switching costs and would require several years before becoming a credible competitor for this new type of vessel.¹¹⁵ A shipbuilder would therefore not change production easily in response to small and permanent changes in relative prices,¹¹⁶ as explained by a shipbuilder: “We would switch production line up only when we think that the current of change of the market is strong enough to pay extra switching cost, or the price of the new ships are high enough, in general”¹¹⁷. The same shipbuilder stated: “It cost a lot to prepare technical capability of designing new type ship. [...] we would have to invest on necessary construction facilities such as tank production factories to start building

¹⁰⁸ Replies to question 13 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁰⁹ Replies to question 13 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹¹⁰ Replies to questions 16 and 16.1 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹¹¹ Replies to question 7 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹¹² Minutes of the conference call with [...] dated 18 July 2019. [DOC ID: 316]. See also **Section 8.3.8**.

¹¹³ Replies to question 6 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹¹⁴ Replies to question 6 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹¹⁵ Replies to question 11 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹¹⁶ Commission notice on the definition of relevant market, paragraph 20.

¹¹⁷ Replies to question 11 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

LNG carriers, for example. In that sense we would be able to start new ship type production, but take 5 - 10 years to settle economically, we understand.”¹¹⁸ Another shipbuilder confirmed that “investment will be very high”.¹¹⁹

- (132) Fourth, the market investigation also provided indications that switching would be complicated because of differences between fitting and operational expertise of different types of vessels.¹²⁰ As a result, workmanship and expertise in one specific type would be difficult to transfer to other types. A respondent stated in this context that “There are some elements in the technical specifications that are common to various types of ships, but naturally, particularly with fitting and operational features of the ship, this could be different, and would greatly depend on how well informed you are to these differences that could be reflected in the design of the ship. Any specific equipment that are not used on one type of ship, but are used on the other type of ship, your negotiating power with the manufacturer would be different from those who frequently buy the equipment. If there are special skilled workmanship required, you would need to ensure that such expertise can be transferred to your own site team. For instance, cryogenic technology and associated fitting technology including insulation, would not be familiar to the shipyards having built container ships only”.¹²¹
- (133) Fifth, the track record in building a specific type of vessel also constitutes a barrier to switching and more generally to supply-side substitutability as customers generally require before placing contracts that a shipbuilder has already successfully built vessels of the relevant type. This was explained by a shipbuilder stating that “Customers are extremely careful in making decision to select yards without track record, considering the high stake of ships investment. The examples stay in the fact of only handful of yards building very large containerships and LNG.”¹²²
- (134) In summary, there are some elements in the technical specifications that are common to various types of ships. However, when it gets to the fitting and operational features of a specific type of ships, the market investigation pointed to differences in technologies and the need for specific expertise on how to reflect these differences in the design of the ship. Certain technologies also seem most specific to certain vessel types, such as cryogenic technologies (to transport the cargo at very low temperatures) for LNGCs and LLNGCs. A builder of containership, for example, would not necessarily have the relevant know-how in such technologies.

7.2.3.2. Distinction between newbuild and second-hand LNGCs

- (135) The Notifying Party argued that second-hand vessels are part of the same relevant market as newbuild vessels, since from the customers’ point of view, second-hand vessels and newbuilds would be largely substitutable in light of their use and long lifetime.
- (136) The Commission considers that, although second-hand conventional LNGCs may, in theory, if converted, exert a very limited competitive constraint on the FSRUs segment, second-hand LNGCs do not exercise a meaningful competitive constraint and, as explained in **Section 8.3.5**, are not part of the same market as newbuild vessels for the following reasons.

¹¹⁸ Replies to question 13 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

¹¹⁹ Replies to question 13 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

¹²⁰ Replies to question 13 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

¹²¹ Replies to question 13 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

¹²² Replies to question 14 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

- (137) First, there is no or very limited demand-side substitutability between newbuild LNGCs and second hand LNGCs. As explained in **Section 8.3.5.2 (C)**, customers purchase second-hand LNGCs only in very limited circumstances¹²³ (namely as part of a chartering deal or in case the customer plans to purchase a second-hand LNGC and convert it into an FSRU). Buying a second-hand LNGC entails more risks for the customer than a newbuild LNGC (see in this regard **Section 8.3.5.2 (C)**) and second-hand LNGCs are generally not attractive as they do not include the latest technology (see in this regard, **Section 8.3.5.2 (C)**). Furthermore, the prices of the second-hand vessels do not affect the decisions of customers on whether to buy newbuilds (see **Section 8.3.5.2 (C)**).
- (138) Second, there is no supply-side substitutability between newbuild LNGCs and second hand LNGCs. Shipbuilders in general and the Parties specifically are not involved in trade in second-hand vessels. Moreover, with particular regard to LLNGCs, there are only a few specialised shipbuilders able to produce LLNGCs in the world and traders in second-hand vessels would incur significant costs if they were to start building LLNGCs. As explained in **Section 8.3.5.2 (C)** customers of LLNGCs interviewed by the Commission confirmed that the impact of second-hand LLNGCs on the market for new builds is very limited¹²⁴
- (139) Therefore, the Commission considers that second-hand LNGCs are not part of the same market as newbuild LNGCs.

7.2.3.3. FSRUs are part of the same relevant market as LNGCs

(A) LNGCs include FSRUs

- (140) As regards FSRUs, the market investigation provided indications that FSRUs might not be part of the same relevant market as conventional LNGCs. For example, a customer interviewed by the Commission indicated that an “*FSRU is a sophisticated LNG vessel which allows regasification and use of the LNG carried in the vessel. An FSRU can be used as an LNG carrier but not every LNG carrier can be used as an FSRU. [...]*”¹²⁵ The majority of customers having provided an informative response indicated that FSRUs and conventional LNGCs are not substitutable for their purposes.¹²⁶ For example, a customer stated that “*FSRUs are a separate specialised market segment [...]*”¹²⁷ Another customer clarified that “*a conventional LNG carrier cannot serve as an FSRU. An FSRU of low propulsion power and low speed cannot serve as a conventional LNG carrier. However a number of FSRUs (also called LNG-RVs) having equivalent propulsion power and speed as conventional LNG carriers can serve as LNG carriers*”¹²⁸ In this context, a shipbuilder explained that “*[...] practices to build FSRUs are not necessarily similar to the shipbuilding practices, where considerations for offshore engineering will be needed and expertise in this respect may be needed. [...]*”¹²⁹
- (141) A majority of customers responding to the Commission’s market investigation considered that FSRUs are more complex to build than conventional LNGCs, as they

¹²³ Replies to question 43 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁴ Minutes of the conference call with [...] dated 17 February 2020, paragraph 7 [DOC ID: 2958] Minutes of the conference call with [...] dated 17 February 2020, paragraph 6. [DOC ID: 2609].

¹²⁵ Minutes of the conference call with [...] dated 28 June 2019, paragraph 2. [DOC ID: 190].

¹²⁶ Replies to questions 13 and 13.1 of Questionnaire Q3 to Customers.[DOC ID: 3236].

¹²⁷ Replies to question 13.1 of Questionnaire Q3 to Customers. [DOC ID: 3236].

¹²⁸ Replies to question 13.1 of Questionnaire Q3 to Customers.[DOC ID: 3236].

¹²⁹ Replies to question 29.1 of Questionnaire Q5 to Competitors.[DOC ID: 3238].

have (among others) the regasification plant, ship-to-ship equipment and mooring equipment.¹³⁰ For example a customer stated that "[...] *the FSRUs have [and] are more complicated and complex machinery and equipment than the conventional LNG carriers*".¹³¹

- (142) As to their performance, FSRUs are considered not comparable to conventional LNGCs as they are less efficient when used as LNGCs as their fuel consumption is higher and they tend to be slower: FSRUs have more limited propulsion systems available (diesel electric propulsion mainly, as more electric power is needed for the regasification).¹³² For example, a customer stated that "[...] *most of FSRUs service speed is lower than the service speed of conventional LNG carriers [...]*".¹³³ Another customer stated that "*speed and fuel consumption of FSRU is less competitive than modern conventional LNG carrier (powered by MEGi or XDF) because of main engine*"¹³⁴ and, another customer stated that "[...] *[v]essel made for FSRU has normally bad performance when sailing as an [LNG carrier] compared to a modern [LNG carrier]*".¹³⁵
- (143) As to the intended use, while some customers stated that an FSRU can in theory be used to transport LNG, customers generally stated that FSRUs are mostly used for storage and regasification.¹³⁶ For example, one customer stated that "*FSRUs [are] alternative to shore LNG import terminals. Often less cost and faster than construction shore based terminal*".¹³⁷ Another customer stated that "[t]ypically *[FSRUs are used for] the importation and storage of LNG and its regasification. They may also act as small scale LNG supply hub*".¹³⁸ According to a customer, the different uses of the vessels also imply the use of different contracts.¹³⁹
- (144) The majority of customers that stated that they could use FSRUs in place of conventional LNGC said that it would not be that efficient given that, among others, FSRUs consume more fuel.¹⁴⁰ For example, one customer stated that "*FSRUs are not practically substitutable for [...] LNG delivery programme, as their use would be uneconomic and inefficient*".¹⁴¹ Another customer stated that using an FSRU as a conventional LNGC would "[...] *have a number of limitations: the hardware on them means some ports cant accept them, they consume more fuel as they are heavier and they can load less cargo when displacement restrictions apply*".¹⁴² A majority of customers stated that for the use for which they use FSRUs they could not use conventional LNGCs.¹⁴³ For example, one customer stated that "*FSRU is generally used as LNG receiving terminal. Conventional LNG carrier is not capable to*

¹³⁰ Replies to question 13.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³¹ Replies to question 13.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³² Replies to question 13.3 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³³ Replies to question 13.3 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³⁴ Replies to question 13.3 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³⁵ Replies to question 13.3 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³⁶ Replies to question 13.2 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³⁷ Replies to question 13.2 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³⁸ Replies to question 13.2 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹³⁹ Minutes of the conference call with [...] dated 18 February 2020, paragraph 4. [DOC ID: 2839].

¹⁴⁰ Replies to questions 15 and 15.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]. See also Minutes of the conference call with [...] dated 18 February 2020, paragraph 4.[DOC ID: 2839].

¹⁴¹ Replies to question 15.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁴² Replies to question 15.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁴³ Replies to question 14 of Questionnaire Q8 to Customers.[DOC ID: 3241].

*accommodate LNG carrier, and no equipment on board to regassify LNG and to send out high-pressure gas to shore side".*¹⁴⁴

- (145) Customers also submitted that the price of an FSRU is higher, usually by 20% to 25% than conventional LNGCs.¹⁴⁵
- (146) The Commission also assessed whether there is supply-side substitutability between FSRUs and conventional LNGCs. The Commission considers that there is some supply-side substitutability between FSRUs and conventional LNGCs for the following reasons.
- (147) First, some shipbuilders considered that it is easy for shipbuilders who already build LNGCs to start building FSRUs. In particular, [...] stated that the basic technical features of FSRUs are the same as those of a conventional LNGC.¹⁴⁶ [...] stated that it is easy to start building FSRUs and conventional LNGCs have the LNG containment system.¹⁴⁷ However, [...] also considered that “*the shipbuilder needs to acquire know-how in the integration of the topside module with the vessel*” (topside modules, comprise regasification units, utility modules and offloading station).¹⁴⁸ On the other hand, two shipbuilders stated during the market investigation that it is hard for a shipbuilder who has built only conventional LNGCs in the past to start building FSRUs. [...].¹⁴⁹ [...] also stated that special knowledge is required for the installation of the regasification unit on board, and the confirmation of its workability, which is hard to acquire without expertise.¹⁵⁰
- (148) Second, the competitive landscape is not substantially different in FSRUs compared to conventional LNGCs, especially in the LLNGCs and large FSRUs market, as the major manufacturers of large conventional LNGCs (the Parties, Samsung and CSSC) have received orders for large FSRUs.¹⁵¹
- (149) In conclusion, the Commission considers that while there is no demand-side substitution between FSRUs and conventional LNGCs, there is a level of supply-side substitutability between FSRUs and conventional LNGCs that is sufficient to justify including them into the same product market.¹⁵²
- (B) Conventional LNGCs converted into FSRUs are not in the same product market as newbuild FSRUs
- (150) The Commission considers that, second-hand conventional LNGCs that have been converted into FSRUs (“converted LNGCs”) are not part of the market for newbuild LNGCs or part of the FSRUs segment.

¹⁴⁴ Replies to question 14.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁴⁵ Replies to question 13.4 of Questionnaire Q8 to Customers. [DOC ID: 3241]. See also Minutes of the conference call with [...] dated 18 February 2020, paragraph 4.[DOC ID: 2839].

¹⁴⁶ Replies to question 59 of Questionnaire Q10 to Competitors.[DOC ID: 3243].

¹⁴⁷ Replies to question 59 of Questionnaire Q10 to Competitors.[DOC ID: 3243].

¹⁴⁸ Replies to question 59 of Questionnaire Q10 to Competitors.[DOC ID: 3243].

¹⁴⁹ Replies to question 59 of Questionnaire Q10 to Competitors.[DOC ID: 3243].

¹⁵⁰ Replies to question 59 of Questionnaire Q10 to Competitors.[DOC ID: 3243].

¹⁵¹ Shipbuilders established in Japan, including [...] have not received any orders for an FSRU ever.

¹⁵² By contrast, to FSRUs, offshore oil and gas installations are not part of LNGCs. In previous decisions, the Commission defined a distinct market for offshore oil and gas installations (see case M.731 – Kvaerner/Trafalgar (1996) and the Notifying Parties agrees with the Commission’s approach (see Form CO, paragraph 187).

- (151) While converting an existing LNGC into an FSRU may constitute an alternative to ordering a newbuild FSRU,¹⁵³ the customer’s decision to convert a conventional LNGC into an FSRU instead of ordering a newbuild FSRU depends on several specific factors. In that respect, a majority of customers considering that converting an existing conventional LNGC is an alternative to newbuild FSRUs stated that such a decision would depend on the specific characteristics of the project, the price and the lead time.¹⁵⁴
- (152) In particular, a customer and a company active in conversions stated that conversions would be an alternative to newbuild FSRUs only if the project’s schedule is tight.¹⁵⁵ The market investigation indicated that it takes longer for a shipbuilder to build a new FSRU than it takes to convert an existing conventional LNGC into an FSRU. [...].¹⁵⁶ Another customer stated that “*conversion may be necessary when the project schedule is tight: conversion takes around 18 months vs 30 months for new build FSRU.*”¹⁵⁷ Such timing is also confirmed by [...].¹⁵⁸ The Notifying Party also considers that a new-built FSRU usually takes [...] months to build and a converted FSRU usually takes [...] months to convert.¹⁵⁹
- (153) Furthermore, converting a conventional LNGC may not always constitute a cheaper alternative than ordering a newbuild FSRU. According to a customer that considered converting a LLNGC into a large FSRU, the conversion was not a viable option¹⁶⁰ because the “*savings from using an existing ship were outweighed by the additional cost of the modifications (e.g. additional generators of electrical power).*”¹⁶¹
- (154) The Commission notes that, as explained in **Section 8.3.5.2 (C)**, conversions of conventional LNGCs into FSRUs are rare compared to the number of newbuild FSRUs. According to the Notifying Party in the past 15 years shipbuilders have converted only 13 conventional LNGCs into FSRUs¹⁶² while from 2009 to 2021 (up to September 2021) there were 30 orders of newbuild FSRUs, of which 28 orders for newbuild large FSRUs.¹⁶³ As confirmed by the Notifying Party,¹⁶⁴ there are no examples of ordered or delivered conventional LLNGC in the 2009-2021 (up to 30 September 2021) period that were converted in large FSRUs with the exception of a conventional LLNGC built in 2009 and converted by [...].¹⁶⁵ [...] was in the process,

¹⁵³ Replies to question 18 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁵⁴ Replies to questions 18 and 18.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁵⁵ Minutes of the conference call with [...] dated 6 February 2020, paragraph 6 [DOC ID: 2782] Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 5 [DOC ID: 2780].

¹⁵⁶ Minutes of the conference call with [...] dated 6 February 2020, paragraph 12. [DOC ID: 1730].

¹⁵⁷ Minutes of the conference call with [...] dated 6 February 2020, paragraph 6. [DOC ID: 2782].

¹⁵⁸ Minutes of the conference call with [...] dated 7 February 2020, paragraph 7. [DOC ID: 2357].

¹⁵⁹ The Notifying Party’s FSRU submission, 17 April 2020, paragraph 11.

¹⁶⁰ Replies to question 18.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁶¹ Minutes of the conference call with [...] dated 5 March 2020, paragraph 8. [DOC ID: 2672].

¹⁶² The Notifying Party’s response to question 6, RFI 67.

¹⁶³ The Notifying Party’s reply to RFI 67, Annex Q13.

¹⁶⁴ The Notifying Party’s reply to questions 2 and 5 of RFI 37; the Notifying Party’s reply to question 1 of RFI 36, Annex Q1- Updated New and second-hand LNG sales, 2014-2019 (follow up). See also reply to question 32 of RFI 67, Annex Q32.1 and reply to question 1 of the clarification request by the case team on question 32 of RFI 67, Annex Q32.

¹⁶⁵ The Notifying Party’s reply to question 5 of RFI 37; the Notifying Party’s reply to question 6 of follow up to RFI 37; the Notifying Party’s reply to question 3 of second follow up to RFI 37. See also reply to question 32 of RFI 67, Annex Q32.1 and reply to question 1 of the clarification request by the case team on question 32 of RFI 67, Annex Q32.

at the time of the SO, of converting two Japanese vessels built more than 10 years ago into FSRUs.¹⁶⁶

- (155) There are limitations on the type of conventional LNGCs that can be converted. Some types of conventional LNGCs can be more easily converted into FSRUs: customers mentioned diesel electric, steam conventional LNGCs (both belonging to previous generation LNGCs) and older MOSS types.¹⁶⁷
- (156) Based on the information provided by the Notifying Party, different shipyards deal with conversions as opposed to newbuild FSRUs. Of the 12 shipyards active in FSRUs, only CSSC (Hudong Zhonghua) is active both in the construction of FSRU and conversion of LNGCs to FSRUs.¹⁶⁸¹⁶⁹
- (157) Therefore, the Commission considers that conventional LNGCs that have been converted into FSRUs (“converted LNGCs”) are not part of the market for newbuild LNGCs nor, in particular, part of the segment of FSRUs.

7.2.3.4. Distinction between different LNGC sizes

- (158) LNGCs can be segmented by size, i.e. into <40,000m³ LNGCs (“small LNGCs”) and equal to or above 145 000m³ (large LNGCs “LLNGCs”). With regard to LNGCs in the mid-range of 40 000m³-145 000m³, according to the data submitted by the Notifying Party, only five LNGCs of this size range were ordered in 2017-2021, all conventional LNGCs ordered from two Chinese shipbuilders, [...].¹⁷⁰ [...].¹⁷¹ [...].¹⁷²
- (159) There were indications from the market investigation that this size segmentation would apply to all LNGCs, that is not only conventional LNGCs, but also to the segment of FSRUs.¹⁷³ This was also supported by the data submitted by the Notifying Party.¹⁷⁴
- (160) The Commission considers that small LNGCs and LLNGCs belong to two distinct product markets for the following reasons.

¹⁶⁶ Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 4. [DOC ID: 2780] The Commission notes that, regardless of whether these two old Japanese vessels have been now converted or not, the Commission’s assessment on the fact that conventional LNGCs converted into FSRUs are not in the same product market as newbuild FSRUs would not change.

¹⁶⁷ Replies to questions 19 of Questionnaire Q8 to Customers. [DOC ID: 3241]. See also Minutes of the conference call with [...] dated 7 February 2020, paragraph 8 [DOC ID: 2357] Minutes of the conference call with [...] dated 6 February 2020, paragraph 6 [DOC ID: 2782] Minutes of the conference call with [...] dated 5 March 2020, paragraph 8 [DOC ID: 2672] Minutes of the conference call with [...] dated 6 February 2020, paragraph 12.[DOC ID: 1730].

¹⁶⁸ Shipbuilders that have built or are building FSRUs are SHI, HHI or DSME, CSSC (Jiangnan shipyard), and Wison Nantong while the shipyards active in conversion of LNGCs to FSRUs are Keppel, Sembcorp, Jurong, Drydocks World Dubai, COSCO HI (Shanghai) and Qidong Fengshun Ship Heavy Industrial. The Notifying Party’s response question 6 of RFI 67.

¹⁶⁹ See **Section 8.3.4.2** and **Section 8.3.8.3 (B) and (C)** on why CSSC does not exert a sufficient competitive constraint on the Parties and cannot be considered a recent entrant. Moreover, although its entry in the large FSRU segment cannot be excluded, such entry would not be likely, timely and sufficient.

¹⁷⁰ The Notifying Party’s reply to RFI 67, Annex Q13.

¹⁷¹ [...]’s reply to question 1 of Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107].

¹⁷² The Notifying Party’s reply to RFI 67, Annex Q13.

¹⁷³ Replies to questions 29.1, 30.1, 31.1 and 32.1 of Questionnaire Q5 to Competitors.[DOC ID: 3238].

¹⁷⁴ Form CO, Annex CS 6.38.

- (A) Lack of demand side substitution between LNGCs of different sizes
- (161) The market investigation results indicated that there is no demand-side substitution between small LNGCs and LLNGCs. The use of different sizes appears to serve different needs and depends on, for example, LNG terminal compatibility or specific routes. In this context, a customer stated: “*we do not use LNGCs below 40,000m³ cbm. They are only suitable for specialised trades*”.¹⁷⁵ Another customer explained that small LNGCs are used for “*domestic shuttle services [and] short distances*”.¹⁷⁶ Another customer stated that small LNGCs are used as “*bunkering vessels, small scale LNG plants services*”.¹⁷⁷
- (162) This seems to explain why customers do not appear to be that flexible regarding the size of the LNGC. Moreover, the market investigation results indicated that the standard size of LNGCs is changing and is becoming larger and larger by time. For example, a customer stated “[...] *10 years ago the standard size was 145,000cbm, today 174,000cbm, next generation can be 180,000+cbm*”.¹⁷⁸
- (163) A majority of customers that expressed an opinion confirmed that small conventional LNGCs are either used for different purposes (such as bunkering or short distance LNG cargo) or have a different type of cargo tank containment system technology (as confirmed by the data submitted by the Notifying Party),¹⁷⁹ or tend to be slower.¹⁸⁰ For example, one customer stated that “*long distance trade (i.e. Middle east to Far East or US to Far East) is not suitable for small LNG carriers*”.¹⁸¹ The same customer clarifies that it uses small conventional LNGCs for “*domestic shuttle services. Trade between South East Asia and Far East Asia. (short distance)*”.¹⁸²
- (164) Some customers indicate that there are terminals or ports that cannot or are less likely to accept small conventional LNGCs.¹⁸³ For example, one customer stated that “[...] *there are lots of LNG terminal who cannot accept small conventional LNG carriers due to mismatch of mooring arrange[ment] and location of manifold, etc.*”¹⁸⁴ Another customer stated that “[m]ost LNG import or export terminals are designed to accommodate conventional sized large LNG carriers (around 138-180,000m³). The jetty and mooring infrastructure is sized for this range of vessels and not all of the small scale LNG vessels can berth without extensive modification. This may not always be an economic proposal”.¹⁸⁵ With respect to conventional LLNGCs, a majority of customers that expressed an opinion indicated that there are terminals, ports or channels that cannot accept or are less likely to accept conventional LLNGCs due to, for example, capacity or tank storage, physical characteristics of the port.¹⁸⁶
- (165) A majority of customers that expressed an opinion indicated that there would not be situations in which they would use two small conventional LNGCs instead of one

¹⁷⁵ Replies to question 8.1 of Questionnaire Q3 to Customers.[DOC ID: 3236].

¹⁷⁶ Replies to question 8.1 of Questionnaire Q3 to Customers.[DOC ID: 3236].

¹⁷⁷ Replies to question 8.1 of Questionnaire Q3 to Customers.[DOC ID: 3236].

¹⁷⁸ Replies to question 9 of Questionnaire Q3 to Customers.[DOC ID: 3236].

¹⁷⁹ The Notifying Party’s reply to RFI 21.

¹⁸⁰ Replies to questions 3.1, 3.2 and 6 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸¹ Replies to question 4.3 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸² Replies to question 4.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸³ Replies to question 5 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸⁴ Replies to question 5 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸⁵ Replies to question 5 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸⁶ Replies to question 7, in particular 7.3 and 7.4 of Questionnaire Q8 to Customers.[DOC ID: 3241].

conventional LLNGC¹⁸⁷ and that all innovations in terms of LNG technology are not automatically used for both conventional LLNGCs and small conventional LNGCs.¹⁸⁸ As a consequence, the difference between, on the one hand, Type C and, on the other hand, membrane and MOSS cargo tank containment system technologies seems to have an impact on the use of the vessel. For example, one customer stated that “[...] *small conventional LNG carriers compared to the large conventional LNG carriers have different filling limits and strength when it comes to cargo tanks*”.¹⁸⁹ Another customer stated that “[n]ormally LNG carrier smaller than 30K CMB choose Type C as its cargo containment system because of competitive ship price. As Type C can hold LNG more than membrane/M[OSS] without any management of boil off gas, Type C is more convenient in terms of cargo control. But Type C is not suitable to transport large size of LNG”.¹⁹⁰ Another customer indicated that “*different boil off rates, different cost of tanks and of larger ships membrane and [MOSS] only possible due to size and weight [l]imitations*”.¹⁹¹

- (166) The vast majority of customers that buy small conventional LNGCs do not buy conventional LLNGCs. According to the data submitted by the Notifying Party, in the years 2016-2021, there were only four known customers that ordered both LLNGCs and small LNGCs out of a total of 48 known customers of LNGCs (16 customers ordered only small LNGCs and 28 customers ordered only LLNGCs).¹⁹² Those four customers represented only 12.5% of the total of 32 customers for LLNGCs.
- (167) As to the Notifying Party’s argument that there is a chain of substitution between all the different sizes of conventional LNGCs, the Commission recalls that there has been and there is very limited demand for LNGCs in the sizes between 40 000m³ and 144 999m³. According to the data submitted by the Notifying Party, only five such vessels were ordered between 2016 to 2021; the size of the largest was 79 960m³. No LNGCs in the size range between 80 000m³ and 170 000m³ were ordered in 2016-2021.¹⁹³ Consequently, a chain of substitution between the smallest and the largest conventional LNGCs is unlikely. It is thereby unlikely that vessels of this size range (40 000m³ and 144 999m³) constrain the prices of both small conventional LNGCs and conventional LLNGCs.
- (168) As to the segment of FSRUs, on the demand-side, a majority of customers distinguishes between small and large FSRUs and considers that the size segmentations applicable to conventional LNGCs also apply to FSRUs.¹⁹⁴
- (169) Customers ordering small FSRUs do not order large FSRUs and vice versa. According to the data submitted by the Notifying Party, in the years 2016-2021, eight customers ordered large FSRUs and two customers ordered small FSRUs. No customer ordered both small and large FSRUs.¹⁹⁵

¹⁸⁷ Replies to question 8 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸⁸ Replies to question 10 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁸⁹ Replies to question 11.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁹⁰ Replies to question 11.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁹¹ Replies to question 11.1 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁹² The Notifying Party’s reply to RFI 67, Annex Q7.

¹⁹³ The Notifying Party’s reply to RFI 67, Annex Q16.

¹⁹⁴ Replies to question 23 of Questionnaire Q8 to Customers.[DOC ID: 3241].

¹⁹⁵ The Notifying Party’s reply to RFI 67, Annex Q7.

- (B) Lack of supply side substitution between LNGCs of different sizes
- (170) From the supply side perspective, a segmentation by size appears from the significant differences in terms of required capabilities and competitive landscape between suppliers of small conventional LNGCs and conventional LLNGCs. This is evident from the following factors.
- (171) First, the manufacturing capabilities and technology know-how of shipbuilders seem to differ according to the size range of LNGCs. Indeed, for LLNGCs larger facilities are required while the overall building process is more complex, in particular due to the specific LNG cargo tank technology. More specifically on the LNG cargo tank technology, according to the data submitted by the Notifying Party, 83.3% of the small LNGCs delivered in the 2016-2021 period use non-membrane containment technology and 93% of these vessels use a particular type of non-membrane containment system technology, which is typical of small LNGCs, called Type C.¹⁹⁶ By contrast, 87.4% of the LLNGCs delivered in the same period of time use membrane containment system technology (either MARK III or NO 96 type).¹⁹⁷ All LLNGCs ordered since 2015 include a membrane tank.¹⁹⁸ The importance of the type of cargo tank technology is confirmed by the fact that a majority of customers indicate that they specify the type of LNG cargo tank technology when placing an order.¹⁹⁹
- (172) Second, the argument of the Notifying Party that there would be no special expertise, know-how or technology in relation to building a particular size of LNGC is not supported by the results of the Phase I market investigation. Shipbuilders indicated that switching from the building of small conventional LNGCs to conventional LLNGCs is not easy. For example, a shipbuilder stated that “[...] *the shifting require know-how and facilities in every aspects of design, construction and testing*”.²⁰⁰ A shipbuilder indicated that “*usually the delivery requirement of LNG carriers are stringent and the larger ships requiring more resources will need more careful planning and study and preparation is needed to become competitive.*”²⁰¹ Another shipbuilder stated that “*LNG carriers below 40,000m3 could be constructed by the combination of Type C tanks in terms of cargo tank, but to be larger than that especially more than 145,000m3 cargo tanks have to be designed as MOSS tank or membrane tank and have to be integrated as part of ship which result in complexity of building process at site*”.²⁰² A shipbuilder stated that “[...] *it is very difficult to start building large LNG carriers even with experience of small scale ships of Type C*”.²⁰³
- (173) Amongst the two shipbuilders that expressed a meaningful opinion in the Phase II market investigation, one shipbuilder active in both small conventional LNGCs and conventional LLNGCs stated that for a shipbuilder active in small conventional LNGCs to be able to start building conventional LLNGCs big docks and quays

¹⁹⁶ The Notifying Party’s reply to RFI 67, Annex Q22.

¹⁹⁷ The Notifying Party’s reply to RFI 67, Annex Q22.

¹⁹⁸ See **Section 8.3.1** and the Notifying Party’s reply to question 16 of RFI 67, Annex Q16, where it is shown that no Japanese shipbuilder received any LLNGC orders since 2016.

¹⁹⁹ Replies to question 11.2 of Questionnaire Q8 to Customers.[DOC ID: 3241]

²⁰⁰ Replies to question 30 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

²⁰¹ Replies to question 30 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

²⁰² Replies to question 30 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

²⁰³ Replies to question 32 of Questionnaire Q5 to Competitors.[DOC ID: 3238]

availability together with scaffolding for the containment system are needed.²⁰⁴ The other shipbuilder, active only in small conventional LNGCs stated that for a shipbuilder active only in small conventional LNGCs it would be possible to start manufacturing conventional LLNGCs. However, that shipbuilder clarified, when interviewed by the Commission that it “[...] has a GTT licence, which it obtained in 2018. To obtain such licence it took some time [...] to train technical staff and construction of a life size mock up cargo tank required for certification by GTT.”²⁰⁵

- (174) Although it “[...] considers that it has the right facilities (e.g. dry-docks and quays) the right equipment to build large LNG carriers and an advantage given its experience in [...] (it has knowledge of the value chain, [...] it has no track record in the manufacturing of large LNG carriers or large FSRUs. Therefore, it would be difficult for [it] to be selected by a customer for orders of large LNG carriers [...] immediately.”²⁰⁶ It also clarified that it “[...] has currently no immediate plans to enter such markets in the next few years.”²⁰⁷
- (175) Third, a majority of shipbuilders that expressed a meaningful opinion indicated that there are limitations or constraints in the access to necessary inputs for the manufacturing of conventional LLNGCs, which would limit shipbuilders’ ability to manufacture such vessels.²⁰⁸ More specifically, such limitations or constraints consist, for example, in skilled engineers, designers and workers together with technology investments.²⁰⁹ Shipbuilders mentioned that price, experience and customers’ conservatism represent obstacles for entering the market for conventional LLNGCs.²¹⁰ As explained in **Section 8.3.7**, the Commission considers that the Notifying Party claim in its Response to the Second Letter of Facts²¹¹ pursuant to which, as a consequence of the fact that the Parties [...] is immaterial. Indeed, as explained in this Section and in **Section 8.3.8**, LLNGC shipbuilding requires shipbuilders to have a set of specific capabilities including skilled workers and engineers, which, as explained in **Section 8.3.8** are, in any event, scarce.
- (176) Fourth, according to the information supplied by the Notifying Party²¹², there is a clearly different competitive landscape for small conventional LNGCs and conventional LLNGCs, in the sense that both the number of the identity of shipbuilders are different, in terms of orders received in the years 2017-2021. In those years, 15 shipbuilders received orders for conventional LNGCs, out of which 10 received orders only for small conventional LNGCs,²¹³ two received orders only

²⁰⁴ Replies to question 51 of Questionnaire Q10 to Competitors. [DOC ID: 3243]. The Commission considers, for the purpose of this decision, that market respondents provided a “meaningful opinion” or a “meaningful reply/response” or a “meaningful indication” if, for example, market respondents provided an answer that is sufficiently clear, relevant and responsive to the question asked.

²⁰⁵ Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 6. [DOC ID: 2780]

²⁰⁶ Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 6. [DOC ID: 2780]

²⁰⁷ Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 6. [DOC ID: 2780]

²⁰⁸ Replies to question 57 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²⁰⁹ Replies to question 57.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²¹⁰ Replies to question 58 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²¹¹ Response to the Second Letter of Facts, paragraph 178.

²¹² The Notifying Party’s reply to RFI 67, annex Q13.

²¹³ Those were: [...].

for conventional LLNGCs,²¹⁴ and only three shipbuilders received orders for both small conventional LNGCs and conventional LLNGCs.²¹⁵

(177) As to the segment of FSRUs, such a size segmentation appears from the very different competitive landscape existing between small and large FSRUs. According to the data submitted by the Notifying Party, seven shipbuilders have received orders for FSRUs between 2011 and 2021 out of which only two, [...] and [...],²¹⁶ received orders for both large and small FSRUs. [...] and [...] built only small FSRUs while [...] and [...] were active only in large FSRUs.²¹⁷

(C) Conclusions

(178) In view of the very limited demand-side substitutability and limited supply-side substitutability between small LNGCs (including small FSRUs) and LLNGCs (including large FSRUs), small LNGCs (less than 40,000m³) should not be considered part of the same product market as LLNGCs (equal to or above 145 000m³). The Parties' activities only overlap in the market for LLNGCs, (including in the segment of large FSRUs), which is the market which will be assessed in this Decision.

7.2.4. *Conclusions on product market definition: LLNGCs as a separate market*

(179) For the reasons stated above, the Commission finds that there is a separate product market for newbuild LLNGCs (that is to say LNGCs of 145 000m³ and above) including newbuild large FSRUs, of 145 000m³ and above, that is to say LLNGCs.

7.3. **Geographic market definition**

7.3.1. *Notifying Party's arguments*

(180) The Notifying Party argues that the market, irrespective of the vessel type, is worldwide.

7.3.2. *Previous Commission decisions*

(181) In previous decisions, the Commission considered that the market for commercial shipbuilding is worldwide in scope.²¹⁸

7.3.3. *The Commission's assessment*

(182) The market investigation carried out in the present case supports the conclusion that the market for the construction of LLNGCs is worldwide in scope.²¹⁹

(183) Generally, LLNGCs customers are based in the European Union and in the European Economic Area, Asia, Africa, and North America, whereas shipyards building

²¹⁴ Those were: [...].

²¹⁵ Those were: [...].

²¹⁶ As explained in **Section 8.3.8**, the Commission does not consider that the 2021 order received by [...] from its in-house customer is a large FSRU. Likewise, Clarksons' data (Annex Q38 to the Notifying Party's reply to RFI 67) reveal that neither [...] nor [...] received any orders for any small FSRUs ([...] only received one order for one small off-shore facility classified by Clarksons as FPSO FSRU).

²¹⁷ The Notifying Party's reply to RFI 67, Annex Q13. Clarksons' data (Annex Q38 to the Notifying Party's reply to RFI 67) reveal that neither [...] nor [...] have received any orders for any small FSRUs but that each has received one order for a small off-shore facility classified by Clarksons as FPSO FSRU.

²¹⁸ M.4956 – STX/Aker Yards (2008), paragraph 36; Case M.9936 -Imabari / JFE / IHI / JMU (2020), paragraphs 87-89.

²¹⁹ Minutes of the conference call with [...] dated 28 June 2019, paragraph 29. [DOC ID: 190] Minutes of the conference call with [...] dated 20 June 2019, paragraph 22. [DOC ID: 172]

LLNGCs are located in South Korea, China and, historically, Japan.²²⁰ According to the Notifying Party, when placing an order for a vessel, major international shipping owners do not consider which region or country a shipbuilder belongs to. According to a customer, location does not affect the company's decision with which shipbuilder to place orders, given that “[t]here are no alternatives besides the Asian shipbuilders”.²²¹

7.4. Conclusion on market definition

- (184) In light of the elements referred to above, the Commission concludes that, for the purpose of this Decision, the relevant product market encompasses newbuild LLNGCs including large FSRUs and that such market is worldwide in scope. Hereinafter in this decision the term “LLNGCs” will refer to newbuild LLNGCs including both conventional LLNGCs and large FSRUs.

8. COMPETITIVE ASSESSMENT

8.1. Framework for the competitive assessment

- (185) Pursuant to Article 2(2) and 2(3) of the Merger Regulation, the Commission must assess whether or not a proposed concentration would significantly impede effective competition in the internal market or in a substantial part of it, in particular as a result of the creation or strengthening of a dominant position.
- (186) In this respect, a concentration may entail horizontal and/or non-horizontal effects. Horizontal effects derive from a concentration where the undertakings concerned are active in the same relevant market(s). Non-horizontal effects are those deriving from a concentration where the undertakings concerned are active in different relevant markets.
- (187) As regards the assessment of horizontal overlaps, the Commission guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings²²² (the “Horizontal Merger Guidelines”) distinguish between two main ways in which mergers between actual or potential competitors on the same relevant market may significantly impede effective competition, namely non-coordinated and coordinated effects.
- (188) According to the Horizontal Merger Guidelines, non-coordinated effects result from the elimination of important competitive constraints on one or more firms, which consequently would have increased market power, without resorting to coordinated behaviour.²²³ In this case, the most direct effect of the concentration will be the loss of competition between the merging firms, i.e., the elimination of the competitive constraints that they previously exerted upon each other, while non-merging firms in the same market can also benefit from the reduction of competitive pressure that results from the merger.²²⁴
- (189) The creation of a dominant position by a single firm is one form of significant impediment to effective competition arising from non-coordinated effects.²²⁵ Thus, a concentration giving rise to non-coordinated effects could significantly impede

²²⁰ The Notifying Party's reply to RFI 67, Annex Q16.

²²¹ Minutes of the conference call with [...] dated 2 July 2019, paragraph 18. [DOC ID: 1328].

²²² Horizontal Merger Guidelines, pages 5-18.

²²³ Horizontal Merger Guidelines, paragraph 22.

²²⁴ Horizontal Merger Guidelines, paragraph 24.

²²⁵ Horizontal Merger Guidelines, paragraph 25.

effective competition by creating the dominant position of a single firm, one which, typically, would have an appreciably larger market share than the next competitor post-merger.²²⁶

- (190) According to well-established case law, very large market shares - 50% or more - may in themselves be evidence of the existence of a dominant market position.²²⁷ As a result, although market shares and additions of market shares only provide first indications of market power and increases in market power, they are normally important factors in the assessment.²²⁸ Likewise, the overall concentration level in a market may also provide useful information about the competitive situation likely to prevail post-merger.²²⁹
- (191) Other relevant parameters of competition to consider in the assessment of non-coordinated effects and, in particular, of the creation of a dominant position include the strength and number of competitors, the presence of capacity constraints or the extent to which the products of the merging parties are close substitutes even though, according to the Horizontal Merger Guidelines, these elements are particularly relevant when the combined market share of the merged entity will remain below 50%.²³⁰ When products are differentiated and merging firms are close competitors, they are more likely to raise prices post-Transaction due to the high degree of substitutability between their products.²³¹ Likewise customers facing limited alternative suppliers post-merger are particularly vulnerable to price increases.²³²
- (192) The likelihood that a concentration would result in a significant impediment to effective competition in the relevant markets also depends on the absence of countervailing factors,²³³ such as countervailing buyer power and entry.
- (193) The Commission considers, when relevant, to what extent customers will be in a position to counter the increase in market power that a merger would otherwise be likely to create.²³⁴ In that context, countervailing buyer power exists where a buyer has a particular bargaining strength in commercial negotiations with suppliers due to its size, commercial significance to the seller and its ability to switch to alternative suppliers.²³⁵ For buyer power to be a countervailing factor it must survive the merger in a sense that it must remain effective under the post-merger market setup. This is because some mergers may reduce the degree of buyer power by removing a credible alternative, thereby rendering it ineffective.²³⁶
- (194) Entry analysis constitutes another important element of the overall competitive assessment of horizontal mergers. For entry to be considered a sufficient competitive constraint on the merging parties, it must be shown to be likely, timely and sufficient to deter or defeat any potential anti-competitive effects of the merger.²³⁷ For entry to be likely, it must be sufficiently profitable, whereas high risk and costs of failed

²²⁶ Horizontal Merger Guidelines, paragraph 25.

²²⁷ Horizontal Merger Guidelines, paragraph 17 and references provided there.

²²⁸ *Idem*.

²²⁹ Horizontal Merger Guidelines, paragraph 16.

²³⁰ Horizontal Merger Guidelines, paragraph 17.

²³¹ Horizontal Merger Guidelines, paragraph 28.

²³² Horizontal Merger Guidelines, paragraph 31.

²³³ Horizontal Merger Guidelines, paragraph 11, Sections V and VI.

²³⁴ Horizontal Merger Guidelines, paragraphs 64-65.

²³⁵ Horizontal Merger Guidelines, paragraph 64.

²³⁶ Horizontal Merger Guidelines, paragraph 67.

²³⁷ Horizontal Merger Guidelines, paragraph 68.

entry may make entry less likely.²³⁸ Indeed, potential entrants may encounter barriers to entry which determine entry risks and costs and thus have an impact on the profitability of entry.²³⁹ Barriers to entry can take various forms; for example, it may be difficult to enter a particular industry because experience or reputation, as well as closeness of relationships between suppliers and customers, is necessary to compete effectively.²⁴⁰ When entry barriers are high, price increases by the merging firms would not be significantly constrained by entry.²⁴¹

- (195) Overall, non-coordinated effects can take various forms, including negative effects on prices, output, choice or quality or innovation,²⁴² whereas the expression “increased prices” is often used as shorthand for these various ways in which a merger may result in competitive harm.²⁴³ These effects arise from the increased market power associated with the removal of competitive constraints resulting from the concentration. Generally, the larger the market share of the merged entity, the more likely it is to possess market power and the larger the addition of market share, the more likely it is that a merger will lead to a significant increase in market power and that merging parties will find it profitable to increase prices post-merger.²⁴⁴ Likewise, significant price increases are more likely in case of high degree of substitutability between the merging firms’ products,²⁴⁵ when there are few alternative suppliers available to customers,²⁴⁶ and when other suppliers do not have the ability or incentives to increase their supply substantially in case of price increases.²⁴⁷
- (196) In the present case, the Commission concludes that the Transaction would significantly impede effective competition as a result of the creation of a dominant position due to horizontal non-coordinated effects. This conclusion is based on the following elements:
- (a) the combined market shares of the Parties are consistently and historically high (above 60%, thus entailing prima facie evidence of the creation of a dominant position) and so is the market share increment brought about by the Transaction while the overall level of concentration of the LLNGC market is very significant (for a more detailed analysis see **Section 8.3.1**);
 - (b) the Parties are close competitors to each other and the Transaction leads to the combination of two out of three (with SHI) very close competitors, including in terms of innovation capabilities (for a more detailed analysis see **Section 8.3.2**);
 - (c) the Parties are both (especially DSME) important innovators (for a more detailed analysis see **Section 8.3.3**);
 - (d) other shipbuilders will not sufficiently constrain the Parties. In particular, neither SHI nor CSSC will have the ability and the incentive to defeat a price

²³⁸ Horizontal Merger Guidelines, paragraph 69.

²³⁹ Horizontal Merger Guidelines, paragraph 70.

²⁴⁰ Horizontal Merger Guidelines, paragraphs 69-71.

²⁴¹ Horizontal Merger Guidelines, paragraph 70.

²⁴² Horizontal Merger Guidelines, paragraphs 8, 24.

²⁴³ Horizontal Merger Guidelines, paragraph 8.

²⁴⁴ Horizontal Merger Guidelines, paragraph 27.

²⁴⁵ Horizontal Merger Guidelines, paragraph 28.

²⁴⁶ Horizontal Merger Guidelines, paragraph 31.

²⁴⁷ Horizontal Merger Guidelines, paragraph 32.

increase by the Parties post-Transaction (for a more detailed analysis see **Section 8.3.4**);

- (e) second-hand LLNGCs do not exert a meaningful competitive constraint on the market for (newbuild) LLNGCs (for more details see **Section 8.3.5**)
 - (f) the current and future LLNGC market outlook is positive, in spite of the Covid-19 outbreak (for more details see **Section 8.3.6**);
 - (g) while capacity is only one among various factors relevant to the assessment of the dynamics of competition in the LLNGC market, the Parties account for a very large share of LLNGC capacity, whereas competitors will not have enough capacity to deter or counter likely anticompetitive effects by increasing their supplies (for a more detailed analysis see **Section 8.3.7**);
 - (h) barriers to entry and expansion are very high and may even increase post-Transaction. There has been no recent entry in the LLNGC market (on the contrary, a number of market exits) and no market entry is likely, timely and sufficient (for a more detailed analysis see **Section 8.3.8**);
 - (i) customers do not have the ability or the incentive to exert a sufficient degree of buyer power post-Transaction (for a more detailed analysis see **Section 8.3.9**);
 - (j) the Transaction is likely to result in price increases in the worldwide market for LLNGCs (for a more detailed analysis see **Section 9**).
- (197) Before assessing those elements, the Commission first examines the relevant counterfactual for the assessment of the Transaction. Indeed, in assessing the competitive effects of a merger, the Commission engages in a comparison of the competitive conditions that would result from the notified merger with the conditions that would have prevailed without the merger.²⁴⁸
- (198) The Commission notes that the Notifying Party claims that the Commission has not presented any coherent theory of dominance of the merged entity post-Transaction.²⁴⁹ The Notifying Party notes that in the SO, the Commission concluded that the Transaction gives rise to the creation of dominance and/or to the elimination of important competitive constraints that the Parties had exerted upon each other and a reduction of competitive pressure on the remaining competitors. According to the Notifying Party, these two theories of harm would be mutually exclusive. In this context, in the Response to the Second Letter of Facts, the Notifying Party argues that in the absence of any Supplementary Statement of Objections, it was impossible for the Parties to understand which theories of harm the Commission applies and which elements of those assessed by the Commission apply to which theory of harm. In that regard, however, the Notifying Party acknowledges²⁵⁰ that since the State of Play of 7 July 2020, the Commission has clarified that it would focus on the creation of dominance.
- (199) The Commission notes that there is no indication in the case law that the Commission is precluded from relying on more than one theory of harm in order to preliminarily find a significant impediment to effective competition. Moreover, as

²⁴⁸ Horizontal Merger Guidelines, paragraph 9.

²⁴⁹ See, for example, Response to the Response to the Second Letter of Facts, Section F.

²⁵⁰ See Response to the Second Letter of Facts, paragraph 34, where the Notifying party acknowledges that “[following the state-of-play meeting on 7 July 2020, the [Commission] indicated that it is now focussing exclusively on whether the [Transaction] confers a dominant position on the [merged entity] in the market for LLNGCs”.

recalled in **paragraphs (19) and (198)** above, the SO contained two theories of harm and the Commission later clarified that it only maintained one of them. In that regard, the Notifying Party has been afforded the opportunity to express its view on the objections that were maintained and on the arguments and facts that the Commission intended to rely on to establish that the Transaction would significantly impede effective competition. The relevant parts of the SO and of the First and Second Letter of Facts set out the Commission's case in a discernible manner, and the Parties have provided detailed submissions on the substantive issues raised, both orally and in writing. In the present decision, therefore, the Commission reaches conclusions which are based on objections on which the Notifying Party could and did exercise its rights of defense.

8.2. Relevant counterfactual - the competitive situation most likely to prevail absent the Transaction

8.2.1. Legal framework

(200) In assessing the competitive effects of a concentration, the Commission compares the competitive conditions that would result from the notified Transaction with the conditions that would have prevailed absent the Transaction. In most cases, the competitive conditions existing at the time of the Transaction constitute the relevant comparison for evaluating its effects. However, in some circumstances, the Commission may take into account future changes to the market to the extent that they can be reasonably predicted²⁵¹.

(201) The assessment by the Commission of the situation of DSME focusses on whether, absent the Transaction, DSME would remain an effective competitor in the LLNGC market and continue to exercise a competitive constraint. As a result, the Commission's assessment of DSME's "viability" in this context will focus on whether DSME is likely to remain in the market and continue to exercise a competitive constraint absent the Transaction based on its past, current and likely future situation thus including, e.g., support received from the Korean Development Bank.

8.2.2. Likely counterfactual in the context of the COVID-19 crisis

(202) At the outset, the Commission considers that for the purpose of the assessment of the Transaction, the relevant counterfactual is head-to-head competition between the Parties in the LLNGCs market. The Commission also considers that the evidence presented in this Section confirms its finding that, absent the Transaction, DSME would likely continue to exercise an effective competitive pressure in the market for LLNGCs.

(A) The Notifying Party's views

(203) In several instances in 2020 and again in 2021, the Notifying Party submitted to the Commission its views on the expected impact of the COVID-19 crisis on the shipbuilding industry and on the competitive effects of the Transaction.²⁵²

(204) First, the Notifying Party argued in essence that the COVID-19 crisis was expected to decrease demand for vessels in general and specifically for LLNGCs. Consequently, competition between shipbuilders would intensify and buyers' power

²⁵¹ Horizontal Merger Guidelines, paragraph 9.

²⁵² Notifying Party's submissions of 30 March 2020, 17 April 2020 and 29 May 2020, Annex E1 to the Response to the SO and Response to the First Letter of Facts.

would increase because shipbuilders would need to continue covering their substantial fixed costs for maintaining shipbuilding facilities and the necessary employee base.²⁵³

- (205) According to the Notifying Party, demand forecasts up until (at least) 2024 were adjusted downwards for all vessel types (and classes), with the impact of the current crisis on demand outlook being particularly visible in the next two or three years. Considering the nature of the shipbuilding industry, and notably the long lead time of a contract delivery covering several years, the impact of this decline in orders would be prolonged until the late 2020s.
- (206) Second, the Notifying Party submitted that in particular the market for (L)LNGCs was expected to be negatively impacted by weaker winter gas pricing as well as the drop in Chinese demand and imports in light of COVID-19 developments. Similarly, the oil price war, driving oil prices to significant lows, created the potential for delays of certain upstream LNG liquefaction projects, which may have further impacted LNG carrier demand.²⁵⁴
- (207) Third, in the Response to the First Letter of Facts, the Notifying Party argues that the Commission fails to recognise the impact of COVID-19 and the likelihood of delays and disruption to these LNG projects and as such the Commission describes an overly optimistic view of future demand.
- (B) Commission's assessment
- (208) The Commission's finding on a relevant counterfactual is based on the evidence submitted by the Parties and on other results of the investigation.
- (209) First, as regards the argument by the Notifying Party that demand will decrease as a consequence of COVID-19 crisis, the Commission noted at the time of the SO, that these forecasts also anticipated a relatively quick return of demand to the levels forecasted before the crisis by 2024 according to Clarksons Q1 2020 forecast and to an even higher level by 2023 according to MSI's Q1 2020 forecast.²⁵⁵
- (210) Furthermore, the industry analysts cited by the Notifying Party differed in their prediction of the impact of the crisis during the period 2020-2024. Clarksons predicted that annual demand for commercial vessels would decrease on average by 20% compared to earlier forecasts until returning in 2024 to the level of the pre-pandemic forecast. MSI expected that already in 2023 demand will return to the level of earlier forecasts, surpassing it in 2024. Overall MSI expected a decrease of only 13% in demand for the period 2020-2024. IHS expected a much more limited impact, lowering its earlier forecasts for 2020-2024 only by 2%.²⁵⁶ According to industry media, the Notifying Party itself acknowledged the limited ability to predict the impact of the COVID-19 crisis. The Notifying Party was cited saying on these forecasts at the end of April 2020 that *"better guidance on our orders will be*

²⁵³ The Notifying Party's submission of 29 April 2020 "Impact of COVID-19 on the Proposed Transaction."

²⁵⁴ The Notifying Party's submission of 29 April 2020 "Impact of COVID-19 on the Proposed Transaction", paragraph 2.13.

²⁵⁵ The Notifying Party's submission of 29 April 2020 "Impact of COVID-19 on the Proposed Transaction", paragraphs 2.7-2.9.

²⁵⁶ The Notifying Party's submission of 29 April 2020 "Impact of COVID-19 on the Proposed Transaction", paragraph 2.17.

available after the second quarter” and decreased its sales targets for 2020 by less than 1%.²⁵⁷

- (211) Second, as regards the argument of the Notifying Party that the (L)LNGC market will be adversely affected by a number of factors, the Commission notes that the forecasts provided by the Notifying Party diverged on this point. While Clarksons predicted, at the time of the SO, lower demand than previously expected for LNGCs at least until 2024, MSI expected that already by the end of 2020 demand would return to the level forecasted before the COVID-19 crisis and overall would be higher than previously projected for the period 2020-2024 thus noting a swifter recovery for the demand for LNGCs than for the overall commercial shipbuilding industry.
- (212) Third, as regards the demand in the LLNGC market and as further developed in the **Section 8.3.6** the Commission considers that the outlook for the demand in the LLNGCs market remains positive, in spite of the COVID-19 outbreak. The latest developments in terms of contracts or slot reservations support this view. In view of the number of orders placed in 2020, the COVID-19 crisis does not appear to have had a material negative impact on demand.²⁵⁸ In terms of most recent developments, both Clarksons and MSI have revised their forecasts upwards again in Q3/2021 for the 2021-2025 and 2022-2026 periods in comparison to their Q1/2020 forecasts.²⁵⁹ For the remainder, the market positive outlook and increasing demand in the LLNGC market is presented and analysed in more details in **Section 8.3.6**.
- (213) Finally, the Commission notes in respect of the impact of the COVID-19 crisis on DSME, that in the Response to the Second Letter of Facts, the Notifying Party rather argues that DSME [...],²⁶⁰ [...] ²⁶¹ This argument is addressed in **Section 8.2.3. (B) e**.

8.2.3. [...]

[This section sets out the Parties’ views and the Commission’s assessment as to whether the counterfactual demonstrates a less pro-competitive environment than post-Transaction]

[Paragraphs 214-354]

[...] 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289
290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319

257 “KSOE expects limited impact on order backlog amid COVID-19”, Hellenic Shipping News, 30 April 2020. [DOC ID: 3035]

258 Based on Clarkson Vessel Data submitted in response to RFI 67

259 Based on Clarkson and MSI forecasts submitted in response to RFI 67.

260 Response to the Second Letter of Facts, paragraph 307 to 317.

261 Response to the Second Letter of Facts, paragraph 306.

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Table 3 [...]

8.2.4. *Conclusion on the relevant counterfactual*

(355) In view of the above, the Commission considers basis that for the purpose of the assessment of the Transaction, the relevant counterfactual is head-to-head competition between the Parties in the LLNGCs market. The Commission also considers that the evidence presented in this Section confirms its finding that, absent the Transaction, DSME would likely continue to exercise an effective competitive pressure in the market for LLNGCs.

8.3. **Assessment of horizontal non-coordinated effects**

8.3.1. *The LLNGC market (including the large FSRU segment) is very concentrated and the Parties' enjoy consistently high and increasing market shares*

8.3.1.1. Introduction

(356) As set out in the Horizontal Merger Guidelines, market shares and concentration levels provide useful first indications of the market structure and of the competitive importance of both the merging parties and their competitors. The larger the market share, the more likely a firm is to possess market power. The larger the addition of market share (the increment), the more likely it is that a merger would lead to a significant increase in market power. The larger the increase in the sales base on which to enjoy higher margins after a price increase, the more likely it is that the merging firms would find such a price increase profitable despite the accompanying reduction in output. Although market shares and additions of market shares only provide first indications of market power and increases in market power, they are normally important factors in the assessment.³⁶² Moreover, according to well-established case law, very large market shares – 50% or more – may in themselves be evidence of the existence of a dominant market position.³⁶³

(357) The Notifying Party argues that the fact LLNGCs are differentiated products means that the Commission “*should place no reliance on market shares since, as it is well-known, they are uninformative in particularly differentiated markets*”³⁶⁴. The

³⁶² Horizontal Merger Guidelines, paragraph 27.

³⁶³ Horizontal Merger Guidelines, paragraph 17.

³⁶⁴ Response to the SO, Paragraph 39 and its Annex B.1. Dr. Padilla Expert Report Paragraph 3.6..

Commission does not agree with this claim. The principle that very large market shares may in themselves be evidence of a dominant market position is not limited to markets without differentiation. While further analysis - such as using win/loss analysis to estimate diversion ratios as conducted further below (see **Section 8.3.2**) can further refine or complement the indications deduced from the market share in a differentiated market – market shares nevertheless form the relevant basis for the competitive analysis also in markets with product differentiation.

(358) In this Section, the Commission sets out its assessment of the LLNGC market (including the segment for large FSRUs) structure, which it considers being very concentrated (and will be even more so post-Transaction), and of the Parties' combined market shares, which have been constantly above 50% over the past 10 years.³⁶⁵ For these reasons, the Commission considers that the Parties' high combined market shares constitute in themselves *prima facie* evidence of the creation of a dominant position.

8.3.1.2. Competitive landscape: overview of current and past players

(359) **Table 4** below provides a short description of the shipbuilders that have received orders for LLNGCs in the course of the past ten years. More details are provided in **Section 8.3.4** and **Section 8.3.8** below.

Table 4 Overview of current and past players

Shipbuilder Group	Description
HHI	HHI has two yards in which it builds LLNGCs: Hyundai Heavy Industries Co Ltd and Hyundai Samho Heavy Industries Co Ltd. [...].
DSME	DSME has only one yard in which it builds LLNGCs. [...].
SHI	SHI is a South Korean shipbuilder. It has only one yard in which it builds LLNGCs. [...].
CSSC	CSSC is the only Chinese shipbuilder capable of building LLNGCs now and in the foreseeable future. It has only one yard (Hudong) in which it builds LLNGCs. [...].
MHI	MHI is a Japanese shipbuilder. It used to build LLNGCs in its Koyagi yard, which it has decided to sell. [...].
KHI	KHI is a Japanese shipbuilder. It has only one yard (Sakaide) in which it can build LLNGCs. [...].
SHI-Zvezda	Zvezda is a one-yard Russian shipbuilder, which has never built nor delivered any LLNGCs. As explained in Section 8.3.6 (B) c) and Section 8.3.8.3 (C) xiii) , it entered in a joint construction scheme with SHI, on which it totally depends in terms of know-how and technology (up to the point that [...]), to be able to deliver LLNGCs to its domestic and captive customers. [...].
Imabari	Imabari is the only Japanese shipbuilder that has recently built membrane LLNGCs for a non-Japanese customer (delivered via a joint venture with MHI). It has two yards in which it built LLNGCs. [...].
JMU	JMU is a Japanese shipbuilder. It has only one yard in which it can build LLNGCs. [...].

³⁶⁵ Over the last several rolling five years periods, as shown above in this Section.

Shipbuilder Group	Description
STX (now renamed K-Shipbuilding)	STX is a South Korean shipbuilder. It has only one yard in which it used to build LLNGCs. [...].
Wison Offshore & Marine (“Wison”)	Wison is a Chinese shipbuilder. It has only one yard and has never built LLNGCs. As explained in more details in Section 8.3.8.3 (B) d) and Section 8.3.8.3 (C) xii) , [...], the Commission considers that this does not change its assessment, meaning that Wison is neither a recent nor a likely, timely and sufficient entrant.

8.3.1.3. Market structure: the LLNGC market (including large FSRUs) is very concentrated and the Parties’ combined market shares are high

- (360) At the outset, the Commission notes that it has assessed the likely impact Transaction on the market for LLNGCs, including conventional LLNGCs and large FSRUs. Indeed, as noted in **Section 7** above, the Commission considers that LLNGCs constitute a separate market from other types and sizes of cargo vessels and that large FSRUs represent a segment of the market for LLNGCs.
- (361) In accordance with the Commission’s Horizontal Merger Guidelines, market shares are used as the starting point of the competitive assessment. Contrary to what is argued by the Notifying Party, the fact that the Commission considers LLNGCs as differentiated products does not diminish the importance of market shares, especially given that the Parties’ combined market shares are high (above 60%) and in a market, like the worldwide market for LLNGCs, where the Parties are two market leaders and where there are only four shipbuilders capable of building LLNGCs, namely HHI, DSME, SHI and, to a lesser extent, CSSC. Market shares reflect both customers’ preferences based on their evaluation of the set of products offered by each supplier and the suppliers capacity to deliver them. Unless suppliers are capacity constrained suppliers with high market shares are therefore those that offer the combination of product-related and shipbuilder-related characteristics that customers tend to prefer.
- (362) In addition, the Commission considers that market shares over a five-year period provide a better overview of the competitive landscape in view of the relatively limited number of orders for new builds per year and the significant fluctuation in yearly market shares.³⁶⁶
- (363) The Commission finds that the LLNGC market (including large FSRUs) is very concentrated and the Parties’ combined market shares are high (above 50%) and constitute in themselves *prima facie* evidence of the creation of a dominant position for the following reasons.
- (364) **Table 5** and **Table 6** below show the market shares of the Parties and other shipbuilders in LLNGCs in both CGT and units (number of vessels ordered).

³⁶⁶ This was also the approach of the Commission in previous decisions, see M.4956 – *STX/Aker Yards* (2008), paragraph 40.

Table 5 Market shares of the Parties and other shipbuilders in the LLNGC market (Rolling 5 years shares in CGT)

Builder Group	2011-2015	2012-2016	2013-2017	2014-2018	2015-2019	2016-2020	2017-2021 ³⁶⁷
HHI	[20-30]% ³⁶⁸	[20-30]%	[10-20]%	[20-30]%	[30-40]%	[40-50]%	[40-50]%
DSME	[30-40]%	[30-40]%	[30-40]%	[30-40]%	[20-30]%	[20-30]%	[10-20]%
HHI + DSME	[50-60]%	[50-60]%	[50-60]%	[60-70]%	[60-70]%	[60-70]%	[60-70]%
SHI	[20-30]%	[10-20]%	[10-20]%	[10-20]%	[20-30]% ³⁶⁹	[20-30]% ³⁷⁰	[20-30]% ³⁷¹
MHI	[5-10]%	[5-10]%	[5-10]%	[5-10]%	[5-10]%		
CSSC	[5-10]%	[5-10]%	[5-10]%	[5-10]%	[5-10]%	[5-10]%	[0-5]% ³⁷²
KHI	[0-5]%	[5-10]%	[5-10]%	[0-5]%	[0-5]%		
Zvezda (“SHI-Zvezda”) ³⁷³					[0-5]%	[5-10]%%	[5-10]%
Imabari	[0-5]%	[0-5]%	[0-5]%				
JMU	[0-5]%	[0-5]%	[0-5]%	[0-5]%			
STX (now re-named K-Shipbuilding)	[0-5]%	[0-5]%					
Wison ³⁷⁴							[0-5]%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100%	100%

Source: Notifying Party's response to RFI 67, Annex Q13

³⁶⁷ Up to 30 September 2021.

³⁶⁸ The Commission considers that the 2011 order of a large FPSO FSRU by [...] is an offshore facility rather than a vessel or large FSRU. In any event, the Commission considers that that this does not change the Commission's assessment carried out in the SO, in the First Letter of Facts, in the Second Letter of Facts and in this Decision.

³⁶⁹ [...]. Should the SHI-Zvezda's [...] LLNGCs ordered by [...] from SHI-Zvezda in 2019 be allocated to SHI, SHI's market share would be [20-30]% in the 2015-2019 period.

³⁷⁰ [...]. Should the SHI-Zvezda's [...] LLNGCs ordered from SHI-Zvezda in 2019 and 2020 be allocated to SHI, SHI's market share would be [30-40]% in the 2016-2020 period.

³⁷¹ [...]. Should the SHI-Zvezda's [...] LLNGCs ordered from SHI-Zvezda in 2019 and 2020 be allocated to SHI, SHI's market share would be [30-40]% in the 2017-2021 (up to 30 September 2021) period.

³⁷² [...].

³⁷³ [...].

³⁷⁴ [...].

Table 6 Market shares of the Parties and other shipbuilders in the LLNGC market (Rolling 5 years shares in units)

Builder Group	2011-2015	2012-2016	2013-2017	2014-2018	2015-2019	2016-2020	2017-2021 ³⁷⁵
HHI	[20-30]% ³⁷⁶	[20-30]%	[10-20]%	[20-30]%	[30-40]%	[40-50]%	[40-50]%
DSME	[30-40]%	[30-40]%	[30-40]%	[30-40]%	[20-30]%	[20-30]%	[10-20]%
HHI + DSME	[50-60]%	[50-60]%	[50-60]%	[60-70]%	[60-70]%	[60-70]%	[60-70]%
SHI	[20-30]%	[10-20]%	[10-20]%	[10-20]%	[20-30]% ³⁷⁷	[20-30]% ³⁷⁸	[20-30]% ³⁷⁹
CSSC	[5-10]%	[5-10]%	[5-10]%	[5-10]%	[0-5]%	[5-10]%	[0-5]% ³⁸⁰
MHI	[5-10]%	[5-10]%	[5-10]%	[0-5]%	[0-5]%		
KHI	[0-5]%	[5-10]%	[5-10]%	[0-5]%	[0-5]%		
SHI-Zvezda ³⁸¹					[0-5]%	[5-10]%	[5-10]%
Imabari	[0-5]%	[0-5]%	[0-5]%				
JMU	[0-5]%	[0-5]%	[0-5]%	[0-5]%			
STX (now re-named K-Shipbuilding)	[0-5]%	[0-5]%					
Wison ³⁸²							[0-5]%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100%	100%

Source: Notifying Party's response to RFI 67, Annex Q13

(365) First, as shown in **Table 5** and **Table 6** above, the Commission considers that the Parties have large market shares. The Parties' combined market shares for LLNGCs including large FSRUs in the 2015-2019 period are [60-70]% in CGT (HHI: [30-40]%; DSME: [20-30]%) and [60-70]% in units (HHI: [30-40]%; DSME: [20-30]%).

³⁷⁵ Up to 30 September 2021.

³⁷⁶ The Commission considers that the 2011 order of a large FPSO FSRU by [...] is an offshore facility rather than a vessel or large FSRU. In any event, the Commission considers that that this does not change the Commission's assessment carried out in the SO, in the First Letter of Facts, in the Second Letter of Facts and in this Decision.

³⁷⁷ [...].

³⁷⁸ [...].

³⁷⁹ [...].

³⁸⁰ [...].

³⁸¹ [...].

³⁸² As explained in **Section 8.3.8.3 (B) d)** and **Section 8.3.8.3 (C) xii)**, the Commission considers that [...] received an in-house order for an offshore facility rather than a vessel or large FSRU. In any event, adding the [...] order to the market as advocated by the Notifying Party does not modify the Commission's assessment, in particular on Wison (see **Section 8.3.8.3 (B) d)** and **Section 8.3.8.3 (C) xii)**).

The Parties' combined market shares for 2016-2020 are slightly higher: [60-70]% in CGT (HHIH: [40-50]%; DSME: [20-30]%) and [60-70]% in units (HHIH: [40-50]%; DSME: [20-30]%). For 2017-2021 (up to 30 September 2021), the Parties' combined market shares are even slightly higher: [60-70]% in CGT (HHIH: [40-50]%; DSME [10-20]%) and [60-70]% in units (HHIH: [40-50]%; DSME: [10-20]%). In the other 5 year periods considered, the Parties' combined market shares were always higher than [50-60]% (2011-2015, 2012-2016, 2013-2017) or even [60-70]% (2014-2018) both in CGT and units.

- (366) Second, the Commission considers that **Table 5** and **Table 6** above also show an increase of the market shares of the Parties from [50-60]% in CGT and [50-60]% in units in the period 2011-2015 to [60-70]% in CGT and [60-70]% in units in the period 2016-2020 and to [60-70]% in CGT and [60-70]% in units in 2017-2021 (up to 30 September 2021).
- (367) Third, the Commission considers that the market share increment brought by the Transaction is significant. The Transaction combines two of the three largest players on the market. With a [40-50]% market share (in CGT; [40-50]% in units), HHI was the market leader in 2016-2020. This was also the case in the 2015-2019 period, when HHIH held [30-40]% market share (in CGT; [30-40]% in units). As to the other two largest players, DSME's market share has consistently been higher than SHI's in 2011-2015, 2012-2016, 2013-2017, 2014-2018. Even in 2015-2019 DSME's market share ([20-30]% in CGT; [20-30]% in units in 2015-2019) was higher in CGT and in units than the market share of SHI (with [20-30]% in CGT and [20-30]% in units) in 2015-2019. In the 2015-2019 period, the market share of the other shipbuilders was significantly lower: MHI had a market share of [5-10]% in CGT ([0-5]% in units) and CSSC a market share of [0-5]% in CGT and [0-5]% in units. KHI had less than [0-5]% market share: [0-5]% in CGT and [0-5]% in units. SHI-Zvezda, although with a market share of about [0-5]% in CGT and in units, is meant to serve its domestic and captive customer in addition to being totally dependent on SHI in terms of know how and technology. This is also the case for the 2016-2020 period: the Japanese shipbuilders exited the market, while CSSC had [5-10]% in CGT and [5-10]% in units. SHI-Zvezda, which had [5-10]% in CGT ([5-10]% in units) is meant to serve its domestic and captive customer(s) in addition to being totally dependent on SHI in terms of know how and technology (see **Section 8.3.6 (B) c** and **Section 8.3.8.3 (C) xiii**). This is also the case for the 2017-2021 (up to 30 September 2021) as the Japanese shipbuilders exited the market, while CSSC has about [0-5]% in CGT and units. SHI-Zvezda, which has [5-10]% in CGT and [5-10]% in units, is still meant to serve its domestic and captive customer in addition to being totally dependent on SHI in terms of know how and technology. With respect to [...], as explained in **Section 8.3.8.3 (B) d** and **Section 8.3.8.3 (C) xii**), the Commission considers that [...] received an order for a facility rather than a vessel or large FSRU. In any event, adding the [...] order to the market as advocated by the Notifying Party does not modify the Commission's assessment in this Section, in particular on Wison (see **Section 8.3.8.3 (B) d** and **Section 8.3.8.3 (C) xii**) of this Decision.
- (368) Moreover, the Commission considers that the increment of market shares brought by the Transaction is significant also when considering 5 year periods combining earlier years (2011-2015, 2012-2016, 2013-2017, 2014-2018, 2015-2019). In each of these periods, the Parties were the two largest players on the market. The market leader has been DSME up to 2014-2018 the period with market shares ranging between [30-40] and [40-50]%. HHI was the second largest player (with market shares ranging

between [10-20]% and [20-30]%). SHI was the third largest player. The fourth largest player's market share MHI or CSSC, depending on the period considered) is significantly lower. The market leader has been HHIH in 2015-2019, with DSME being still the second largest player. In 2016-2020, DSME's market share was slightly lower than SHI's in 2016-2020.

- (369) Forth, the Commission considers that internal documents submitted by the Notifying Party are also evidence that the merger combines two of the three strongest market players. For example, one document states that [...].³⁸³
- (370) Fifth, the Commission considers that the LLNGC market is already very concentrated pre-Transaction and that concentration level in the LLNGC market will increase post-Transaction. Indeed, the post-Transaction, the Herfindahl-Hirshman Index ("H-HI") calculated using the above CGT market shares for the five year period of 2017-2021, is 4781. Absent the Transaction the H-HI would be 3026, which implies a H-HI delta of 1754. The post-Transaction H-HI calculated using market shares by number of ships for the five year period of 2017-2021, is 4756. Absent the Transaction the H-HI would be 3010, which implies a H-HI delta of 1746. These H-HI values, along with their corresponding deltas illustrate the substantial increase in concentration that the Transaction would cause in an already concentrated market. The H-HI values and the H-HI deltas are both significantly larger than the values stated in paragraph 19 and 20 of the Horizontal Merger Guidelines.
- (371) In that regard, the first three players accounting for between about [80-90]% (in CGT) to about [80-90]% (in units) of the market in 2015-2019, about [80-90]% (in CGT and in units) of the market in 2016-2020 and between about [80-90]% (in CGT and in units) of the market in 2017-2021 (up to 30 September 2021). As shown in **Table 5** and **Table 6** above, there are only few shipbuilders, besides the Parties, which have received orders for LLNGCs in the years from 2015 until 2019, namely SHI, MHI, CSSC and KHI.³⁸⁴ In the years from 2016 until 2020 and in the years from 2017 to 2021 (up to 30 September 2021), there are only SHI and CSSC.³⁸⁵
- (372) Thus, contrary to the argument of the Notifying Party that concentration in the LLNGC market is not high, the Commission notes that there is a limited number of players active on the market for LLNGCs and the H-HI data show high levels of market concentration before and even more post-Transaction.
- (373) Sixth, the Commission finds that in this already concentrated market, as shown by the data submitted by the Notifying Party, the market shares of Japanese shipbuilders, which are already far away from South Korean shipbuilders, assume a rather limited importance, given that Japanese shipbuilders sold [90-100]% of their LLNGCs in both the 2014-2018 and in the 2015-2019 periods (no orders in the following years) to domestic customers³⁸⁶ (which only represent about [20-30]% of total demand for LLNGCs in 2014-2018 and about [10-20]% of the total demand for

³⁸³ Report on Clarkson Forecast Seminar for 2nd half of 2018 dated 1 October 2018, Form CO Annex 5.4.38, page 6.

³⁸⁴ SHI-Zvezda cannot be considered as a credible and autonomous shipbuilder in the LLNGC market.

³⁸⁵ SHI-Zvezda cannot be considered as a credible and autonomous shipbuilder in the LLNGC market.

³⁸⁶ The Notifying Party's reply to question 1 of RFI 41, Annex Q.1. See the Notifying Party's reply to question 8 of RFI 67, Annex Q8.1 and Q8.2 to RFI 67.

LLNGCs in 2015-2019³⁸⁷).³⁸⁸ **Table 7** also shows that Japanese shipbuilders contracted only with Japanese customers in the last 10 years, with the exception of Imabari.³⁸⁹ On the other hand, South Korean shipbuilders sold only [5-10]%, [10-20]%, [5-10]% and [5-10]% of their LLNGCs in the 2014-2018, 2015-2019, 2016-2020 and 2017-2021 (up to 30 September 2021) periods respectively to domestic customers³⁹⁰ (which only represent about [0-5]% and about [10-20]% of the total demand for LLNGCs in the 2014-2018 and in the 2015-2019 periods respectively³⁹¹).

- (374) Seventh, as to whether aggregated five-year data may mislead the estimation of market share gaps between shipbuilders, the Commission notes that according to the data in **Table 5** and **Table 6** representing market shares over 5 year periods, there is no large market share gap between DSME and SHI in, for example, the 2015-2019 period. The fact that SHI won a large part of orders in 2018 (where SHI had [20-30]% market share in CGT and DSME had [20-30]% market share in CGT), 2019 or even 2020 is reflected in the aggregated market share data. Considering that SHI's market share has fluctuated significantly (SHI had a market share (in CGT) of [60-70]% in 2010, [30-40]% in 2011, [10-20]% in 2012, [30-40]% in 2013, [5-10]% in 2014, [10-20]% in 2015, [10-20]% in 2016 and [10-20]% in 2017), the aggregated data is a better indication of its overall market position. The Commission considers that SHI's yearly market share fluctuation does not and cannot be interpreted as an indication that the Transaction does not lead to the creation of a dominant position for the Parties as the demand does and can vary significantly on a yearly basis.
- (375) Eighth, as to the fact that CSSC won nearly one-third of LLNGC orders in the years 2010, 2016 and 2017, the Commission notes that these years accounted for the lowest number of LLNGC orders since 2010³⁹², and only very few LLNGCs were ordered in those years: 3 vessels in 2010, 8 vessels in 2016 and 15 vessels in 2017. In addition, CSSC's market share (expressed in CGT) was significantly lower in other years, namely [5-10]% in 2011, [10-20]% in 2012, [5-10]% 2013, [5-10]% in 2014, [0-5]% in 2015, [0-5]% in 2018, [0-5]% in 2019, [5-10]% in 2020 and about [0-5]%³⁹³ in 2021 (up to 30 September 2021). Furthermore, as can be seen in **Table 7**, Chinese customers contracted mostly with CSSC (Hudong) up to 2014 and exclusively with CSSC (Hudong) in the last 5 years. Moreover, CSSC (Hudong) has only received orders from Chinese customers or from customers ordering from CSSC for very specific reasons since 2018.³⁹⁴
- (376) Ninth, as to the Notifying Party's argument that any gap between the Parties and CSSC is expected to reduce, in particular as a result of its merger with CSIC, the Commission notes that CSIC has not received any order for a LLNGCs (neither

³⁸⁷ Calculated as follows: [...] units out of a total of [...] in the 2014-2018 and [...] units out of a total of [...] in the 2015-2019 period. The total number of orders was reported in the Notifying Party's reply to RFI 67, Annex Q.16.

³⁸⁸ See **Section 8.3.2.2 (C) d** and **e**) on tender data for the assessment of Japanese shipbuilders.

³⁸⁹ Clarksons database submitted in response to RFI 67.

³⁹⁰ The Notifying Party's reply to question 1 of RFI 41, Annex Q.1. See the Notifying Party's reply to question 8 of RFI 67, Annex Q8.1 to RFI 67.

³⁹¹ Calculated as follows: [...] units out of a total of [...] in the 2014-2018 and [...] units out of a total of [...] in the 2015-2019 period. The total number of orders was reported in the Notifying Party's reply to RFI 67, Annex Q.16.

³⁹² In 2009, all of the only [...] orders of that year went to [...].

³⁹³ [...].

³⁹⁴ See **Table 7** below. [...].

before nor after merging with CSSC) and there is therefore no indication that the gap is likely to decrease in the foreseeable future.

- (377) Tenth, as to the Notifying Party’s argument that any gap with each of MHI, KHI and JMU, Imabari has not been and is not increasing, the Commission notes that MHI’s and KHI’s last orders were in 2015, JMU’s in 2014 and Imabari’s in 2013.
- (378) Eleventh, the Commission considers that the argument of the Notifying Party that small players clearly pose an important competitive constraint as they do compete in tenders and have a credible history of building LLNGCs over a meaningful period of time, is contradicted by the fact that the tender data presented by the Parties show that the last orders received by MHI, KHI, JMU and Imabari were in or prior to 2015.
- (379) Moreover, as to the argument of the Notifying Party that the Commission mischaracterises the constraint imposed by Japanese shipyards, by suggesting that a high proportion of their sales are made to domestic customers, the Commission notes that [...] order to Imabari dates back to 2013 and is, according to the information provided by the Notifying Party, the only order of an LLNGC by a customer in the European Union to a Japanese shipbuilder since [...]. In total only 9 out of 58 orders to Japanese shipbuilders were made by non-Japanese customers.³⁹⁵ The argument that Japanese customers have placed orders for conventional LLNGCs with non-Japanese shipbuilders is not relevant for the assessment of the domestic focus of Japanese shipbuilders. Indeed, even if the Japanese shipbuilders may compete with non-Japanese shipbuilders for orders by Japanese customers, which represent only about [10-20]% of the total demand,³⁹⁶ their lack of successful bids to non-Japanese customers reflect the Japanese shipbuilders’ lower competitive constraint for orders by non-Japanese customers and, more generally, in the overall market for LLNGCs. This is further shown by the fact that Japanese shipbuilders reported [0-5]% market share in 2016-2020 and in 2017-2021 (up to 30 September 2021).

Table 7 LLNGCs ordered broken down by shipbuilder and by customers’ nationality³⁹⁷

Shipbuilder	Contract period	LLNGCs ordered by Chinese customers	LLNGCs ordered by European customers	LLNGCs ordered by Japanese customers	LLNGCs ordered by Korean customers	LLNGCs ordered by Russian customers	LLNGCs ordered by Other customers	LLNGCs ordered by Unknown
CSSC (Hudong)	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
CSSC (Hudong)	2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]
DSME	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
DSME	2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]
HHI	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
HHI	2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]

³⁹⁵ Clarksons data submitted by the Notifying Party as Annex Q.38 to reply to RFI 67.

³⁹⁶ There were 163 orders for LLNGCs in total in 2015-2019 (the Notifying Party’s reply to RFI 67, Annex Q.16).

³⁹⁷ As explained in **Section 8.3.4.3** and **Section 8.3.8**, the Commission found that neither of the Japanese shipbuilders exert a meaningful competitive constraint or are likely to enter in a timely and sufficient manner.

Shipbuilder	Contract period	LLNGCs ordered by Chinese customers	LLNGCs ordered by European customers	LLNGCs ordered by Japanese customers	LLNGCs ordered by Korean customers	LLNGCs ordered by Russian customers	LLNGCs ordered by Other customers	LLNGCs ordered by Unknown
STX	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
SHI	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
SHI	2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Imabari	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
JMU	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
KHI	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
MHI	2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]
SHI-Zvezda ³⁹⁸	2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]

Source: Commission calculations based on Clarksons database submitted by the Notifying Party responsive to RFI 67, Annex Q38.

(380) Finally, the Commission also notes that in its White Paper 2021, the European Chamber of Commerce in Korea expressed concerns about the Transaction also due to the high combined market shares of the Parties. In particular, it stated that “[c]onsidering the unified company will account for 60% of the LNG carrier market, which by the way is much higher than their combined market share of 21% of the global shipbuilding market, the remaining shipbuilders would not exert sufficient competitive pressure on the merged entity. Also, as these segments reside mainly in the know-how, track-record, and in some cases in mastering the relevant technology, barriers are quite high for new entrants. Therefore, a significant concern that the merger could lead to higher prices [...]”³⁹⁹

8.3.1.4. Market structure: HHI and DSME’s high market shares in the large FSRUs segment

(381) The Commission finds that the large FSRUs segment is very concentrated and the Parties’ combined market shares are high (above 50%) and constitute in themselves *prima facie* evidence of the creation of a dominant position for the following reasons.

(382) First, the Commission notes that **Table 8** and **Table 9** below show the Parties’ and other shipbuilders’ market shares in large FSRUs in both CGT and units (number of vessels ordered).

³⁹⁸ As explained in this Section, these [...] vessels have been reallocated to SHI-Zvezda.

³⁹⁹ ECCK White Paper 2021, page 143. [DOC ID: 5790].

Table 8 Market shares of the Parties and other shipbuilders in the large FSRUs segment (Rolling 5 years shares in CGT)

Builder Group	2011-2015	2012-2016	2013-2017	2014-2018	2015-2019	2016-2020	2017-2021⁴⁰⁰
HHI	[40-50]% ⁴⁰¹	[30-40]%	[30-40]%	[40-50]%	[40-50]%	[40-50]%	[50-60]%
DSME	[20-30]%	[10-20]%	[20-30]%	[20-30]%	[10-20]%	[10-20]%	[10-20]%
HHI + DSME	[60-70]%	[50-60]%	[50-60]%	[60-70]%	[60-70]%	[50-60]%	[60-70]%
SHI	[30-40]%	[30-40]%	[30-40]%	[10-20]%	[20-30]%	[20-30]%	[20-30]%
CSSC ⁴⁰²		[10-20]%	[10-20]%	[10-20]%	[10-20]%	[20-30]%	
Wison ⁴⁰³							[5-10]%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100%	100%

Source: Notifying Party's response to RFI 67, Annex Q13

⁴⁰⁰ Up to 30 September 2021.

⁴⁰¹ [...].

⁴⁰² [...].

⁴⁰³ [...].

Table 9 Market shares of the Parties and other shipbuilders in the large FSRUs segment (Rolling 5 years shares in units)

Builder Group	2011-2015	2012-2016	2013-2017	2014-2018	2015-2019	2016-2020	2017-2021 ⁴⁰⁴
HHI	[40-50]% ⁴⁰⁵	[30-40]%	[30-40]%	[40-50]%	[40-50]%	[40-50]%	[50-60]%
DSME	[10-20]%	[10-20]%	[10-20]%	[20-30]%	[10-20]%	[10-20]%	[10-20]%
HHI + DSME	[60-70]%	[50-60]%	[50-60]%	[60-70]%	[60-70]%	[50-60]%	[60-70]%
SHI	[30-40]%	[30-40]%	[30-40]%	[20-30]%	[20-30]%	[20-30]%	[20-30]%
CSSC ⁴⁰⁶		[10-20]%	[10-20]%	[10-20]%	[10-20]%	[20-30]%	
Wison ⁴⁰⁷							[10-20]%
Total	100.0%	100.0%	100.0%	100.0%	100.0%		

Source: Notifying Party's response to RFI 67, Annex Q13

(383) Second, the Commission notes that, for large FSRUs, the Parties' combined market shares were [60-70]% in CGT (HHI: [40-50]%; DSME: [10-20]%) and [60-50]% in number of ordered vessels (HHI: [40-50]%; DSME: [10-20]%) in 2015-2019. In 2016-2020, the Parties' combined market shares were slightly lower: [50-60]% in CGT (HHI: [40-50]%; DSME: [10-20]%) and [50-60]% in number of ordered vessels (HHI: [40-50]%; DSME: [10-20]%). In 2017-2021 (up to 30 September 2021), the Parties' combined market shares are even slightly higher than in 2015-2019: [60-70]% in CGT (HHI: [50-60]%; DSME: [10-20]%) and [60-70]% in number of ordered vessels (HHI: [50-60]%; DSME: [10-20]%).

(384) Third, the Commission notes that, as shown by **Table 8** and **Table 9** above and contrary to what is argued by the Notifying Party,⁴⁰⁸ the large FSRUs segment is rather concentrated as, there are only two shipbuilders, besides the Parties, which have received orders for large FSRUs (SHI and CSSC) in the past years. Moreover, as explained in **Section 8.3.4.2** and **Section 8.3.8**, CSSC does not exert a sufficient competitive constraint on the Parties and can neither be considered as a recent entrant nor as a likely, timely and sufficient entrant. CSSC does not exert a sufficient competitive constraint on the Parties (and this is unlikely to change in the foreseeable future) and cannot be considered a recent entrant. Moreover, although its entry in the large FSRU segment cannot be excluded, such entry would not be likely, timely and sufficient.

⁴⁰⁴ Up to 30 September 2021.

⁴⁰⁵ [...].

⁴⁰⁶ [...].

⁴⁰⁷ [...].

⁴⁰⁸ The Response to the SO, paragraphs 1018-1019.

8.3.1.5. Conclusions

(385) For the reasons set out in this Section, the Commission considers that the LLNGC market structure is very concentrated and will be even more so post-Transaction. Furthermore, the Commission considers that the combined market shares of the Parties, which have constantly been above 50% over the past 10 years⁴⁰⁹ in both the market for LLNGCs and within in the segment of large FSRUs may constitute in themselves *prima facie* evidence of the creation of a dominant position.⁴¹⁰

8.3.2. *HHI and DSME are each other's close competitors and the Transaction leads to the combination of two out of three (with SHI) very close competitors*

(386) In this Section, the Commission assesses the closeness of competition between the merging parties and other competitors in the market. The Commission finds based on the results of the market investigation, the Parties' internal documents and the analysis of the Parties' tender data that HHI and DSME are each other's close competitors and the Transaction leads to the combination of two out of three (with SHI) very close competitors.

8.3.2.1. The Notifying Party's views

(387) In the Response to the Article 6(1)(c) decision, the Notifying Party argued that there would be several competitors that are equally close competitors to the Parties for the following reasons.⁴¹¹ [...]. Second, the feedback provided by customers and presented by the Commission in the Article 6(1)(c) decision would be limited to whether the Parties and SHI have a similar offering, but would not include considerations of how players compare. Moreover, the fact that the Commission would have not considered whether other players besides the Parties could obtain an equally strong position as per the Parties' in the near future. Third, product differentiation in LNGCs would be negligible due to limited size of the market, high substitutability between the Parties' and their rivals' products and customers' homogeneous needs. Fourth, the internal documents referred to by the Commission in the Article 6(1)(c) decision would not give any insight into closeness of competition but were merely prepared in the context of contemplating the Transaction. Fifth, if a majority of respondents to the market investigation have not ordered LNGCs from Chinese and Japanese shipbuilders so far, it cannot be excluded that customers would order from Chinese or other shipbuilders as they continue to build track record and credibility.

(388) In the Response to the SO,⁴¹² the Notifying Party argued that the Commission's assessment of closeness would be flawed for the following reasons. First, the LLNGCs market would not be a differentiated one and thus the assessment of closeness would not be relevant. Second, the Commission would not have demonstrated that the Parties are each other's particularly close competitors and thus would have not shown that the Transaction would lead to the removal of important competitive constraints between the Parties. Third, the Commission would have failed to draw the right conclusions from its own finding that SHI is an equally close competitor. Fourth, the Commission would have also failed to consider the competitive constraints imposed by other players such as CSSC, Japanese

⁴⁰⁹ Over the last seven rolling five years periods, as shown above in this Section.

⁴¹⁰ Horizontal Merger Guidelines, paragraph 17.

⁴¹¹ Response to the Article 6(1)(c) decision, paragraphs 374-379.

⁴¹² Response to the SO, paragraphs 936-982.

shipbuilders and several new entrants. Fifth, the Commission would have relied on an erroneous interpretation and assessment of the Parties' tender data.

- (389) In the Response to the First Letter of Facts,⁴¹³ the Notifying Party claims that the Commission's analysis of closeness of competition would be flawed as the Commission's participation ratios analysis would be uninformative as such ratios would understate the degree of competitive constraint exerted by the Parties' competitors. Moreover, the Notifying Party claims that the Commission's diversion ratios would not be informative. Moreover, the Commission's win/loss ratios, if anything, would just confirm the Commission's misguided overreliance on market shares, given the mismatch between diversion ratios and the win/loss ratios.
- (390) In the Response to the Second Letter of Facts,⁴¹⁴ the Notifying Party argues that the Commission's assessment of closeness of competition would remain flawed as the Commission would have relied on a mix of one internal document of HHIH, updated tender data analysis and an incorrect assessment of the descriptive analysis. The Notifying Party contends that the Commission's conclusions would be based on a misunderstanding that the LLNGC market suffers from limited capacity as a result of a high degree of product differentiation. In this context, the Notifying Party argues that the Commission's analysis of closeness would suffer from a set of deficiencies. First, the Commission would have not explained how a finding that all three big Korean shipbuilders are equally close competitors could support the finding of creation of dominance. Second, the Commission would have overstated the degree of market differentiation. Third, the Commission has not proved that the Parties' are each other's particularly closed competitors.

8.3.2.2. The Commission's assessment

- (391) As explained in **Section 7.1.1** above and in **Section 8.3.3**, **Section 8.3.4.2**, **Section 8.3.4.3** and **Section 8.3.8** below, the LLNGCs market is not a homogenous market but rather a differentiated market in which shipbuilders compete on a number of important parameters including innovative technologies.
- (392) As a result, the degree of substitutability between the Parties' products is particularly relevant when assessing the effects of a merger in such scenario. Indeed, pursuant to the Horizontal Merger Guidelines⁴¹⁵, the higher the degree of differentiation in the market and the higher degree of substitutability between the merging firms' products, the more likely it is that the merged entity will raise prices post-Transaction. The merger of two particularly close competitors with combined market shares consistently above 50% and the absence of sufficient competitive constraints by remaining competitors, is likely to allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction, thus leading to the creation of a dominant position by the merged entity.
- (393) The Commission sets out below its assessment of closeness of competition based on the evidence collected during the market investigation, the Parties' internal documents and a tender data analysis. The results of the market investigation should be read in the light of the below tender data analysis and vice versa.
- (394) Contrary to the Notifying Party's claim, the market investigation showed that HHI and DSME compete very closely with respect to the LLNGCs market. This finding is

⁴¹³ Response to the First Letter of Facts, paragraph 251 and ff.

⁴¹⁴ Response to the Second Letter of Facts, paragraph 180 and ff.

⁴¹⁵ Horizontal Merger Guidelines, paragraph 28.

also supported by Parties' internal documents as well as the tender analysis performed by the Commission.

- (A) The Commission's market investigation results
- (395) Contrary to the Notifying Parties' claims, the market investigation showed that HHI, DSME and SHI compete significantly more closely in the LLNGC market than CSSC (which, as explained in more detail in **Section 8.3.4.2** below does not exert a sufficient competitive constraint on the Parties) or Japanese shipbuilders (which, as explained in more detail in **Section 8.3.4.3** below do not exert a meaningful competitive constraint on the Parties) for the following reasons.
- (396) First, the market investigation showed that HHI, DSME and SHI are each other's close competitors and even particularly close competitors (the Transaction leads to the combination of two out of three – with SHI – very close competitors) as customers indicated that the Parties compete closely under nearly all the top parameters that customers usually take into account when deciding with which shipbuilder to place an order for LNGCs and for LLNGCs. Such parameters are quality/vessel's performance, price, slot availability/delivery time, engineering skills/design, track record/technology and historical relationship.⁴¹⁶ While nearly all customers that expressed an opinion indicated that, for LLNGCs, there would be no difference in terms of order of preference compared to the order of preference of the above-mentioned parameters given for LNGCs,⁴¹⁷ some customers indicated quality/vessel's performance, slot availability/delivery time, price, payment terms or technology and track record as the top parameters of choice of a supplier for LLNGCs.⁴¹⁸ Thus, HHI and DSME are considered as close competitors regardless of the degree of importance of those parameters.
- (397) Accordingly, with regard to conventional LLNGCs, several customers indicated that there is either no other shipbuilder or just SHI that can match HHI and DSME in terms of quality or vessel's performance, price, yard infrastructure, slot availability, timely delivery, engineering, technology and after-sale services.⁴¹⁹ Similarly, a majority of customers that expressed a meaningful opinion indicated that there is either no other shipbuilder or just SHI that can match HHI and DSME on track record, delivery time.⁴²⁰ This is also supported by a broker, which stated that “[t]he big three Korean shipbuilders (HHI, DSME, SHI) are by far the most competent in the market for large LNG carriers. [...]”⁴²¹ A customer stated that “Korean shipbuilders [...] are the real competitors in large LNG carriers [...]”⁴²² and that the Transaction will entail a reduction “from three to two”.⁴²³ This is confirmed by another customer that stated that “[...] after the merger, there will be only one credible alternative, i.e. Samsung [...]”⁴²⁴ Another customer emphasised that “[t]he proposed transaction may create an oligopoly (reduction from three Korean market leaders in LNG carriers to two with dominant role) and quite likely have an effect on

⁴¹⁶ Replies to question 18 of Questionnaire Q3 to Customers. [DOC ID: 3244]

⁴¹⁷ Replies to question 19 of Questionnaire Q3 to Customers. [DOC ID: 3244]

⁴¹⁸ Replies to questions 19 and 19.1 of Questionnaire Q3 to Customers. [DOC ID: 3244]

⁴¹⁹ Replies to questions 32.1, 32.2, 32.4, 32.5, 32.7, 32.8, 32.9, 32.10 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴²⁰ Replies to questions 32.3 and 32.6 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴²¹ Minutes of the conference call with [...] dated 2 March 2020, paragraph 17. [DOC ID: 2657]

⁴²² Minutes of the conference call with [...] dated 25 February 2020, paragraph 16. [DOC ID: 2350]

⁴²³ Minutes of the conference call with [...] dated 25 February 2020, paragraph 16. [DOC ID: 2350]

⁴²⁴ Minutes of the conference call with [...] dated 19 February 2020, paragraph 8. [DOC ID: 2486]

increasing prices”.⁴²⁵ Another customer stated that it has always only invited HHI, DSME and SHI to bid as “[...] [t]he big three Korean shipbuilders build to the highest standard of quality and the lowest prices. [...]”.⁴²⁶ Another customer confirmed that “[...] [e]ffectively, the only place to purchase LNG vessels is in Korea. [...]”.⁴²⁷

- (398) Similarly, with regard to the large FSRUs segment, some customers indicate SHI as the one that can match HHI and DSME's quality and vessel's performance,⁴²⁸ price,⁴²⁹ yard infrastructure.⁴³⁰ A majority of customers that expressed a meaningful opinion indicate SHI as the one that can match HHI and DSME's on track record,⁴³¹ slot availability,⁴³² delivery time,⁴³³ timely delivery,⁴³⁴ technology,⁴³⁵ engineering skills.⁴³⁶
- (399) Indeed, when asked which shipbuilders customers generally invite to provide an offer when conducting a selection process for LNGCs and for LLNGCs, HHI, DSME and SHI were consistently the three most named by customers that expressed an opinion.⁴³⁷ This is supported by the fact that when asked which shipbuilders can actually build LLNGCs or other types of specialised LNGCs (such as ice-breaker LNGCs),⁴³⁸ HHI, DSME and SHI, were the three most named shipbuilders by customers that responded to the relevant question.⁴³⁹
- (400) Similarly, in the question requesting customers to rank the various shipbuilders in terms of various parameters such as price, quality, likely timely delivery, design, cost of maintenance, durability/expected vessel's life, fuel consumption and performance, availability of slots, track record, technology and know-how, HHI, DSME and SHI scored the highest well ahead of CSSC (Hudong) or any other Chinese or Japanese shipbuilders.⁴⁴⁰ Indeed, based on price, quality, delivery time, service levels, innovation, track record, know-how, nearly all customers that expressed an opinion named DSME and SHI as HHI's closest competitors.⁴⁴¹ When it comes to the question of closest competitor to DSME, the market investigation's results indicated also that on price, quality, delivery time, service levels, innovation, track record, know-how nearly all customers that expressed an opinion named HHI as being the closest.⁴⁴² One customer explained that “*in the production of LNG carriers HHI is the leading company in the market and DSME and Samsung are sharing the second place based on number of delivered ships, as well as current order-book.*”⁴⁴³ The

⁴²⁵ Minutes of the conference call with [...] dated 17 February 2020, paragraph 8. [DOC ID: 2958]

⁴²⁶ Minutes of the conference call with [...] dated 24 February 2020, paragraph 5. [DOC ID: 2663]

⁴²⁷ Minutes of the conference call with [...] dated 25 February 2020, paragraph 13. [DOC ID: 2922]

⁴²⁸ Replies to question 78.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴²⁹ Replies to question 78.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³⁰ Replies to question 78.4 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³¹ Replies to question 78.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³² Replies to question 78.5 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³³ Replies to question 78.6 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³⁴ Replies to question 78.7 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³⁵ Replies to question 78.8 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³⁶ Replies to question 78.9 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁴³⁷ Replies to question 17 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁴³⁸ The Notifying Party's reply to question 2 of RFI 14, Annex Q2. See also the Notifying Party's reply to question 26 of RFI 67, Annex Q26.2.

⁴³⁹ Replies to question 14 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁴⁴⁰ Replies to question 20 of Questionnaire Q3 to Customers. [DOC ID: 3244]

⁴⁴¹ Replies to question 21 of Questionnaire Q3 to Customers. [DOC ID: 3244]

⁴⁴² Replies to question 22 of Questionnaire Q3 to Customers. [DOC ID: 3244]

⁴⁴³ Minutes of the conference call with [...] dated 20 June 2019, paragraph 16. [DOC ID: 172]

same customer underlined that “[...] [i]n LNG Korean shipbuilders are considered leaders. The Japanese shipbuilders offer the same quality as the Koreans but work mostly with Japanese customers. Chinese shipbuilders have less technical experience since they delivered fewer ships”.⁴⁴⁴ Another customer considers that “HHI, DSME and Samsung are very equal and compete very closely to one another”.⁴⁴⁵ Another customer explained that “[...] Samsung would be, at least for LNG carriers, the shipbuilder in direct competition with both HHI and DSME. [...]”⁴⁴⁶

- (401) Second, the market investigation also indicated that the Parties are each other’s particularly close competitors. DSME is the one that is mentioned the most by shipbuilders that expressed an opinion on which shipbuilder is HHI’s closest competitor on price, quality, delivery time, service level, innovation, track record and know-how while HHI was the one mentioned the most (ahead of SHI) by shipbuilders that expressed an opinion on which shipbuilder is DSME’s closest competitors on service levels, track record and know how and the one that, together with SHI, was mentioned the most on price, quality, delivery time and innovation.⁴⁴⁷ There were also indications that such considerations would not change for FSRUs.⁴⁴⁸
- (402) Indeed, if HHI, DSME and SHI are the three shipbuilders that customers having expressed an opinion mentioned the most when asked which shipbuilder they invited for tenders for LLNGCs since 2014, HHI and DSME are the two shipbuilders that customers mentioned the most as those having been ultimately selected in LLNGCs tenders since 2014.⁴⁴⁹ Moreover, some customers that expressed an opinion indicated HHI and DSME as each other’s best alternative and an almost unanimous majority of them stated that HHI and DSME are amongst the two best ones with SHI.⁴⁵⁰ Contrary to what argued by the Notifying Party in its Response to the SO⁴⁵¹ and in its Response to the Second Letter of Facts,⁴⁵² the Commission’s analysis of closeness of competition based on the market investigation (specifically on questions 24 and 68 of Questionnaire Q8 to Customers)⁴⁵³ does not rely on a limited set of customers. Indeed, the [...] customers that expressed an opinion in question 24 and 68 of Q8 to Customers (which focussed on conventional LLNGCs and large FSRUs respectively) are a representative set of customers as they represent [...] of the top [...], [...] of the top 10 and [...] of the top [...] LLNGC customers by units and by value in 2011-2020.⁴⁵⁴ Moreover, specifically on large FSRUs, the [...] customers that expressed an opinion in question 68 of Q8 to Customers (which focussed on large FSRUs) are a representative set of customers as they represent [...] of the top [...], [...] of the top [...] and [...] of the top [...] large FSRUs customers in 2011-2020.⁴⁵⁵

444 Minutes of the conference call with [...] dated 20 June 2019, paragraph 8. [DOC ID: 172]

445 Minutes of the conference call with [...] dated 28 June 2019, paragraph 27. [DOC ID: 190]

446 Minutes of the conference call with [...] dated 2 July 2019, paragraph 16. [DOC ID: 1328]

447 Replies to questions 82 and 83 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

448 Replies to questions 82.1 and 83.1 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

449 Replies to questions 24 and 68 of Questionnaire Q8 to Customers. [DOC ID: 3241]

450 Replies to questions 24 and 68 of Questionnaire Q8 to Customers. [DOC ID: 3241]

451 Response to the SO, Annex C.44, paragraphs 2.13-2.15.

452 Response to the Second Letter of Facts, paragraph 192.

453 Replies to questions 24 and 68 of Questionnaire Q8 to Customers. [DOC ID: 3241]

454 Commission’s calculations based on Clarksons database submitted by the Notifying Party in reply to question 38 of RFI 67, Annex Q38.

455 Commission’s calculations based on Clarksons database submitted by the Notifying Party in reply to question 38 of RFI 67, Annex Q38.

(403) Moreover, the Commission notes that **Table 10** below provides an analysis of the shipbuilders contacted⁴⁵⁶ by customers for LLNGCs tenders. It can be observed that HHI, DSME and SHI are not only the most invited shipbuilders in general, but also most frequently contacted to participate in the same tender. It is also apparent from the below table that KHI and CSSC (Hudong) were contacted to participate in a tender respectively [...] and [...] together with the Koreans, whereas MHI [...] (but only until 2017).

Table 10 Shipbuilders contacted in LLNGC tenders by tender year

Tender year	HHI, DSME, SHI	DSME, SHI	SHI	HHI, DSME, SHI, KHI	HHI, DSME, SHI, MHI	HHI, DSME, SHI, KHI, CSSC	HHI	DSME, HHI, SHI, MHI, NHI ⁴⁵⁷
2014	[...]							[...]
2015	[...]							
2016	[...]							
2017	[...]	[...]		[...]	[...]			
2018	[...]		[...]					
2019						[...]	[...]	

Source: non-confidential replies to questions 24 and 68 of Questionnaire Q8 to Customers [DOC ID: 3241]

(404) Third, the Commission considers that the Notifying Party’s argument that the Parties would not be each other’s close competitors as there would be significant competitive constraints from other shipbuilders is immaterial in this respect. For the reasons set out above, the Commission considers that HHI, DSME and SHI, and in particular the Parties compete the closest. In addition, the Commission analysed in more detail in **Section 8.3.4.2** and **Section 8.3.4.3** the degree of competition constraint exercised by other market players, CSSC (Hudong) and the Japanese shipbuilders in particular, and concluded that on the one hand CSSC (Hudong) does not exert a sufficient competitive constraint and, and on the other hand, Japanese shipbuilders do not exert a meaningful competitive constraint. The merger of two particularly close competitors with combined market shares consistently above 50% and the absence of sufficient competitive constraints by remaining competitors, is likely to allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction, leading to the creation of a dominant position by the merged entity

(B) The Parties’ internal documents

(405) The Parties’ internal documents confirm the findings of the market investigation on close and even particularly close competition between the Parties for the following reasons.

(406) First, [...] ⁴⁵⁸ [...] ⁴⁵⁹ [...] ⁴⁶⁰ [...] ⁴⁶¹ [...] ⁴⁶² [...] ⁴⁶³

⁴⁵⁶ In order to give a broad picture the Commission included also contacted shipbuilders that did not submit an offer.

⁴⁵⁷ A customer reported [...], however the Commission is not aware of such shipbuilder since it is not reported by Clarksons.

⁴⁵⁸ The Notifying Party’s 5.4 documents, “[...]”, dated January 2019, slide 6; [...], Form CO, Annex 5.4.19.

- (407) Second, in some internal documents reporting on the status of newbuilding agreements and projects, [...]:
- (a) in one document [...];⁴⁶⁴
 - (b) in another document in which [...];⁴⁶⁵
 - (c) in another document [...];⁴⁶⁶
 - (d) in another document [...];⁴⁶⁷
- (408) [...] ⁴⁶⁸ [...] ⁴⁶⁹. [...].
- (409) On the point raised by the Notifying Party in its Response to the Second Letter of Facts, pursuant to which there would be several internal documents of the Parties that would identify the competitive constraint exercised by SHI, CSSC and also other players such as KHI,⁴⁷⁰ the Commission notes the following. First, the internal document pursuant to which the Notifying Party claims that SHI would also exercise a competitive constraint on the Parties,⁴⁷¹ the Commission notes that this does not invalidate the Commission’s findings that HHIH and SHI are each other’s close competitors. As mentioned above in this Section and further shown in the below paragraphs, the Commission also found that HHI and DSME are each other’s close competitors and that the Transaction leads to the combination of two out of the three (with SHI) very close competitors. Second, the internal document⁴⁷² pursuant to which the Notifying Party claims that CSSC would also exert a competitive constraint on the Parties, the Commission notes that, as mentioned in **Section 8.3.3** and **Section 8.3.4.2**, it is reported that CSSC (Hudong) may be competitive only in so far as COSCO, a Chinese shipping company, is involved in the project and that there are some doubts about CSSC (Hudong)’s quality. Third, on the internal document pursuant to which the Notifying Party claims that also KHI would exert a competitive constraint on the Parties,⁴⁷³ the Commission refers to **Section 8.3.4.3** and **Section 8.3.8**.
- (410) Third, and shown in **Figure 37** below one of DSME’s internal documents [...].⁴⁷⁴

⁴⁵⁹ The Notifying Party’s 5.4 documents, “[...]”, dated 15 January 2019, page 5-6, [...], Form CO, Annex 5.4.17.

⁴⁶⁰ The Notifying Party’s reply to question 5 of RFI 67, Annex Q5, page 36 – [...] presentation of September 2021.

⁴⁶¹ Response to the Second Letter of Facts, paragraph 189.

⁴⁶² Response to the Second Letter of Facts, paragraph 189.

⁴⁶³ Minutes of the meeting with [...] dated 1 October 2019, paragraph 14 [DOC ID: 3201] minutes of the meeting with [...] dated 20 May 2019, paragraph 5. [DOC ID: 3203]

⁴⁶⁴ The Notifying Party’s internal documents responsive to RFI 3, [...], dated 28 September 2018, page 2, EU_HHI_0000427-T. [DOC ID: 1836-354]

⁴⁶⁵ The Notifying Party’s [...], dated 20 April 2017, page 3, EU_HHI_0000457-T. [DOC ID: 1836-367]

⁴⁶⁶ The Notifying Party’s internal documents responsive to RFI 3, [...], dated 19 April 2017, page 2, EU_HHI_0000459-T. [DOC ID: 1836-369]

⁴⁶⁷ The Notifying Party’s internal documents responsive to RFI 3, [...], dated 18 February 2017, page 1, EU_HHI_0000481-T. [DOC ID: 1836-380]

⁴⁶⁸ Response to the SO, paragraph 954.

⁴⁶⁹ The Notifying Party’s reply to question 9 of RFI 15, Annex Q9.53.

⁴⁷⁰ Response to the Second Letter of Facts, paragraphs 190-191.

⁴⁷¹ Response to the Second Letter of Facts, paragraph 190.

⁴⁷² Response to the Second Letter of Facts, paragraph 190.

⁴⁷³ Response to the Second Letter of Facts, paragraph 191.

⁴⁷⁴ DSME’s internal documents responsive to RFI 3, [...]. [DOC ID: 1837-145]

Figure 37 [...]

[...]

- (411) Fourth, [Parties' internal document].⁴⁷⁵
- (412) Fifth, in one of HHI's internal document, [...].⁴⁷⁶ As shown in **Section 8.3.7.2**, only HHI, DSME and SHI are large enough to be considered for such big orders. Therefore, the Parties and SHI are each other's only competitors on those orders.
- (413) For the evidence provided in the internal documents of the Parties outlined above in this Section, the Commission considers that HHI and DSME are close and even particularly close competitors in the LLNGC market.
- (C) The Commission's tender data analysis
- (414) In order to assess the degree of closeness of competition between the Parties, the Commission has also analysed the tender data submitted by the Parties.
- a) Procedural remarks and the Commission's methodology*
- (415) In the Response to the Article 6(1)(c) decision the Parties acknowledged that tender data have several limitations due to the lack of complete information on the winner of the tender, the mode of competition (i.e. whether the tender is unilateral or multilateral), the number and the identity of the competitors. The Commission agrees with these observations and therefore considers that the analysis of the Parties' tender data should be assessed in the light of other evidence regarding the closeness of competition of the Parties.⁴⁷⁷
- (416) The Parties also considered that the analysis in the Commission's Article 6(1)(c) decision does not provide a complete overview of competition in the relevant market. According to the Parties, the average number of competitors in a tender depends on the customer's decision on which shipbuilder to invite, it is therefore a subsample of the possible competitors and observing a low number of invited shipbuilders does not imply in itself a concentrated market with few shipbuilders.⁴⁷⁸
- (417) The Commission agrees with the Parties that the tender data have several limitations that are discussed in the following paragraphs. However, the Commission considers that these data can still provide useful information on competition in the market to be evaluated together with the other evidence gathered in the course of the market investigation.
- (418) The Commission also acknowledges that the tender data alone does not fully describe the competition in the market. Indeed, shipbuilders' customers may have informal contacts with a number of shipbuilders before launching a public tender or inviting a few players to tender. However, since the Parties relied on their best knowledge to identify the other competitors that participated in each tender, the tender data provide a first useful outlook on the competition in the market. The analysis carried out with tender data could be theoretically considered an underestimation of the actual competition in the market, but if these data demonstrate that Parties are close competitors in these data, they would still be close competitors also if it would be possible to account for the out of tender contacts that are not

⁴⁷⁵ DSME's internal documents responsive to RFI 3, [...]. [DOC ID: 1425-9]

⁴⁷⁶ The Notifying Party's internal documents responsive to RFI 3, [...]. [DOC ID: 1445-167]

⁴⁷⁷ Response to the Article 6(1)(c) decision, paragraph 213.

⁴⁷⁸ Response to the Article 6(1)(c) decision, paragraph 217.

reflected in the tender data. Nevertheless, the Commission points out that, as further described in **Section 8.3.2.2 (C) c)** below, most of the LLNGCs contracts are awarded *via* multilateral tenders. For these reasons the conclusions that can be reached on the basis of these multilateral tenders apply to a large portion of the market for LLNGCs and therefore are in any case relevant also without considering the unobserved competition that takes place for the bilateral contracts.

- (419) The Commission also considers that the tender data of the Parties are consistent with order market shares⁴⁷⁹ and also with the tender information collected from the respondent to the Phase II market questionnaire.⁴⁸⁰ As a consequence, despite their limitation, the Commission considers that the tender data of the Parties provide a good overview of the competitive dynamics and of the closeness of the Parties.
- (420) After the adoption of the Article 6(1)(c) decision the Commission has asked HHI and DSME to provide updated tender data in relation to tenders occurred from 2009 until the end of 2019 for the tender data analysis presented in the SO.⁴⁸¹ Updated tender data have been provided both at the level of tender and vessel whereby a single tender typically involves a number of vessels usually of the same vessel class. The Parties submitted the latest updated version of tender data for both HHI and DSME on 27 August 2021⁴⁸² which is the basis for the Commission's subsequent tender data analysis.

b) The Parties' tender data

- (421) HHI participated in [...] tenders for LLNGCs⁴⁸³ from 2009 to 2019, [...] in 2020 and [...] in 2021.⁴⁸⁴ Of these projects, [...] were won, for a total of [...] vessels, [...] are still ongoing and the remaining [...] were lost by HHI. Of the total number of tenders, [...] were multilateral, [...] bilateral⁴⁸⁵ and in the remaining [...] the nature of competition was unknown.
- (422) DSME participated in [...] tenders for LLNGCs from 2009 until the end of 2019 and [...] in 2020 and [...] in 2021.⁴⁸⁶ Of these projects [...] were won, for a total of [...] vessels, [...] are still ongoing and the remaining were lost by DSME. [...] of the total tenders were multilateral, while [...] were bilateral.
- (423) For both Parties the tender data are relatively complete for what concerns the instances in which they won, as for these observations both HHI and DSME could provide several tender and vessel level characteristics. However, both HHI's and DSME's data continue to have some missing information. Despite the amendments, the data are less complete for the lost tenders than for the won ones as the Parties claim that data are not systematically collected or followed up for the lost tenders. In particular, for LLNGCs the winner is unconfirmed or unknown for [...] tenders in

⁴⁷⁹ See **Section 8.3.1.3** and **Section 8.3.1.4**.

⁴⁸⁰ See **Section 8.3.2.2 (A)**.

⁴⁸¹ Both datasets also includes ongoing or concluded tenders in 2020. These tenders were excluded for the purpose of the analysis shown in the SO (Section 7.4.1.5 iii).

⁴⁸² In response to RFI 65.

⁴⁸³ In the HHI tender data, [...].

⁴⁸⁴ For the purpose of the following analysis [...] tenders whose tender year is reported as unknown are considered as of 2020 since they were included in the tender data received in 2020 in response to RFI 46.

⁴⁸⁵ For one instance classified as bilateral three bidders were recorded, therefore it was considered to be unconfirmed.

⁴⁸⁶ In DSME's updated tender data from the SO, the Parties record [...].

which HHI participated and for [...] ⁴⁸⁷ in which DSME participated. The winner is also unknown for tenders classified as “likely cancelled” in the Parties’ databases, [...] tenders in HHI’s bidding data and [...] in the DSME bidding data. ⁴⁸⁸ The winner is still not known for [...] ongoing tenders in the DSME’s database.

- (424) Further, the Commission notes that overall for both the won and lost projects the identity and the number of the competitors is not always recorded. Indeed, the Parties argue that due to the informal nature of the tender process often they are not aware of the number and identity of the other competitors. In particular, as regards the [...] tenders in which HHI participated and the mode of competition is unknown, the number of competitors is unknown in [...] of these. Moreover, in [...] tenders there was at least one unknown competing yard. As regards DSME’s bidding data, for [...] tenders the number of competitors is unknown and for [...] the identity of at least one of the competitors is unknown.
- (425) One of the discrepancies found is that in the lost tenders there are occurrences in which the winner does not appear among the competitors that took part in the tender. The Commission remarks that for the purposes of its assessment, the Parties’ tender data have been amended to reflect the participation of the winner in the tender. In particular, in HHI’s tender data [...]. In DSME’s tender data, [...]. ⁴⁸⁹ These amendments slightly increase the average number of competitors participating in each tender and the corresponding participation ratios. This approach ensures consistency within each datasets and provides a broader view of the market dynamics. Nevertheless, given that the number of amendments is quite small compared to the number of observation, the Commission remarks that the changes in participation ratios are negligible.
- (426) Finally, the Commission also notes that the tender data for the won projects match the vessels data that are reported in the Clarksons vessel registration database, with the exception of few vessels ⁴⁹⁰ meaning that the tender data are representative of the universe of LLNGCs that was eventually built by the Parties.

c) *Mode of competition*

- (427) The tender data submitted to the Commission specify, according to the Parties’ best knowledge whether one or more shipbuilder have been invited, regardless of the type of tender. In the LLNGCs market, multilateral tenders are predominantly used across time as can be seen from **Table 11** and **Table 12**. Therefore, in the following Sections, the analysis focuses only on multilateral tenders.
- (428) The Commission acknowledges that the tender data alone does not fully describe the competition in the market. Indeed, shipbuilders’ customers may have informal contacts with a number of shipbuilders before launching a public tender or inviting a few players to tender. However, the conclusions reached on tender data are in any case relevant also without considering the unobserved competition that takes place for the bilateral contracts.

⁴⁸⁷ In one tender DSME reports [...].

⁴⁸⁸ [...].

⁴⁸⁹ [...].

⁴⁹⁰ In the period 2011 to 2020, the Parties’ tender data report [...] vessels ordered at HHI and [...] vessels ordered at DSME, whereas [...] vessels for HHI and [...] vessels for DSME are reported in the Clarkson data provided in response to RFI 67, Annex Q38.

(429) The bidding data of HHI and DSME show that multilateral tenders are predominantly used across time for all vessel types and in the LLNGC market. **Table 11** and **Table 12** show the tender type for the different vessel classes. Although there are unconfirmed tenders, multilateral tenders are prevalently used across all vessel types.

Table 11 Mode of competition across vessel types based on HHI tender data, 2011-2020

	Bilateral tender	Multilateral tender	Unconfirmed
LLNGC ⁴⁹¹	[...]	[...]	[...]
VLGC	[...]	[...]	[...]
Post-Panamax ⁴⁹²	[...]	[...]	[...]
VLCC ⁴⁹³	[...]	[...]	[...]

Source: HHI's tender data submitted in response to RFI 65

Table 12 Mode of competition across vessel types based on DSME tender data, 2011-2020

—	Bilateral tender	Multilateral tender
LLNGC	[...]	[...]
VLGC	[...]	[...]
Post-Panamax	[...]	[...]
VLLC	[...]	[...]

Source: DSME's tender data submitted in response to RFI 65

(430) **Table 13** and **Table 14** illustrate further that multilateral tenders are predominantly used across time in the LLNGC market. Therefore, the tender data analysis of the Commission focuses on multilateral tenders. The Commission acknowledges that the tender data alone does not fully describe the competition in the market. Indeed, shipbuilders' customers may have informal contacts with a number of shipbuilders before launching a public tender or inviting a few players to tender. However, the conclusions reached on tender data are in any case relevant also without considering the unobserved competition that takes place for the bilateral contracts.

Table 13 Mode of competition for LLNGCs based on HHI tender data, 2011-2020

	1 bidder	2 or more bidders	Unconfirmed
2011-2015	[...]	[...]	[...]
2016-2020	[...]	[...]	[...]

Source: HHI tender data submitted in response to RFI 65

⁴⁹¹ Only the tenders for which the year is confirmed are included in this table.

⁴⁹² Post-Panamax containership is a vessel that can carry at least 15 000 TEUs.

⁴⁹³ VLCCs are very large crude carriers of at least 200 000 DWT.

Table 14 Mode of competition for LLNGCs based on DSME tender data, 2011-2020

	Bilateral tender	Multilateral tender
2011-2015	[...]	[...]
2016-2020	[...]	[...]

Source: DSME tender data submitted in response to RFI 65

(431) In the Response to the Article 6(1)(c) decision, the Notifying Party argues that post-Transactions the multilateral tenders in which only the Parties would have competed would not be bilaterally negotiated post-merger.⁴⁹⁴ Instead, customers would keep the multilateral auction format inviting other shipbuilders beyond the merged entity since they chose this format.⁴⁹⁵

(432) In relation to this, the Commission considers that it is not granted that if pre-Transaction a customer invited only HHI and DSME to a tender, post-Transaction this customer would necessarily invite the merged entity and another competitor. That same customer could have sought to invite three shipbuilders even pre-Transaction in the context of the multilateral tender. Indeed the Notifying Party does not provide any reasons for why the multilateral tender should be limited to only two shipbuilders pre-Transaction. The Commission points out that if a customer willing to run a multilateral tender only invited or received offers from two players (HHI and DSME) may well indicate that there were no additional shipbuilders that could compete with the Parties.⁴⁹⁶

d) Tender participation over time

(433) To understand the evolution over time of the competitive landscape the Commission considers that it is informative to break down the data at annual level. The following tables show the number of tenders in which the Parties participated together with the identity of the competitors that the Parties met and the frequency of the common participation on an annual basis.⁴⁹⁷ Two main observations can be drawn. First, the overall number of competitors reduces significantly over time. Second, a number of competitors from around 2015/2016 disappear from the tables, meaning that there is no trace of any competitive interaction with these competitors. Third, it is not the case that these shipbuilders that do not participate in the tender of the Parties are winning orders from other tenders or other bilateral negotiations in which the Parties do not participate. Although it cannot be excluded that they may have some contacts with customers for potential projects, the data show that all these shipbuilders simply stop bidding in the projects in which the Parties bid (or at least the Parties do not see them bidding) and stop winning orders in general (not only against the Parties). Indeed, the Japanese shipbuilders, KHI, MHI and JMU, received contracts up to

⁴⁹⁴ As reported by the Notifying Party in Section 7 of the Annex G 11 of the Response to the Article 6(1)(c) decision, [...] tenders for LNGCs from 2009-2019.

⁴⁹⁵ As accurately described by the Notifying Party in Section 7 of the Form CO, the choice between a bilateral and a multilateral tender entails a trade-off between competition and private information exchange and it is influenced by several project specific factors such as the number of potential bidders, project complexity and renegotiation costs, reputation and bargaining power.

⁴⁹⁶ Indeed, it should be expected that customers would have an incentive to increase the number of bidders as to increase competition.

⁴⁹⁷ The table shows the shipbuilders that participated in at least one tender in which one of the Parties participated for LLNGCs in the past 10 years.

2015 and only for non-Membrane type, while Imabari received only [...] contracts in 2013 for membrane LLNGC.⁴⁹⁸ After 2015, only SHI, CSSC (Hudong)⁴⁹⁹, the Parties and SHI-Zvezda won contracts as reported by Clarksons.⁵⁰⁰ Fourth, the only competitors that are active throughout the time period considered are the Parties, SHI and CSSC (Hudong).

(434) **Table 15** shows that for the tenders in which HHI participated⁵⁰¹, [...] had the last common participation in 2016,⁵⁰² while [...]’s last participation in a tender with HHI was in 2014.

(435) **Table 16** shows that for the tenders in which DSME participates, [...] participated for the last time in 2014, while [...] were not recorded to be active after 2015⁵⁰³, with the exception of one tender for [...] in 2020.⁵⁰⁴

Table 15 Shipbuilders participation for the LLNGC tenders in which HHI participates

Tender year	HHI	DSM E	SHI	CSSC (Hudong)	ST X	Hanji n	JM U	KHI	MH I	Sungdong	Daehan	CSIC	USC	Imabari	Others
2009	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2010	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2011	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2012	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2013	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2014	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2016	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2017	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2018	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2019	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]

Source: Commission’s calculations based on tender data submitted by the Parties in response to RFI 65.

⁴⁹⁸ See Section 8.3.4.3.

⁴⁹⁹ As explained in greater details in Section 8.3.4.2 (B) b), the Commission considers that, of the CSSC group, only the affiliate Hudong Zhonghua Shipbuilding Co Ltd (CSSC Hudong) has the capabilities to build and bid for LLNGC. Therefore in the tender data, whenever CSSC participates to a tender, the Commission understands that CSSC Hudong is bidding.

⁵⁰⁰ Clarksons’ database in Response to RFI 67, Annex Q38.

⁵⁰¹ Only the tenders for which the year is confirmed are included in this table.

⁵⁰² [...].

⁵⁰³ [...].

⁵⁰⁴ [...].

Table 16 Shipbuilders participation for the LLNGC tenders in which DSME participates

Tender year	DSME	HHI	SHI	CSSC (Hudong)	STX	JMU	KHI	MHI	USC	Mitsui	Others
2010	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2011	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2012	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2013	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2014	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2016	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2017	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2018	[...]	[...]	[...] ⁵⁰⁵	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2019	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65.

e) *Participation ratios and win/loss analysis*

- (436) Using the Parties' tender data the Commission has assessed the extent to which the merging parties closely compete. On the basis of the updated tender data, the Commission has analysed the participation ratio of the Parties and the win/loss ratio that are described in the following paragraphs.
- (437) The Commission has computed the participation ratio as a proportion of the instances in which the presence of a particular shipbuilder is recorded over the total number of tender participation of the considered party, respectively HHI and DSME. Further, it is possible to compute also the average number of shipbuilders that participated in the tenders together with the Parties. **Table 17** and **Table 18** present the results of this analysis respectively for HHI and DSME. The below tables offer a full perspective by also showing the marginal shipbuilders that were omitted in the Commission's Article 6(1)(c) decision, which omission was contested by the Notifying Party in its Response to the Article 6(1)(c) decision.^{506 507}
- (438) For HHI, the results in **Table 17** show that the competitors most frequently present in a tender are DSME ([...] in 2011-2015 and [...] in 2016-2020) and SHI ([...] in 2011-2015 and [...] in 2016-2020). HHI met STX, CSSC (Hudong), KHI, MHI, Hanjin, JMU, Imabari and few others much less frequently than it met DSME and SHI in 2011-2015 and stopped meeting them in 2016-2020 with the exception of

⁵⁰⁵ [...].

⁵⁰⁶ Following the methodology of the SO (see footnote 553, 1288), for tenders in which the winner was not univocally identified, the Commission considered it to be unknown. For tenders in which the number of shipbuilders was higher than the shipbuilders univocally identified, the Commission considered the identity of the remaining shipbuilders as unknown.

⁵⁰⁷ Following the methodology of the SO (see footnote 554, 1288), shipbuilders whose identity was not clearly identified are considered as "Others".

CSSC (Hudong) ([...]), Hanjin ([...]) and KHI ([...]). Indeed, except for CSSC (Hudong), these shipbuilders stopped participating in the same tenders as HHI after 2016.⁵⁰⁸ Moreover, the Commission computed the average number of shipbuilders for all tenders (including tenders where no other competitors are deemed to have participated) and it does not change substantially over time.

Table 17 Participation ratio for all the tenders in which HHI participates

Tender Year	Obs.	DSME	SHI	CSSC (Hudong)	STX	Hanjin	JMU	KHI	MHI	Imabari	Others	avg. # competitors
2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	Sungdong [...] Daehan [...] Universal [...] Namura [...] Ronsheng [...] Others [...]	[...]
2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	Sungdong [...] Others [...]	[...]

Source: Commission's calculations based on tender data submitted by Parties in response to RFI 65

- (439) The tender data of DSME show a similar picture as the computed participation ratio for HHI are even higher as shown in **Table 18**. Overall DSME participates to a smaller number of tender events. The competitor that DSME meets most frequently is HHI ([...] in 2011-2015 and [...] in 2016-2020) followed by SHI ([...] in 2011-2015 and [...] in 2016-2020). Also in this case the remaining known shipbuilders are quite distant (maximum [...] of participation in the last 5 years) as they participate much less frequently than HHI and SHI in the same tenders as DSME. This is particularly evident for the 2016-2020 tenders in which the average number of competitors is less than [...] and diminished with respect to the tenders in the previous five years.
- (440) For what concerns the DSME tender data the Commission also notes that they are of a lower accuracy as compared to HHI's as there are many instances in which the identity of competitors is not identified. However, there is no evidence that this may concern some specific tenders or shipbuilders rather than others or that the quality of the tender data changes over time.

⁵⁰⁸ [...].

Table 18 Participation ratio for all tenders in which DSME participates

Tender Year	Obs.	HHI	SHI	CSSC (Hudong)	STX	JMU	KHI	MHI	USC	Mitsui	Others	avg. # competitors
2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	Others [...]	[...]
2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	SHI-Zvezda [...] Others [...]	[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65.

- (441) Despite the possible limitations as explained in **Section 8.3.2.2 (C) a)**, the Commission considers that this data indicates a very close competition between HHI, DSME and SHI and that the three main South Korean players appear to compete much more closely with each other than with the other shipbuilders. However, the previous tables include all tenders in which HHI and DSME participated, including tenders for which the mode of competition is not specified (as shown in **Table 13**, in [...] of HHI's total LLNGC).
- (442) The Commission further refined its analysis by computing the participation ratios only on confirmed multilateral tenders (i.e. those tenders in which at least one other shipbuilder has bid).^{509 510} This is because including also the tenders that the Parties indicate as bilateral underestimates the participation of other competitors in the Parties' multilateral tenders.⁵¹¹
- (443) For HHI, the results in **Table 19** show that in [...] the LLNGC multilateral tenders in which HHI participates, also DSME and SHI bid (respectively [...] and [...] in 2011-2015, [...] and [...] in 2016-2020). The participation rates of the other shipbuilders are much lower, which is consistent with the previous tables. On average [...] competitors participate in the same tenders. For HHI, the dataset shows that the average number of shipbuilders, once considering only multilateral tenders, decreased over time ([...] in 2011-2015 and [...] in the last 5 years).

⁵⁰⁹ [...].

⁵¹⁰ Therefore, the average number of shipbuilders does not include bilateral tenders, multilateral tenders for which the Party did not record any competitor and tenders for which the competition type (bilateral vs multilateral) is unknown with 0 bidders.

⁵¹¹ The Commission amended the tender data to take into account for winners not reflected in the number of bidders.

Table 19 Participation ratio for all the multilateral tenders in which HHI participates

Tender Year	Obs.	DSME	SHI	CSSC (Hudong)	STX	Hanjin	JMU	KHI	MHI	Imabari	Others	avg. # competitors
2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	Sungdong [...] Daehan [...] Universal [...] Namura [...] Rongsheng [...] Others [...]	[...]
2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	Sungdong [...] Others [...]	[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65.

(444) The tender data of DSME show in **Table 20** that while in the period 2011-2016 HHI and SHI bid in [...] of DSME's multilateral tenders (respectively [...] and [...]), in the last five years they bid less often for the same tenders ([...] and [...]). However, they remain DSME's very close competitors as the remaining known shipbuilders are quite distant (maximum [...] of participation in the last [...] years).

Table 20 Participation ratio for all the multilateral tenders in which HHI participates

Tender Year	Obs.	HHI	SHI	CSSC (Hudong)	STX	JMU	KHI	MHI	USC	Mitsui	Others	avg. # competitors
2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	Others [...]	[...]
2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	SHI-Zvezda [...] Others [...]	[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65.

(445) In the Annex 2 of the Response to the First Letter of Facts, the Notifying Party reiterates its main criticisms as expressed in the Response to the Article 6(1)(c) decision. In particular, the analysis on participation ratio would be uninformative⁵¹² since the Parties' information about the tender participation is imperfect and underreports competitors' participation in tenders and the number of participating competitors merely reflects the customer's decision to invite specific suppliers. The number of participants may not fully reflect the actual degree of competition in the market and Parties' information is imperfect. Further, the Notifying Party highlights that the number of competitors presented in the First Letter of Facts shows a lower number of competitors than those presented in the SO. The Notifying Party therefore concludes that the Commission's analysis cannot undermine the competitive constraints imposed by competitors with spare capacity to produce LLNGCs,

⁵¹² Response to the First Letter of Facts, section II.1 paragraphs 252-253.

including SHI and CSSC (who increased its participation in tenders in 2016-2020 compared to 2015-2019).

- (446) In Annex 23 of the Response to the Second Letter of Facts,⁵¹³ the Notifying Party reiterates that HHI and DSME compete with SHI and CSSC and that the strength of these competitors has been increasing over time (they participate in tenders more frequently and they win an increasing proportion of tenders lost by HHI and DSME).
- (447) On the number of competitors, as explained in this Section, the Commission further refined its analysis by computing the participation ratios on two different samples of tenders. The number of competitors has been computed according to the sample. Further, the Commission relies on the quality of the data provided by the Parties, with the amendments discussed previously in this Section. Even though the data is incomplete, they provide a strong indication that the Parties are each other's most important competitive constraints (together with SHI). All other competitors are only sporadically present in the data. Looking more specifically at the tenders in which DSME participates, the Commission finds that HHI is DSME's close and even very close competitor in terms of participation ratio. On CSSC increased participation rate, the Commission recalls that despite the modest increase from [...] (in 2011-2015) to [...] (in 2016-2020) in HHI's tender data (see **Table 17**) and from [...] (in 2011-2015) to [...] (in 2016-2020) in DSME's tender data (see **Table 18**), the gap with the other merging party and SHI remains significant.
- (448) In the Response to the SO,⁵¹⁴ the Notifying Party criticises the Commission's failure to analyse diversion ratios⁵¹⁵. In the Response to the First⁵¹⁶ and Second⁵¹⁷ Letter of Facts, the Notifying Party then argues that diversion ratios only constitute another way of expressing market shares and are therefore uninformative. In this respect, the Commission points out that it is not required to compute diversion ratios in all cases in order to be able to conclude that a merger would lead to a significant impediment of effective competition. In any case, the Commission notes that diversion ratios are typically computed from market share data as a first proxy or from win/loss analyses if available. In the SO, the Commission has presented both the market shares of the Parties and the results of the win/loss analysis. For what concerns the market share data, it emerges that the Parties are the number one and number two players on the market for LLNGCs over the period 2015-2019. This means that if the Commission were to compute the diversion ratios based on the market share data, it would obviously find that the highest diversion ratios are observed between the Parties. The same holds for the win/loss analysis. In particular, win/loss analysis results could already be interpreted as diversion ratios as they precisely measure the distribution of the sales lost by one entity.
- (449) For completeness, the Commission in the following paragraph presents its computation of the diversion ratios based on market shares. **Table 21** shows the diversion ratios from the Parties to the other shipbuilders in 2015-2019 and 2016-2020 based on CGT order market shares.⁵¹⁸ In the period 2015-2019, the diversion ratio from DSME to HHI is [...], while from HHI to DSME it is [...]. The ratio from

⁵¹³ Response to the Second Letter of Facts, Annex 23, Section 2.

⁵¹⁴ Response to the SO B.II.2.a.1

⁵¹⁵ The share of customers that would shift shipbuilder given a price increase.

⁵¹⁶ Response to the First Letter of Facts, paragraph 254.

⁵¹⁷ Response to the Second Letter of Facts, paragraph 195.

⁵¹⁸ DR_{AB} from shipbuilder A to shipbuilder B is computed as $S_B/(1-S_A)$ where S_A is the market share of shipbuilder A and S_B is the market share of shipbuilder B.

DSME to SHI is [...] and from HHI to SHI is [...]. In the period 2016-2020, SHI has a slightly higher market share than DSME and this is reflected in a higher diversion ratio from HHI to SHI of [...] compared to the one to DSME of [...]. In turn, the diversion ratio from DSME to HHI is [...] and to SHI is [...]. Overall, this confirms that the Parties are each other's close and even very close competitors.

Table 21 Diversion ratios based on 2015-2019 and 2016-2020 market shares

	2015-2019					2016-2020				
from/to ⁵¹⁹	HHI	DSME	SHI	CSSC	SHI-Zvezda	HHI	DSME	SHI	CSSC	SHI-Zvezda
DSME	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
HHI	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]

Source: Commission's calculations based on Clarksons data submitted in response to RFI 67, Annex Q38.

- (450) The Commission also attempted to extract comparable win/loss ratios from the data by using only tenders excluding tenders likely cancelled and tenders whose winner is unknown to the Parties.⁵²⁰ In particular, this analysis is performed only on multilateral tenders.⁵²¹
- (451) **Table 22** shows the percentage of tenders lost by HHI and won by other shipbuilders.⁵²² More specifically, DSME won in 2011-2015 [...] of HHI's lost tenders, while SHI won respectively [...]. In 2016-2020, HHI participated and lost in only [...] tenders for which the winner is known, DSME won [...] of these tenders and SHI [...]. The Commission underlines that even under this loss ratios, the implied market shares of the Parties combined would be [...] for 2016-2020.⁵²³ **Table 23** shows that HHI has won [...] of DSME's lost tenders in the last years. Only [...] and [...] of the lost tenders are won by SHI.

Table 22 Win/loss ratio for the multilateral tenders in which HHI participates and loses excluding the likely cancelled and the ones with unconfirmed winner

Tender year	Obs.	DSME	SHI	CSSC (Hudong)	IMABARI	JMU	KHI	MHI
2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65.

⁵¹⁹ [...].

⁵²⁰ The ongoing tenders are excluded.

⁵²¹ Also in this analysis the Commission manually included the winner among the competitors' names for multilateral tenders.

⁵²² For HHI, the instance of an unknown type of tender and KHI considered as a bidder is included.

⁵²³ The [...] is derived as the sum of the implied HHI ([...]) and DSME ([...]) market shares computed by solving the system of equations (1) $DR_{AB} = S_B / (1 - S_A)$ and (2) $DR_{BA} = S_A / (1 - S_B)$, where DR_{AB} is the measured diversion ratio (from the tender data) from A to B ([...] from HHI to DSME and [...] from DSME to HHI) and S_A is the share of firm A and S_B is the share of firm B.

Table 23 Win/loss ratio for the tenders in which DSME participates and loses excluding the likely cancelled and the ones with unconfirmed winner

Tender year	Obs.	HHI	SHI	CSSC (Hudong)	KHI	MHI	STX	SHI-Zvezda
2011-2015	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2016-2020	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65.

- (452) Overall, the ratios show that [...]. From these ratios and the diversion ratios in **Table 21**, it can be considered that the Parties exert significant competitive pressure on each other's in an order of magnitude that reflects their significant market shares.
- (453) The Commission considers that the above additional pieces of evidence confirms that the Parties are each other's close competitors in the market for LLNGCs and in the segment for large FSRUs and that the Transaction leads to the combination of two out of three (with SHI) very close competitors.
- (454) In the Response to the First Letter of Facts,⁵²⁴ the Notifying Party argues that the analysis of market-share diversion ratios is uninformative as based on the assumption that suppliers lose sales to their competitors in proportion to market shares. If anything, it confirm that the Commission's overreliance on market shares in misguided since the analysis of diversion ratios and win/loss ratios shows that the competitive constraints imposed on the Parties by SHI and CSSC are stronger than their respective market shares would suggest. More specifically, in the Annex 2 to the First Letter of Facts, it is stated that SHI and CSSC exert a higher competitive constraint than what is shown by their market shares and that the idle capacity at yards with the capability of building LLNGCs is also a competitive constraint.
- (455) As in the previous analysis, the Commission underlines that tenders are aggregated for five years, the idle capacity of shipyards is partly taken into consideration since building schedule changes over time. Moreover, as explained in **Section 8.3.4** and **Section 8.3.8**, the market investigation has shown that becoming a credible shipbuilder in LLNGCs is a relatively long time process (a quantitative and qualitative track record in membrane LLNGCs is required) and 10 years or less of inactivity may be enough to discourage customers to order LLNGCs from a shipbuilder, regardless of its past track record. Therefore, the Commission does not consider yards capable of building LLNGCs who have exited the market as apparent from bidding data to be active competitors, especially if they have never successfully built membrane LLNGCs.

f) Econometric analysis

- (456) In Section 5 of Annex G11 of the Response to the Article 6(1)(c) decision, the Notifying Party submitted an econometric model aimed at studying the relationship between some of HHI's profitability indicators (bid prices, expected gross and profit margins) and some variables that capture the intensity of competition (the number of shipbuilders present in a particular tender and the presence of specific competitors) using bidding data from the period 2009 to 2019. On the basis of this analysis the Notifying Party concludes that there is no relationship between the number of

⁵²⁴ Response to the First Letter of Facts, section II.1 paragraphs 252-253.

shipbuilders bidding for a given contract and the profitability measures of HHI's bid or bid prices. In addition, the Notifying Party concludes that DSME's presence in a specific tender does not affect HHI's pricing or expected margins any more than the presence any other competitors'. The Notifying Party argues that this supports the conclusion that a decrease in the number of bidders, such as the one brought by the merger, does not imply higher prices and margins. The results of the econometric analysis submitted in their Response to the Article 6(1)(c) decision suggests further that, on average, HHI's expected margins and prices are higher in tenders where there are no other bidders ("bilateral negotiations") than in tenders where there are several bidders ("multilateral tenders"), in particular for LNG projects. The Notifying Party argues that bilateral negotiations are fundamentally different than multilateral tenders and it is unlikely that the projects for which the Parties were the only bidders would be bilateral negotiations post-merger, because customers could still resort to alternative suppliers.

- (457) In the SO, the Commission considered the analysis done by the Notifying Party on the sample of LNGCs and raised a number of methodological issues.⁵²⁵ The Notifying Party provided in the Response to the SO the updated analysis only on LLNGCs⁵²⁶ and based on an updated dataset for the period 2009 to 2019⁵²⁷. The Notifying Party has tested further specifications of the econometric model (i.e. exclusion of the customer location fixed effects, alternative demand variables and restriction of the analysis to multilateral tenders) to test the robustness of the result that there is no relationship between the number of shipbuilders bidding for a given contract and the profitability measures of HHI's bid or bid prices. On the basis of the updated analysis the Notifying Party concludes that its results and conclusions of the econometric analysis provided in Response to the Article 6(1)(c) decision remain unchanged, with the exception that there is no evidence that expected margins or bid prices are higher in bilateral negotiations than in multilateral tenders. Overall, the Commission does not consider that the Notifying Party's econometric model and the drawn conclusions can dispell the Commission's concerns related to the Transaction. In particular, in the SO the Commission preliminarily raised a number of issues with the initial analysis provided by the Notifying Party.
- (458) In the Response to the Second Letter of Facts, the Notifying Party has updated the bidding data analysis for LLNGCs provided in the Response to the SO. The updated analysis as such does not include new econometric specifications, but is based on updated data⁵²⁸ and includes in particular data for the years 2020 and 2021.⁵²⁹ The Notifying Party states that the results are consistent with the results of the regression analyses submitted in the Response to the SO and on this basis concludes that there is no relationship between the number of shipbuilders bidding for a given contract and HHI's expected margins and bid prices. Further, there is no evidence that expected margins or bid prices are higher in bilateral than in multilateral tenders. In addition,

⁵²⁵ The Commission however points out that it considers the relevant product market to be the market for LLNGCs.

⁵²⁶ Response to the SO, Annex C.44.

⁵²⁷ As a result of the updated data and correction of some errors, the final results in Table 4-6 of Annex C.44 do not show that HHI's margins are higher in tenders where there are no other bidders ("bilateral negotiations") compared to tenders where there are several bidders ("multilateral tenders"). In the first submissions, multilateral tenders HHI appeared to have lower expected margins than bilateral negotiations.

⁵²⁸ Provided to the Commission in response to RFI 65.

⁵²⁹ Response to the Second Letter of Facts, Annex 23.

the Notifying Party concludes DSME's presence in a specific tender does not affect HHI's pricing or expected margins any more than the presence any other competitors.

- (459) In the following paragraphs, the Commission assesses the three econometric analyses of the tender data submitted by the Notifying Party and explains why the latest analysis submitted in the Response to the Second Letter of Facts does not have any reliability capable of rebutting the concerns about the transaction.
- (460) The Commission recalls that the Notifying Party presents in its economic submissions⁵³⁰ an econometric specification to estimate the impact of the number of competitors participating in a tender on HHI's prices and expected margins. Further, in another specification the Notifying Party estimates the impact of DSME's participation on HHI's prices and expected margins. In both specifications, the Notifying Party also introduces several other variables expected to have an impact of prices and margins such as the orderbook, variable costs, the top five customers per vessel class and other fixed effects. The analysis does not find any clear correlation between the number of participants in a bid and HHI's expected margins and bid prices. The Notifying Party interprets this lack of significant relationship as supporting the claim that the merged entity would face significant competitive constraints post-merger and that concentration measures may overstate the impact of the transaction.
- (461) In general the regressions seeking to explain HHI's profitability of bids (measured by their margins) do not manage to explain much of the variation between bids (R-squared⁵³¹ in the regressions are in the range of [10-20]% to [30-40]% in all margin regressions⁵³², which means that approximately [70-80]% to [80-90]% of the variation is left unexplained)⁵³³
- (462) In particular, the only significant correlations with HHI's expected gross margin found in the regression submitted for LLNGCs in the period 2009 to 2019 in the Response to the SO ⁵³⁴ which analyze the role of DSME's participation, is with the participation of [...] (HHI bids with lower expected gross margin in tenders where [...] is present) and orderbook⁵³⁵ (margins are higher when the orderbook is full). No statistically significant correlation is found between HHI's expected gross margin and the presence of DSME or with any of the other competitors. Equally, no

⁵³⁰ Response to the Article 6(1)(c) decision, Annex G11, Response to the SO, Annex C.44 and Response to the Second Letter of Facts, Annex 23.

⁵³¹ R-Squared is goodness-of-fit measure in linear regression models that determines the proportion of variance in the dependent variable (i.e. margins) that can be explained by the independent variables. It can take values between 0% and 100%. In other words, R-squared shows how well the data fit the regression model.

⁵³² Table 7-9 in Annex 23 in the Response to the Second Letter of Facts. The results of the robustness checks presented in Annex A show the same patterns.

⁵³³ The regression seeking to explain the price bid has a high R-square, in particular because prices are highly correlated with the underlying variable costs production. The Notifying Party argues that the fact that prices reflect cost is consistent with intense competition (e.g. Response to the 6(1)(c), Annex G11, para. 4.4, 4.12 and 4.21 or Response to the Second Letter of Facts, Annex 23, para. 3.11). The Commission points out that such a cost pass-through, which arises when a firm changes the prices of its products in response to a change in variable costs, is not inconsistent with existence market power. Even in markets that are not perfectly competitive and where market players have market power, changes in variable costs are typically passed through to prices and thus prices are positively correlated with the variable costs.

⁵³⁴ In Table 5-6 in Response to the SO Annex C.44.

⁵³⁵ Industry orderbook based on the number of orders using Clarkson data.

statistically significant correlation is found between HHI's expected gross margin and the fact that HHI actually won the tender⁵³⁶. For the regression analyzing the effect of the number of participating bidders, the orderbook is the only variable that shows a statistically strong correlation with HHI's expected gross margin⁵³⁷ (the steel prices and the fact that HHI win the tender are both weakly statistically significant)⁵³⁸.

- (463) In the updated analysis provided in Response to the Second Letter of Facts for the period 2009 to 2021 the specifications still fail to estimate any meaningful relationship for HHI's expected gross margin and the number of competitors or DSME's participation. The addition of year 2020 and 2021 adds [...] additional data points to the tender data analysis. In this updated analysis, the Notifying Party now finds a significant negative correlation between HHI's expected profit margin and the fact that HHI actually won the tender in both regressions (analyzing the role of DSME's participation and analyzing the effect of the number of participating bidders).⁵³⁹
- (464) The Commissions assessment of the submitted analysis is thus that it does not have any reliability capable of rebutting the concerns about the transaction. In particular, some of the correlations identified are not meaningful (as explained in **paragraph (462)**). In light of the overall file, it is in particular not credible to believe that is the one competitor in the market that is particularly close to HHI.⁵⁴⁰ As the method is not reliable in positively identifying likely close competitors, it cannot be relied on to positively identify non-close relationships either.
- (465) Similarly, it reduces the credibility of the analysis that there is not a clear statistically significant relationship between the success of a bid and the competitiveness of the bid. As explained in **paragraph (463)**, only the inclusion of data points for the year 2020 and 2021 leads to the result that HHI's bids and margins are on average lower in projects that are won. If the explanatory variables were effective in describing the intensity of competition and if the estimated profit margins would adequately capture how competitive a bid HHI submitted (for allegedly relatively homogenous products), then one would expect to observe a clear pattern in the data that HHI bids are particularly low in the tenders HHI wins, irrespective of the years that are included in the analysis. The absence of this correlation in the analysis for the years 2009 to 2019 suggests that the problems with the quality of the data are important and that the lack of other correlations in the data cannot not be given any weight. This is further reinforced by the fact that the explanatory power of the models to explain the gross and net margins is rather low, with R-squared values between [10-20]% and [30-40]% (as explained in **paragraph (461)**).

⁵³⁶ In Table 4 in the Response to the SO, Annex C.44. where the regression aim to identify a correlation between the number of bidders and HHI's margins, there is a weekly significant correlation between HHI's bid and the event that HHI win the bid.

⁵³⁷ In the Response to the SO, Annex C.44, Table 4. In Table 13 to Table 21, the Notifying presents alternative orderbooks to control for changes in demand: (i) the vessel types where HHI is active, (ii) HHI's own orderbook (for all vessel types) and (iii) the vessel classes used to build the base capacity for LLNGC. In all cases, the results remain unchanged; the orderbook is the only variable that shows a statistically strong correlation with HHI's expected gross margin in all specifications ([...] participation, the steel prices and the fact that HHI win the tender are also statistically significant in some of the specifications).

⁵³⁸ The respective p-values are between [5-10]% and [10-20]%

⁵³⁹ Table 7-9 in Annex 23 in the Response to the Second Letter of Facts. The results for the robustness checks presented in Annex A show the same pattern.

⁵⁴⁰ [...] participates in only [...] tenders up to 2014 and has since exited the market.

- (466) As a result, the absence of significant findings of correlation between the number and/or identity of bidders in a given tender and HHI's expected profit margin cannot be relied on as proof of absence of effects of competition.
- (467) For the reasons explained in the following paragraphs, the Commission considers that the failure to find meaningful relationship is likely due to the nature and quality of the data, which makes the exercise futile. This also explains why the Commission did not provide its own econometric analysis since based on the data and on the required econometric technique, a valid econometric analysis cannot be performed.
- (468) First, the number of bidders as registered in the data may not fully reflect the intensity of competition in a given tender because the number of bidders is determined by the design of the auction rather than the intensity of competition in the market. As the Parties own economic experts mention in the context of discussing the likely effects of the merger for tenders in which the only two bidders were DSME and HHI: *"it is unlikely that multilateral tenders in which only HHI and DSME compete would be bilaterally negotiated. The reason is that customers would be expected to maintain the procurement method ...they would have the ability to resort to alternative providers."*⁵⁴¹
- (469) Second, the data recording HHI's expected (gross) profit may not fully capture the intensity of HHI's response to competition. In the first place, it must be observed that the analysis is performed at the level of tender and considers the average profitability of vessels included in the tender⁵⁴² when the same tender could include a number of vessels with different prices and different margins. Therefore the Commission considered in the SO that this approach may not appropriately reflect the profitability obtained at the single vessels level. The Notifying Party replied in the Respose to the SO that since the competitive interaction takes place at the tender level, the analysis should be done at this level.⁵⁴³ As the Commission acknowledged in the SO, due to the nature of the data, the Parties have detailed information at the vessel level only for won projects. Therefore, due to the presence of only won vessels, the Notifying Party could not perform a conclusive analysis on the vessel level dataset and therefore had to base its analysis on the aggregated tender level data. In the second place, it must be observed that the bid of HHI may be responsive to competitive pressure in other dimensions than just expected profit margin (delivery time, financing options, quality etc.) as confirmed by the market investigation in **Section 8.3.2.2 (A)**.
- (470) Third, the overall dataset is not complete. In the analysis presented in the Annex G11 to the Reply to the Article 6(1)(c) decision, the Notifying Party relies only on about [...] of the total tenders ([...] ⁵⁴⁴ out of [...]) because the information on the mode of competition (whether a bilateral or multilateral tender) and the number of competitors is missing. In the Response to the SO, the Notifying Party argues that the available data are comparable with and representative of the overall sample.⁵⁴⁵ This is shown in the Annex C44 to the Response to the SO by comparing the number of projects, vessels, tender value and CGT by tender year for the sample with

⁵⁴¹ Para 7.19 of Annex G11.

⁵⁴² As explained in Section 2 of Annex Q2 of the Notifying Party's reply to QP3, the tender final price is an average of the price in the tender and the margins are computed based on this average value.

⁵⁴³ Response to the SO paragraph 971.

⁵⁴⁴ The number of observations drops at [...] when the dependent variable is either gross or profit margin.

⁵⁴⁵ Response to the SO, par 972.

information available to be included in the econometric analysis⁵⁴⁶ and the whole sample of LLNGC projects. The Commission notes that there is no firm evidence that sample is biased, but it is not possible to exclude that the incompleteness contributes to the lack of reliable results.

- (471) Fourth, in the submitted econometric model the reference category (omitted dummy) is the indicator variable for bilateral tender meaning that the impact of having one or more competitors is estimated versus the baseline of having a bilateral tender with only HHI invited. According to the Notifying Party, HHI's expected margins and bid prices are [...] in bilateral tenders than in multilateral tenders.⁵⁴⁷ However, there are only [...] confirmed bilateral tenders that are compared to [...] confirmed multilateral tenders. Given the very low number of bilateral tenders, it is likely that any difference in expected margins and price reflects unobserved differences in the characteristics of these very few bilateral tenders that are used as baseline. The low number of bilateral tenders results also in low variability in the data across the variables. This is problematic since the econometric techniques adopted by the Notifying Party requires the availability of a sufficiently rich dataset. Indeed, HHI always wins in the [...] bilateral tenders. Therefore, it is not possible to uniquely disentangle whether the price and margin are higher (even though not statistically significantly) due to HHI's winning or the absence of additional bidders.
- (472) In the Response to the SO, the analysis in Annex C44 is repeated on the LLNGC sample but excluding the [...] bilateral tenders and consider as reference category the tenders with two bidders, namely HHI and another shipbuilder without finding significant effects.⁵⁴⁸ In this case, [...] tenders with at least three shipbuilders are compared to [...] with only two shipbuilders. In terms of HHI winning, HHI wins in only [...] of these [...] tenders. Therefore, the limited data variation may also contribute to the absence of any statistically significant results from the estimates - including whether DSME's participation or the participation of other competitors in tenders is associated with lower prices and margins for HHI.
- (473) Fifth, the Commission considers that the regression analysis of the Notifying Party is not relevant to describe the competitive scenario, in particular in consideration of the LLNGC market in which the number of active competitors has changed significantly over time as shown in **Table 15** and **Table 16**. Whereas in 2009-2016 there were up to [...] competitors active in tenders for LLNGC, after 2016 the tender data of the Parties indicate that only [...] competitors ([...]) are bidding for LLNGC tenders in which the Parties also participate.
- (474) In the Response to the SO, the Notifying Party disagrees with the Commission claiming that there is no evidence that the average number of participants in a tender has changed over time.⁵⁴⁹ The Commission recalls that in multilateral LLNGC tenders in which HHI or DSME participated as shown in **Table 19** and **Table 20** the average number of competitors have decreased from above to below [...] in the period.
- (475) Sixth, the Commission notes that the Notifying Party tries to establish in its econometric specification a relationship between profitability (i.e. prices and

⁵⁴⁶ Tenders for which the number and identity of competitors is known as well as the result of the tender.

⁵⁴⁷ Response to the Article 6(1)(c) decision, Annex G11.

⁵⁴⁸ Response to the SO, Annex C.44, Table 7 to 9. Similar results are presented in Table 10 to 12 in Response to the Second Letter of Facts, Annex 23.

⁵⁴⁹ Response to the SO, Annex C.44, para. 2.26.

margins) and market concentration. The market concentration is approximated by the number of participants in a tender, the same figure that the Notifying Party claims to be an underestimation of the actual level of market concentration. However, the Commission's view is that, whilst the computed participation ratio (as presented in **Section 8.3.2.2 (C) d**) are not affected by this underestimation, as the estimated participation ratio can be interpreted in any case as a lower bound estimate, the econometric analysis of the Notifying Party suffers more from this uncertainty that fundamentally biases the relationships it aims to estimate.

(476) The Commission concludes that the failure to find a systematic relationship in the tender data analysis between HHI's profitability (i.e. prices and margins) and (i) the number of competitors participating in a tender and (ii) DSME's participation in a tender is likely due to the nature and quality of the underlying data. Thus, the absence of significant results from the tender data analysis does not support the Notifying Party's claim that there is no systematic relationship between structure (i.e. concentration) and profitability in the LLNGC market.

g) Evidence from the descriptive analysis of margins

(477) In its Response to the Article 6(1)(c) decision, the Notifying Party presented some descriptive analysis of the expected margin of HHI and argues that the HHI's expected margin in the tender data are consistently low and profit margin are often negative.⁵⁵⁰ Further, the Notifying Party indicated that the LNG market has relatively lower percentage margin (gross and profit margin) as compared to less concentrated segments, or segments in which the Parties have a lower combined market share. On this basis, the Notifying Party argues that the observed margins are not consistent with the view that concentration is a key driver of prices because, if that was the case, the segments of the shipbuilding market with higher concentration should be associated with higher margin.

(478) In its Response to the SO,⁵⁵¹ the Notifying Party presents further descriptive analysis of the distribution of the expected margin of HHI and argues that the distribution of margins is similar across segments. The Notifying Party argues that there is no indication that expected margins are consistently higher in the more concentrated segments. In addition, the Notifying Party presents a descriptive analysis of the expected margin of DSME and concludes, similar as for HHI's margin data, that the margin comparison among vessel types and classes provides no indication that expected margins differ significantly across vessel types and classes.

(479) In its Response to the Second Letter of Facts,⁵⁵² the Notifying Party provides an updated descriptive analysis of HHI's expected margins for the years 2009 to 2021. The Notifying Party argues from the descriptive analysis that expected margins for LLNGCs are consistently low and profit margins are often negative. On this basis and the observation that prices are highly correlated with underlying variable costs, the Notifying Party claims that this is consistent with its finding that the market is characterised by fierce competition.

(480) For the reasons explained in the following paragraphs, the Commission raises fundamental issues with the interpretation of the results done by the Notifying Party. In the Commission's view, the descriptive analysis of the margins expected by HHI

⁵⁵⁰ Response to the Article 6(1)(c) decision, Annex G11, Section 4.

⁵⁵¹ Response to SO, Annex C44, Section 3.

⁵⁵² Response to the Second Letter of Facts, Annex 23, Section 3.

and DSME is only useful to demonstrate that margins vary over time mainly due to changes in demand. The descriptive analysis only shows the distribution of margins across vessel types and classes, but does not establish a causal relationship between the concentration level in these segments and margins. As such, it is not possible to infer any conclusion on the likely impact of concentration on the margins of the merging parties.

- (481) First, the Commission notes that in general prices and margins are not only affected by concentration levels. For the purposes of the competitive assessment relevant to this case and to the LLNGC market specifically the relevant question to answer is whether the reduction in competition in the LLNGC market can lead to a price increase in the LLNGC market. On this basis, the comparison of margins across different vessel type may not be informative as this exercise is comparing margins across different markets that may well be characterised by different dynamics other than also having different levels of concentrations. Indeed, if the assumptions of the Notifying Party were to be true (high degree of supply substitution across vessels and high spare capacity) then margins across vessel type should all be close to zero. This is clearly contradicted by the actual evolution of margin as shown in **Figure 38** and **Figure 39** illustrates that for DSME the average LLNGC gross margin over the period 2011-2013 and in 2015 was significantly above the average margin obtained for VLGCs and other vessel types. Since 2017 the average VLGC gross margin is higher than the average gross margin for other vessel types and LLNGCs. These patterns might be explained by fluctuations in demand and potential cost variations.
- (482) Second, the Commission considers that the comparison of percentage margins across different vessel types may not offer a correct representation of production decisions of shipbuilders. Indeed, different vessel types differ significantly in terms of cost of production, workforce requirement, use of physical assets, recourse to external outsourcing or internal resources. On this basis it should not be expected that average or median margins would be equal across vessel types even if all markets had the same level of concentration.
- (483) The tender data of HHI and DSME provide further evidence that margin differs across vessel types and are volatile over time. **Figure 38** and **Figure 39** illustrate the development of the expected percentage gross margin⁵⁵³ for LLNGCs, VLGCs and other vessel types. **Figure 38** shows for HHI [...]. **Figure 39** illustrates that for DSME [...]. These patterns might be explained by fluctuations in demand and potential cost variations.

Figure 38 HHI's expected percentage gross margin

[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65 and RFI 67, Annex Q38.

⁵⁵³ The Commission considers the gross profit margin as a good metric for measuring how effective a company is at converting goods, materials and direct labor into profit, because it includes only the variable and fixed costs associated with producing the product. In a market with chronic overcapacity, as claimed by the Notifying Party, it is more meaningful to consider only direct fixed costs (related to the production of the product).

Figure 39 DSME's expected percentage gross margin

[...]

Source: Commission's calculations based on tender data submitted by the Parties in response to RFI 65 and RFI 67, Annex Q38.

(484) Third, the Commission notes that the descriptive analysis of the distribution of the expected margins among vessel types and classes of the merging parties is insufficient to support the conclusion that vessel margins among segments are not affected by market concentration. In the descriptive statistics, margins are averaged over ten year (2009-2019) and compared across vessel types and classes. The analysis presented by the Notifying Party across vessel types does not take into account the weight of the single vessel type and class in the overall portfolio of the shipbuilder.⁵⁵⁴ Finally, regardless of the metric used, the Commission does not consider this comparison across vessel types or classes to be relevant for assessing the relationship between concentration levels and margins especially if averaged over a long time period, in particular since the issue at hand is whether the increase in concentration after the transaction will lead to the creation of a dominant position in the market, which did not exist before.

8.3.2.3. Conclusions

(485) In light of the above, based on the market investigation, the Parties' internal documents and the Parties' tender data, the Commission concludes that HHI and DSME are each other's close competitors and the Transaction leads to the combination of two out of three (with SHI) very close competitors. In particular, the Commission considers that the closeness between the merging Parties reinforces the loss of the competitive constraint exerted by DSME as a result of the Transaction, thereby contributing to allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction and to reinforce the creation of a dominant position by the merged entity.

8.3.3. *HHI and DSME are both important innovators*

(486) The Commission finds in this Section, that innovation is an important competitive force in the LLNGC market and that HHI and (especially) DSME are both important innovators (with SHI). The Commission's assessment shows that neither CSSC nor the Japanese are able nowadays nor in the future to exert a sufficient constraint on the Parties. For these reasons, the Transaction would allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction, leading to the creation of a dominant position.

8.3.3.1. The Notifying Party's views

(487) In the Response to the Article 6(1)(c) decision, the Notifying Party argued that neither of the Parties is an important innovator as innovative technologies would be usually developed by upstream suppliers and thus innovation cannot be an important competitive force or important parameter of competition.⁵⁵⁵

(488) In the Response to the SO, the Notifying Party argued that the Commission would have failed to show that innovation is an important competitive force or an important

⁵⁵⁴ Response to the Article 6(1)(c) decision, Annex G11, Section 4 and Response to SO, Annex C44, Section 3.

⁵⁵⁵ Response to the Article 6(1)(c) decision, paragraphs 315-319.

parameter of competition as LLNGCs are not a differentiated market and that the Parties would stand out in terms of innovative technologies.⁵⁵⁶

- (489) In the Response to the First Letter of Facts, the Notifying Party maintains that innovation is not an important parameter of competition in the LLNGC market and that, in particular, there would be no link between innovation being an important parameter of competition in the LLNGC market and a dominance theory of harm.⁵⁵⁷ The Notifying Party further argues that the patent analysis would be incorrect as such analysis would not support the finding that HHHH and DSME are more important innovators, other innovation-related observations would be based on a selective reading of evidence and misunderstanding of LLNGC technologies and the Commission would still continue to ignore the evidence in its file demonstrating that other shipbuilders' innovation efforts are no less important than HHHH's and DSME's.⁵⁵⁸
- (490) In the Response to the Second Letter of Facts, the Notifying Party reiterates its criticism of the (updated) patent analysis conducted by the Commission. The Notifying Party argues that innovation is an overstated parameter of competition in the LLNGC market.⁵⁵⁹ In addition, the Commission would have incorrectly analysed patent data ignoring the importance of third-party source technology providers.⁵⁶⁰ Finally, the Commission would ignore evidence demonstrating that other shipbuilders' innovation efforts are no less important than HHHH's and DSME's.⁵⁶¹

8.3.3.2. The Commission's assessment

- (491) The Commission finds that innovation is an important competitive force⁵⁶² in the LLNGC market and that the Parties (especially DSME) are both important innovators. Furthermore, the Commission finds that CSSC (Hudong) exerts neither a sufficient nor a significant competitive constraint and that Japanese shipbuilders do not exert a meaningful competitive constraint, while barriers to entry or expansion are high. These findings are supported by the Commission's patent data analysis and the market investigation.
- (492) For the reasons outlined below in this Section and combined with the Commission's findings presented in **Section 8.3.1** and **Section 8.3.2**, the fact that innovation is an important competitive force in the LLNGC market and that the Parties (especially DSME) are important innovators are likely to allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction, thereby contributing to the creation of a dominant position.

⁵⁵⁶ Response to the SO, paragraphs 926-935, 1041-1043.

⁵⁵⁷ Response to the First Letter of Facts, paragraphs 232-250.

⁵⁵⁸ Response to the First Letter of Facts, paragraphs 234-250

⁵⁵⁹ Response to the Second Letter of Facts, paragraph 235.

⁵⁶⁰ Response to the Second Letter of Facts, paragraphs 256-259.

⁵⁶¹ Response to the Second Letter of Facts, paragraphs 260-273.

⁵⁶² Horizontal Merger Guidelines, paragraph 38. For the purpose of this Section and of this Decision, the concept of "innovation as an important competitive force" includes and covers the concept of "innovation as an important parameter of competition".

- (A) The Parties feature among the top players in terms of patent relevance
- (493) The Commission analysed the patent activity of the Parties and of the other shipbuilders active in the LNGC area in the past 10 years.⁵⁶³ As pointed out in the previous paragraphs, innovation is an important competitive force and both Parties are important innovators as they made constant yearly investments in R&D, despite the negative operating profits in certain years.⁵⁶⁴ As to the argument of the Notifying Party,⁵⁶⁵ which claims that [...], the Commission refers to **Section 8.2**, where the Commission found that, absent the Transaction, DSME would likely continue to exercise competitive pressure in the market for LLNGCs and that, for the purpose of the assessment of the Transaction, the relevant counterfactual is head to head competition between the Parties in the LLNGC market.
- (494) The purpose of this patent analysis is not to compare shipbuilders' patents with each other but to provide an overview of (i) the technological importance of each shipbuilder's LNG-related patents and (ii) their number. Therefore, the Commission extracted detailed patent data from the PatentSight platform⁵⁶⁶ on 16 April 2021 and included the analysis in the First Letter of Facts⁵⁶⁷. The analysis has been updated on 10 and 15 September 2021 and included in the Second Letter of Facts.⁵⁶⁸ It is presented below.
- (495) At the outset, the Commission selected the shipbuilders to include in its analysis, beyond the Parties, by identifying all the shipbuilders that appeared in the Parties tender data^{569 570} as having participated in tenders for LNGCs since 2009, regardless of their size.^{571 572} Then, the Commission filtered the universe of patents held by these entities on the basis of specific keywords contained in the abstract, title or in

⁵⁶³ On this, see the information provided by the Notifying Party in Annex CS 8.59 and Annex CS 8.60, which provide an overview of DSME's and HHI's R&D. See also the updated version of these annexes, provided in the Notifying Party's reply to question 19 of RFI 67, Annexes Q19.1 and Q19.2.

⁵⁶⁴ In the period 2013-2021 (as of 30 June 2021), HHI invested on average [...] of its revenues into R&D, while DSME [...]. These investments have been relatively stable over the years, equal to or above [...] yearly in 2013-2020 for HHI and equal to or above [...] yearly in 2013-2020 for DSME (Form CO, paragraph 82, updated in the Notifying Party's reply to question 18 of RFI 67). Contrary to what argued by the Notifying Party in its reply to question 18 of RFI 67, even if it were correct that the Chinese government had set a revenue target for R&D expenditure in the shipbuilding industry of minimum [...], the Commission's assessment would not change. Indeed, the Commission notes that a target is different from actual expenditure. Moreover, the Commission notes that the relevance of the percentage of revenue for R&D investments cannot be taken in isolation but needs to be read in conjunction with all the other elements that are part of the Commission's assessment and that show that the Parties are important innovators, that innovation is an important parameter of competition and that the Proposed Transaction would lead to the creation of dominance in the worldwide market for LLNGCs.

⁵⁶⁵ The Notifying Party's Response to the First Letter of Facts, paragraph 244.

⁵⁶⁶ LexisNexis PatentSight platform provides insights into the patent landscape by checking for legal status and ownership and evaluating patent families to construct quality indicators. The bibliographic data coverage is the European Patent Office's database DOCDB.

⁵⁶⁷ First Letter of Facts, paragraphs 84-97.

⁵⁶⁸ PatentSight periodically updates patent data including the latest ones and reviewing the active families.

⁵⁶⁹ Tender data submitted on 25 September in response to RFI 46.

⁵⁷⁰ [...].

⁵⁷¹ Small LNGC and mid-sized LNGCs are very tiny markets, with nearly all small LNGCs using a different technology. By including all LNGCs regardless of size, the Commission's analysis retrieves all relevant LLNGCs patents.

⁵⁷² In some instances, PatentSight reports both [...] and [...] as owner of the same patents, the Commission allocates these patents to the joint ventures between the two shipbuilders. In a few others, the patents allocated to [...] and [...] are assumed to be held by [...], however the assessment would not change.

the claims of the patents.⁵⁷³ To evaluate the technological importance of the different patents, the Commission used the Technology Relevance® metric. This metric is computed from the number of worldwide prior art citations received from later patents.⁵⁷⁴ ⁵⁷⁵ Therefore, a higher value of Technology Relevance® implies that the patent is more valuable for subsequent technological development than an average patent in a specific technology field. The Commission uses this metric to rank the patents that are responsive to the same selection of keywords. Then the Commission looks at the first 100 patents and assesses the relative weight of each shipbuilder within these patents. Further, the Commission cumulates the Technology Relevance® score of all patents, responsive to the selected keywords, by shipbuilders to then compute an overall relative importance share across all patents. Notably the two metrics would provide different results in case a shipbuilder has a disproportionate number of patents in the tail of less important patents. In the following, the Commission presents different search results on the basis of four different combinations of keywords relevant to innovation in the (L)LNGC sector.

- (496) As this analysis⁵⁷⁶ is based on keyword searching, the results are sensitive to the shipbuilders' wording in the patent filing. Hence, while **Table 24** and **Table 25** provide an overview, **Table 26**, **Table 27** and **Table 28** are based on keywords for technologies that are (L)LNGC-specific⁵⁷⁷ as presented by the Notifying Party⁵⁷⁸ The Notifying Party identified [...] patents in the technology classes (L)LNGC-specific⁵⁷⁹ for KSOE/HHI and [...] for STX.⁵⁸⁰ The keyword search for the three (L)LNGC-specific technologies produced [...] patents for HHI and [...] for STX, while performing the same search also in the description of the patents produced [...] results for HHI and [...] for STX.⁵⁸¹ This indicates that this method produces a reasonably good proxy for the overall patent portfolio.
- (497) The Notifying Party identifies [...] technology types⁵⁸² that, according to the Notifying Party, are applicable to different vessel types and therefore not only specific for LLNGCs ((L)LNGC-relevant). The Commission considers, however, that these technologies are to be considered as LLNGC-relevant as they are important to compete in the LLNGC market. The patents owned by HHI and STX relative to these types are [...] and [...] respectively.⁵⁸³ For completeness, **Table 29** is based on patents responsive to keywords for these technology types and

⁵⁷³ [...] is not included in the sample as the analysis is focussed on shipbuilders.

⁵⁷⁴ As explained in the Knowledge Base of Lexis Nexis®.

⁵⁷⁵ The number of citations is corrected for the age of the patent family, the citation practice of the citing patent office and the technology field of the patent family, as explained by LexisNexis.

⁵⁷⁶ All shares in the tables are rounded.

⁵⁷⁷ The Parties provide a list of LNGC specific patents, however as explained in the SO, small and mid-sized LNGCs are very tiny markets (almost [...] of LNGC above 40 000m³ are larger than 145 000m³), therefore, the keywords retrieve mostly LLNGCs.

⁵⁷⁸ Annex 11 of the Updated Technology sharing working document [DOC ID:4612] and Annex 8 of the Updated Technology sharing working document [DOC ID:4609].

⁵⁷⁹ The LLNGC-specific technology classes are: cargo containment system, re-gasification and re-liquefaction.

⁵⁸⁰ Excluding LLNGC-specific patents from the technology type "Other". Including this additional technology type the Notifying Party identified [...] additional patents for KSOE/HHI and [...] for STX.

⁵⁸¹ The keywords used are: "(cargo SEQ1 containment SEQ1 system) OR re-liquefaction OR reliquefaction OR re-gasification OR regasification."

⁵⁸² The LLNGC-relevant technology classes are: fuel gas supply system, ICE, ESD, air lubrication (ALS), propulsion technology, selective catalytic reduction (SCR).

⁵⁸³ Excluding LLNGC specific patents from the technology type "Other". Including this additional technology type the Notifying Party identified [...] patents for KSOE/HHI and [...] for STX.

LLNGC/FSRUs. The keyword search produced [...] patents for HHI and [...] for STX, while searching also in the patents' description produced [...] for HHI and [...] for STX. The Commission acknowledges that this analysis is less certain and should be interpreted with more caution. However, the Commission considers the analysis on LLNGC-specific patents to be sufficiently indicative to confirm that innovation is an important competitive force in the LLNGC market.

- (498) **Table 24** shows the results when searching, in the active⁵⁸⁴ patents' title, abstract and/or claims, the following keywords: "liquefied natural gas" combined with "vessel" or "carrier" or "ship"; or "LNG" combined with "vessel" or "carrier" or "ship"; or "FSRU"; or "Floating Storage and Regasification Unit".⁵⁸⁵ The total number of patents retrieved from this search is [...]. The second column of the table shows how the top [...] patents by Technological Relevance® are distributed across shipbuilders. The third column shows the shares by shipbuilder of the cumulated Technology Relevance® scores across all the [...] patents.⁵⁸⁶
- (499) Both metrics provide a similar picture. DSME, with both shares in excess of [40-50]%, is the shipbuilder with the most relevant patents for this selection of keywords. The gap with the other shipbuilders is substantial as DSME is followed by SHI ([10-20]% and [10-20]%), HHI ([10-20]% and [10-20]%) and CSSC ([0-5]% and [10-20]%). The only Japanese shipbuilders that are singled out are MHI ([5-10]% and [0-5]%), Mitsui ([5-10]% and [0-5]%) and KHI ([5-10]% and [0-5]).⁵⁸⁷

Table 24 Patents relevance share for keywords: "liquefied natural gas" combined with "vessel" or "carrier" or "ship"; or "LNG" combined with "vessel" or "carrier" or "ship"; or "FSRU"; or "Floating Storage and Regasification Unit"

Shipbuilder owner	Share of patents included in the top 100 sorted by Technological Relevance	Share of the total score of Technology Relevance
DSME	[40-50]%	[40-50]%
SHI	[10-20]%	[10-20]%
HHI	[10-20]%	[10-20]%
MHI	[5-10]%	[0-5]%
Mitsui	[5-10]%	[0-5]%
STX	[0-5]%	[0-5]%
CSSC	[0-5]%	[10-20]%
KHI	[0-5]%	[0-5]%
CIMC	[0-5]%	[0-5]%
Others (China Merchants, COSCO's DACKS/NACKS, Keppel, JMU,		[0-5]%

⁵⁸⁴ Belonging to patent families with at least one active member, which can be either a pending application or a granted patent.

⁵⁸⁵ The keywords used are "(((lng OR (liquified SEQ1 natural SEQ1 gas)) AND (carrier OR ship OR vessel)) OR FSRU OR (floating SEQ1 storage SEQ1 regasification SEQ1 unit))".

⁵⁸⁶ The total value of Technology Relevance across all [...] patents is [...].

⁵⁸⁷ By searching for the same keywords in the title, claims, abstract and description of the patents for the same shipbuilders, the ranking of shipbuilders with the highest shares do not change respectively for the top [...] by Technological relevance and in the entire sample ([...] patents) and: DSME ([30-40]% and [30-40]%), SHI ([20-30]% and [30-40]%), HHI ([20-30]% and [10-20]%), CSSC ([0-5]% and [5-10]%), MHI ([0-5]% and [5-10]%), followed by more distant competitors with both shares below [5-10]%).

Shipbuilder owner	Share of patents included in the top 100 sorted by Technological Relevance	Share of the total score of Technology Relevance
Sungdong, Hanjin, Imabari)		
Total number of patents	100	[...]

Source: Commission's computations based on PatentSight data extracted on 10/09/2021

(500) **Table 25** shows the active patents whose title, abstract or claim include the words “liquefied natural gas” combined with “vessel or carrier or ship” and “tank”; or “LNG combined with “vessel or carrier or ship” and “tank”; or “FSRU” combined with “tank”; or “Floating Storage and Regasification Unit” combined with “tank”.⁵⁸⁸ ⁵⁸⁹ Under this selection DSME ranks again as the first for patent relevance ([40-50]% and [40-50]%), and it is followed by SHI ([20-30]% and [20-30]%) and HHI ([10-20]% and [10-20]%), MHI ([5-10]% and [0-5]%), STX ([0-5]% and [0-5]%) and CSSC ([0-5]% and [5-10]%). All the other shipbuilders have share of equal or less than [5-10].⁵⁹⁰ In the Response to the First Letter of Facts, the Notifying Party highlights that the search analysed in Table 19 of the First Letter of Facts might include also patents related to small or medium sized LNGCs which have Type-B⁵⁹¹ and Type-C tanks. The exclusion of these [...] patents⁵⁹² (5% of the previous search) does not alter the Commission's overall conclusion⁵⁹³ The conclusion of the analysis excluding these [...] patents⁵⁹⁴ ([5-10]% of the previous search) do not change⁵⁹⁵.

⁵⁸⁸ The keywords used are “((lng OR (liquified SEQ1 natural SEQ1 gas) OR FSRU OR (floating SEQ1 storage SEQ1 regasification SEQ1 unit)) AND tank)”.

⁵⁸⁹ The total value of Technology Relevance across all [...] patents is [...].

⁵⁹⁰ By searching for the same keywords in the title, claims, abstract and description of the patents for the same shipbuilders, the ranking of shipbuilders with the highest shares does not change respectively for the top 100 by Technological Relevance and the entire sample ([...] patents): DSME ([30-40]% and [30-40]%), SHI ([20-30]% and [20-30]%), HHI ([20-30]% and 174%), MHI([0-5]% and [0-5]%), STX ([0-5]% and [0-5]%) and CSSC ([0-5]% and [5-10]%), followed by more distant competitors with both shares below [5-10]%).

⁵⁹¹ As apparent from the Clarksons database, Japanese shipbuilders (which, for the reasons outlines in **Section 8.3.4.3**, do not and will not exert a meaningful competitive constraint on the Parties), have built LLNGCs using almost exclusively Type-B technology. The Commission conservatively include also Type-B in the tables presented in this Section.

⁵⁹² The keywords used are “NOT ((type SEQ1 b) OR (type SEQ1 c)) AND ((lng OR (liquified SEQ1 natural SEQ1 gas) OR FSRU OR (floating SEQ1 storage SEQ1 regasification SEQ1 unit)) AND tank)”. The Commission however remarks that some of these [...] patents may also refer to membrane type LLNGCs.

⁵⁹³ By searching for these keywords in the title, claims, abstract of the patents for the same shipbuilders, the shares respectively in the top [...] and in the entire sample are: DSME ([40-50]% and [40-50]%), SHI ([10-20]% and [20-30]%), HHI([10-20]% and [10-20]%), MHI ([5-10]% and [0-5]%), STX ([0-5]% and [0-5]%), KHI ([0-5]% and [0-5]%), CSSC ([0-5]% and [5-10]%), Mitsui ([0-5]% and [0-5]%), Sembcorp ([0-5]% and [0-5]%), JMU ([0-5]% and [0-5]%). Keppel, Sungdong and Imabari have together a share of less than 0,3% in the entire sample and do not figure in the top [...] by Technology Relevance.

⁵⁹⁴ The keywords used are “NOT ((type SEQ1 b) OR (type SEQ1 c)) AND ((lng OR (liquified SEQ1 natural SEQ1 gas) OR FSRU OR (floating SEQ1 storage SEQ1 regasification SEQ1 unit)) AND tank)”. The Commission however remarks that some of these [...] patents may also refer to membrane type LLNGCs.

⁵⁹⁵ By searching for these keywords in the title, claims, abstract of the patents for the same shipbuilders, the shares respectively in the top 100 and in the entire sample are: DSME ([40-50]% and [40-50]%), SHI ([10-20]% and [20-30]%), HHI([10-20]% and [10-20]%), MHI ([5-10]% and [0-5]%), STX ([0-5]% and [0-5]%), KHI ([0-5]% and [0-5]%), CSSC([0-5]% and [5-10]%), Mitsui ([0-5]% and [0-5]%), Sembcorp ([0-5]% and [0-5]%), JMU ([0-5]% and [0-5]%). Keppel, Sungdong and Imabari have

Table 25 Patents relevance share for keywords: “liquefied natural gas” combined with “tank”; or “LNG” combined with “tank”; or “FSRU” combined with “tank”; or “Floating Storage and Regasification Unit” combined with “tank”

Shipbuilder owner	Share of patents included in the top 100 sorted by Technological Relevance	Share of the total score of Technology Relevance
DSME	[40-50]%	[40-50]%
SHI	[0-5]%	[20-30]%
HHI	[10-20]%	[10-20]%
MHI	[5-10]%	[0-5]%
STX	[0-5]%	[0-5]%
CSSC	[0-5]%	[5-10]%
Mitsui	[0-5]%	[0-5]%
KHI	[0-5]%	[0-5]%
CIMC	[0-5]%	[0-5]%
JMU	[0-5]%	[0-5]%
Sembcorp	[0-5]%	[0-5]%
Others (China Merchants, Keppel, COSCO's DACKS/NACKS, Yangzijiang, Sungdong, Inabari)		[0-5]%
Total number of patents	100	[...]

Source: Commission's computations based on PatentSight data extracted on 10/09/2021

(501) Then the Commission focused on patents related to (L)LNGC-specific technology types.⁵⁹⁶ **Table 26** shows the results when searching, in the patents' title/abstract/claim, the following keywords: “re-liquefaction” or “reliquefaction”.⁵⁹⁷ The total number of patents retrieved from this research is [...]. Under this search, DSME is the shipbuilder with the most relevant patents for this technology type ([50-60]% among the top [...] for Technological Relevance and [50-60]% overall). Both metrics show that there is a substantial gap with SHI ([20-30]% and [10-20]%) and HHI ([10-20]% and [10-20]%), which are then followed by shipbuilders with less relevant patents.^{598 599}

together a share of less than [0-5]% in the entire sample and do not figure in the top [...] by Technology Relevance.

⁵⁹⁶ Responses to experts' initial questions on Topics 2, 3 and 5. [DOC ID:4807]

⁵⁹⁷ The keywords used are “re-liquefaction OR reliquefaction”. The total value of Technology Relevance across the [...] patents is [...].

⁵⁹⁸ By searching for the same keywords in the title, claims, abstract and description of the patents for the same shipbuilders, the ranking of shipbuilders with the highest shares do not change respectively for the top [...] by Technological relevance and for the entire sample ([...] patents): DSME ([40-50]% and [50-60]%), HHI ([20-30]% and [20-30]%), SHI ([10-20]% and [10-20]%), MHI ([5-10]% and 54) followed by more distant competitors with both shares below [5-10]%.

⁵⁹⁹ If the keywords used are “((Lng OR (liquified SEQ1 natural SEQ1 gas) OR FSRU OR (floating AND storage AND regasification AND unit)) AND (reliquefaction OR re-liquefaction))” a subsample of [...] patents is retrieved. The ranking of shipbuilders with the highest shares respectively for the top [...] by Technological relevance and for the entire sample ([...] is: DSME ([60-70]% and [70-80]%), SHI ([10-20]% and [5-10]%), MHI ([5-10]% and [5-10]%), HHI ([5-10]% and [5-10]%) and STX ([0-5]% and [5-10]%) followed by more distant competitors with both shares below [5-10]%. If the same search is performed also based on the patents' descriptions the ranking of shipbuilders with the highest shares

Table 26 Patents relevance share for keywords: “re-liquefaction” or “reliquefaction”

Shipbuilder owner	Share of patents included in the top 100 sorted by Technological Relevance	Share of the total score of Technology Relevance
DSME	[50-60]%	[50-60]%
SHI	[20-30]%	[10-20]%
HHI	[10-20]%	[10-20]%
MHI	[0-5]%	[0-5]%
STX	[0-5]%	[0-5]%
Mitsui	[0-5]%	[0-5]%
JMU	[0-5]%	[0-5]%
KHI	[0-5]%	[0-5]%
CIMC	[0-5]%	[0-5]%
CSSC	[0-5]%	[0-5]%
Total number of patents	100	[...]

Source: Commission’s computations based on PatentSight data extracted on 10/09/2021

(502) **Table 27** shows the results when searching, in the patents’ title/abstract/claim, the following keyword: “re-gasification” or “regasification”.⁶⁰⁰ The total number of patents retrieved from this research is [...]. In this case, SHI is the shipbuilder with the largest share of patents in the top [...] ([30-40]% and [30-40]% in the overall sample) but DSME is the one with the largest share in the overall sample ([30-40]% and [20-30]% in the top [90-100]%) followed in both metrics by HHI ([10-20]% in the top [...] and [20-30]% in the entire sample). Both metrics show that there is a substantial gap with the other shipbuilders with less relevant patents.^{601 602}

600 respectively for the top [...] by Technological relevance and for the entire sample ([...] patents) is: DSME ([40-50]% and [50-60]%), SHI ([10-20]% and [10-20]%), HHI ([20-30]% and [20-30]%), MHI ([5-10]% and [0-5]%) followed by more distant competitors with both shares below [5-10]%.
 601 The keywords used are “re-gasification OR regasification”. The total value of Technology Relevance across the [...] patents is [...].

602 By searching for the same keywords in the title, claims, abstract and description of the patents for the same shipbuilders, the ranking of shipbuilders with the highest shares do not change respectively for the top [...] by Technological relevance and for the entire sample ([...] patents): DSME ([40-50]% and [40-50]%), SHI ([30-40]% and [30-40]%), HHI ([10-20]% and [10-20]%) followed by more distant competitors with both shares below [5-10]%.
 603 If the keywords used are “((Ing OR (liquified SEQ1 natural SEQ1 gas) OR FSRU OR (floating SEQ1 storage SEQ1 regasification SEQ1 unit)) AND (regasification OR re-gasification))” a subsample of [...] patents is retrieved. The ranking of shipbuilders with the highest shares respectively for the top [...] by Technological relevance and for the entire sample is: DSME ([40-50]% and [40-50]%), SHI ([20-30]% and [30-40]%), HHI ([5-10]% and [5-10]%), and STX ([5-10]% and [0-5]%) followed by more distant competitors with both shares below [5-10]%. If the same search is performed also based on the patents’ descriptions the ranking of shipbuilders with the highest shares respectively for the top [...] by Technological relevance and for the entire sample ([...] patents) is: DSME ([40-50]% and [40-50]%), SHI ([30-40]% and [30-40]%), HHI ([10-20]% and [10-20]%) followed by more distant competitors with both shares below [5-10]%.
 604

Table 29 Patents relevance share for keywords referred to the technology types: “fuel gas supply system” (“FGSS”), “ICE”, “emergency shutdown system” (“ESD”), “air lubrication system” (“ALS”), “propulsion technology”, “selective catalytic reduction” (“SCR”)

Shipbuilder owner	Share of patents included in the top 100 sorted by Technological Relevance	Share of the total score of Technology Relevance
SHI	[20-30]%	[20-30]%
HHI	[20-30]%	[10-20]%
MHI	[10-20]%	[10-20]%
DSME	[10-20]%	[20-30]%
CSSC	[5-10]%	[10-20]%
Mitsui	[0-5]%	[0-5]%
COSCO's DACKS/NACKS	[0-5]%	[0-5]%
KHI	[0-5]%	[0-5]%
CIMC	[0-5]%	[0-5]%
JMU	[0-5]%	[0-5]%
Others (STX, China Merchant, Sembcorp, United, , Imabari, Keppel, Jiangsu Hantong)		[0-5]%
Total number of patents	100	[...]

Source: Commission's computations based on PatentSight data extracted on 15/09/2021

- (505) In light of the above, the Commission considers that the patent data shows that the Parties (especially DSME) feature among the top shipbuilders in terms of patent relevance for the selected keywords. Such patent data is consistent with the market share data based on orders, as patent data also confirm that the main shipbuilders active in the LLNGCs market are the Parties and SHI. Indeed, such patent data confirms (as explained in **Section 8.3.4.2**) that CSSC does not sufficiently constrain the merged entity to counteract the likely negative effects of the Transaction and that Japanese shipbuilders do not either constrain the Parties to a meaningful extent nowadays, while none of them will be able to exert a sufficient competitive constraint on the Parties post-Transaction. Moreover, as explained in **Section 8.3.8.3**, the marginal presence in terms of patented technology of other shipbuilders further confirms that the barriers to entry or expansion are high.
- (506) Such patent data is also consistent with the results of the market investigation described in the subsequent **Subsection 8.3.3.2 (B)**, namely that DSME is the more innovative of the merging Parties, and shows that DSME is the most innovative LLNGC shipbuilder. As explained in more detail below, DSME delivered, amongst others, the first Arc7 ice-breaker LLNGC ever in 2016 (and currently is the only shipbuilder having delivered this type of LLNGCs) and the first LLNGC equipped with its in-house air lubrication system (aimed at reducing water resistance and therefore up about 5% of fuel savings) in November 2019. Moreover, as explained below and as confirmed by additional data submitted by the Notifying Party,⁶¹⁰ [...].

⁶¹⁰ The Notifying Party reply to RFI 59, Annex Q4. See the Notifying Party's reply to question 26 of RFI 67, Annex Q26.3.

- (507) Contrary to the Notifying Party's submissions according to which^{611, 612} HHI and DSME would not be important innovators the Commission wishes to observe the following.
- (508) First, as outlined at the outset, the purpose of the presented patent analysis is to provide an overview of (i) the technological importance of each shipbuilder's (L)LLNGC-related patents and (ii) their number. The fact that the patents held by the Parties are allegedly not Standard Essential Patents (SEPs) does not imply that the Parties (especially DSME) are not important innovators. On the contrary, as explained in **Section 8.3.3.2 (B)**, the market investigation results show that the Parties (especially DSME) are important innovators in the LLNGC market. Moreover, as submitted by the Parties in Annex 39 to the Response of the First Letter of Facts, there are allegedly no SEP related to the shipbuilding industry or LNG, which means that it is irrelevant whether the Parties' patents are SEP or not.
- (509) Second, the Notifying Party argues that the share of patents in top 100 does not necessarily provide insight into quality and scope of technology covered by patents as Technology Relevance does not take into account of the number or importance of claim made for each patent.⁶¹³ As explained in **paragraph (495)** of this Decision, the Technology Relevance metric® is based on forward citations. Therefore, patents significant for technical development in a field will be cited more often as prior art and will have a higher score. This should reflect the importance of claims of the prior art patent.
- (510) Third, in response to the criticism of using inaccurately the key words,⁶¹⁴ the Commission addressed the specific points in the previous paragraphs of this Section. The keywords used and their abbreviations were provided by the Notifying Party as explained in **paragraph (496)** and the Commission searched only for patents owned by shipbuilders who bid in LLNGC tenders. Furthermore, the conclusions are drawn from searches and analyses repeated for several different keyword in order to minimize any inaccuracy linked to a specific keyword.
- (511) Fourth, the Notifying Party argues that the Technology Relevance metric® does not take into account whether the patented technology is used in practice. The Commission reiterates that the purpose of this patent analysis is to provide an overview of (i) the technological importance of each shipbuilder's LNG-related patents and (ii) their number.
- (512) Fifth, in response to the Notifying Party's argument that the patent analysis would show that patents do not constitute a barrier to entry in the LLNGC market as CSSC would effectively constrain the Parties even though it holds a smaller share of patents, the Commission refers to **Section 8.3.4.2** and **Section 8.3.8**. In the former, the Commission found that CSSC does not exert a sufficient or significant competitive constraint on the Parties and that this is unlikely to change in the near future. In the latter, the Commission found that (innovative) technologies are a high barrier to entry. In the Response to the First Letter of Facts, the Notifying Party argues that such patent analysis would highlight contradictions in the Commission's understanding of the LLNGC market.⁶¹⁵ Indeed, while Japanese shipbuilders

⁶¹¹ Response to the First Letter of Facts, paragraph 234.

⁶¹² Response to the Second Letter of Facts, paragraphs 255-273.

⁶¹³ Response to the First Letter of Facts, paragraph 234.

⁶¹⁴ Response to the First Letter of Facts, paragraph 234.

⁶¹⁵ Response to the First Letter of Facts, paragraph 22.

consistently appear at the bottom of the various patent relevance lists, they would, at the same time, be widely regarded as being on par with Korean shipbuilders in terms of technology by the market investigation. The Notifying Party specifically refers to question 38 of Q3 to Customers and to question 32.8 of Q8 to Customers. The Commission considers that such observations cannot be retained for the following reasons.

- (513) First, as explained in **paragraph (494)**, the purpose of this patent analysis is not to compare shipbuilders' patents with each other but to provide an overview of (i) the technological importance of each shipbuilder's LNG-related patents and (ii) their number. Second, the conclusions that the Commission draws are that (i) HHI and (especially) DSME are important innovators, (ii) that such patent analysis is consistent with market share data as it also confirms that the main shipbuilders active in the LLNGCs market are the Parties and SHI. Furthermore, (iii) the patent analysis confirms other elements of the analysis on the basis of which the Commission reaches the conclusion that, taken as a whole, neither CSSC (see **Section 8.3.4.2**) nor the Japanese (see **Section 8.3.4.3**) are able nowadays nor in the future exert a sufficient constraint on the Parties. Moreover, (iv) it further confirms that barriers to entry and expansion are very high (see **Section 8.3.8**). The evidence that Japanese shipbuilders consistently appear at the bottom of the various patent relevance lists confirms, as further explained in **Section 8.3.4.3**, that Japanese shipbuilders, which are overall less flexible and have been mostly focusing on non-membrane containment system technologies, offer a less attractive technology for customers.
- (514) Indeed, in response to the Notifying Party's argument on the alleged contradiction between the Commission's patent analysis and customers' reply to question 38 of Q3 to customers reported in the above paragraphs, the Commission notes that in question 38 of Q3 to customers,⁶¹⁶ the Commission asked customers to provide a comparison between Japanese and Korean LLNGC shipbuilders. Of the [...] customers that provided a meaningful opinion on how Koreans and Japanese shipbuilders compare on quality, [...] stated that Japanese are equal to Koreans; [...] said better than Koreans and [...] that they are less good than Koreans. Of the [...] customers that provided a meaningful opinion on how Japanese and Koreans compare on know-how, [...] said better than Koreans, [...] said equal to Koreans, [...] less good and [...] significantly worse. However, of the [...] customers that provided a meaningful response on how Japanese shipbuilders and Koreans compare on flexibility in design and specifications, [...] said significantly worse, [...] said less good and only [...] said equal. Moreover, of the [...] customers that provided a meaningful opinion on how Koreans and Japanese compare on technical design, [...] said less good than Koreans, [...] said equal and only [...] said better than Koreans. In addition, in question 32.8 of Q8 to Customers,⁶¹⁷ the Commission asked customers to indicate names of the relevant shipbuilders in terms of technological specification. Of the [...] customers that provided a meaningful opinion, [...] mentioned Japanese shipbuilders. However, this reply should be read in context, i.e. that Japanese shipbuilders have almost exclusively focussed on non-membrane equipped LLNGCs. Indeed, of these [...] customers only [...] (both Japanese) ordered from Japanese shipbuilders since 2004: [...] (last order from a Japanese shipbuilder in 2015), [...] (last order from a Japanese shipbuilder in 2015).

⁶¹⁶ Replies to question 38 of Q3 to Customers [DOC ID: 3244].

⁶¹⁷ Replies to question 32.8 of Q8 to Customers [DOC ID: 3241]

- (B) The results of the market investigation confirms that innovation is an important competitive force⁶¹⁸ in the LLNGC market and that the Parties (especially DSME) are both important innovators.
- (515) The Commission’s finds, based on the results of the market investigation, that innovation is an important competitive force in the LLNGC market (point 1 to 6 below)⁶¹⁹ and that, as already shown by the Commission’s patent analysis in the above **Section 8.3.3.2 (A)**, that both Parties (especially DSME) are important innovators (point 7 to 11 below)⁶²⁰ for the following reasons.
- (516) First, a majority of customers that expressed an opinion consider that innovations have pushed shipbuilders to innovate.⁶²¹ For example, one customer stated that “[d]esign department of each shipyard in cooperation with model tests and other [...] computational fluid dynamics try to improve available technology and provide innovations to the LNG carriers shipbuilding market [es]pecially in fields of hull form, optimi[s]ation and energy devices (targeting fuel consumption reduction), more friendly environmental footprint [...], better utili[s]ation of LNG vapours (either by lower BOR or reliq[efaction] systems). Better performance monitoring (smart ships) and securing the data from malware (cybersecurity). All the above provide an advantage of these shipyard making them more competitive in the market”.⁶²² Another customer stated that “[...] DSME, HHI and SHI have demonstrated that they have used innovation to push improvemnent across the industry through the Q[F]lex and QMax programme”.⁶²³
- (517) Second, innovation takes place in a number of areas of LNGCs shipbuilding such as: LNG cargo tank design and insulation (leading to improvements in boil off rate, which, together with the vessel speed, has a significant impact on the cost/effectiveness of the vessel), LNG fuel tanks and FGSS, improvements in hull design, improvements in propulsion systems, in particular in the area of two-stroke slow speed dual fuel engines (ME-GI and XDF), cybersecurity and digitalisation (including automation for on-board systems), new types of reliquefaction plants, compatibility with LNG terminals.⁶²⁴
- (518) [...].^{625 626 627 628 629 630}

⁶¹⁸ Horizontal Merger Guidelines, paragraph 38. For the purpose of this Section and of this Decision, the concept of “innovation as an important competitive force” includes and covers the concept of “innovation as an important parameter of competition”.

⁶¹⁹ If, on the one hand, point 1 to 6 below mainly support the argument that innovation is an important competitive force, these points also support the argument that the Parties (especially DSME) are important innovators.

⁶²⁰ If, on the one hand, point 7 to 11 below mainly support the argument that the Parties (especially DSME) are important innovators, these points also support the argument that innovation is an important competitive force.

⁶²¹ Replies to question 115.5 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶²² Replies to question 115.5 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶²³ Replies to question 115.5 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶²⁴ Replies to question 72 of Questionnaire Q3 to Customers. [DOC ID: 3236] Replies to question 115.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶²⁵ Replies to question 115 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶²⁶ [...]

⁶²⁷ Response to the First Letter of Facts, paragraphs 235-243.

⁶²⁸ “KSOE head puts focus on R&D to fight competition”, Korea JoongAng Daily, dated 11 June 2019. [DOC ID: 3171]

⁶²⁹ The Notifying Party’s 5.4 documents, [...].

⁶³⁰ Response to the First Letter of Facts, paragraphs 235-243.

Figure 40 [...]

[...]

Source: [...]

- (519) Fourth, such technologies will be more and more important for LLNGCs in the future. This was confirmed by a majority of customers that expressed an opinion in the market investigation.⁶³¹ For example, a customer stated that “*many of the new technologies will be developed to help the ships become more efficient and to lower CO2 and GHG emissions in order to meet aggressive IMO targets set for 2030 and 2050*”.⁶³² This is also confirmed by KSOE’s statements as reported in the press: “[s]hipbuilding has been a labour-intensive industry, but our company will transform the industry to be more dependent on new technologies”⁶³³ One of the few customers that stated that, for LNGCs, innovation was more important in the past, considers that this is not the case for FSRUs: “[...] For FSRUs innovation is much more relevant”.⁶³⁴ Consistently with the above, the majority of customers that expressed an opinion consider that some shipbuilders, especially those that are and have been at the forefront of innovation and have existing partnerships with upstream manufacturers will enjoy a competitive advantage.⁶³⁵
- (520) Fifth, if, on the one hand, the majority of customers that expressed an opinion indicated that not all innovations in all the above-mentioned areas came exclusively from shipbuilders but also from upstream manufacturers,⁶³⁶ on the other hand, shipbuilders seem to play a significant role in innovation, especially with respect to certain aspects of vessels manufacturing and of developing in-house or mastering and testing licensed-in propulsion or gas containment technologies. For example, a customer stated that “*the innovations are coming mainly by the three [...] major South Korean shipbuilders. The first commercial MAN ES MEGI has been tested in HHI EMD facilities. The first MEGI LNG carrier was built by DSME. The first XDF LNG carrier has been built by Samsung. [...] The biggest vessel with MARK III Flex Plus [containment system] will be built by HHI. [...]*”.⁶³⁷ In addition, a customer indicated DSME as the shipbuilder which introduced innovations in the industry such as “*hull forms with greater efficiency*”⁶³⁸ and “*new membrane cargo tank design (Solidus)*”.⁶³⁹ Another customer explains that “*Korean shipbuilders have spent money and time to develop these technologies so as to have a competitive edge over their competitors from China and Japan. [...]*”.⁶⁴⁰
- (521) Consistently and contrary to what is argued by the Notifying Party,⁶⁴¹ all customers that expressed an opinion consider that innovation is driven by both shipbuilders and

⁶³¹ Replies to question 73 of Questionnaire Q3 to Customers. [DOC ID: 3236] Replies to question 115 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶³² Replies to question 73.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶³³ “KSOE head puts focus on R&D to fight competition”, Korea JoongAng Daily, dated 11 June 2019. [DOC ID: 3171]

⁶³⁴ Replies to question 115 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶³⁵ Replies to question 74 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶³⁶ Replies to question 75 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶³⁷ Replies to question 75 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶³⁸ Replies to question 75 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶³⁹ Replies to question 75 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶⁴⁰ Replies to question 74 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶⁴¹ The Notifying Party’s Response to the First Letter of Facts, paragraphs 235-243.

upstream suppliers.⁶⁴² For example, one customer explained that "[t]he industry is heavily on shipbuilders both leading innovation (vessel size, hull form, construction processes, etc.) and integrating innovations driven by OEMs, owners and charterers into the vessels they construct. Currently the shipbuilders must compete by continuously improving the integration of new innovative technology".⁶⁴³ Another customer clarified that "[t]he design of an LNG carrier is built around multiple dependences which involve the shipbuilders and other companies. The extent to which the design of the ship interacts with the cargo tank and boil off together with engine efficiency are all very closely interlinked. [...]".⁶⁴⁴ Another customer clarified that "[f]ollowing innovation [...] are driven by shipbuilders: twin-skeg hull form, optimised hull form, energy saving devices for propeller and rudder, optimised bulbous bow, air lubrication design, smart ship, cybersecurity".⁶⁴⁵

- (522) Sixth, as explained in **Section 7.1.1** and **Section 8.3.8**, [...] has developed a new LNG cargo tank containment system technology. Although this technology is licensed out to shipbuilders by [...], as explained in **Section 8.3.3** and **Section 8.3.8**, shipbuilders do play a role either by suggesting design improvements or by implementing non-design improvements to [...]’s technology.
- (523) Seventh and contrary to what is argued by the Notifying Party,⁶⁴⁶ several customers consider that HHI, DSME and SHI are the market leaders in innovation in LLNGCs.⁶⁴⁷ For example, one customer stated that "[...] [i]n FSRU cases, Korean major shipbuilders always offer a proposal of some technical innovations from the previous [...] regasification design. Such a continuous R&D improvement activity is one of strength of Korea major shipbuilders".⁶⁴⁸
- (524) Eighth and contrary to what is argued by the Notifying Party,⁶⁴⁹ the Parties, especially DSME,⁶⁵⁰ are important innovators for a number of reasons. First, DSME delivered the first ice-breaker LLNGC ever in 2016 (and so far DSME is the only one having delivered such vessels).⁶⁵¹ Second, DSME was the first shipbuilder ever to receive orders for LLNGCs equipped with air lubrication technology⁶⁵² in June 2016⁶⁵³ and the first one ever to deliver one in November 2019⁶⁵⁴, while also HHIH and SHI have received orders for (and delivered) such vessels.⁶⁵⁵ Fourth, [...],⁶⁵⁶ [...].⁶⁵⁷ [...] ⁶⁵⁸ [...].⁶⁵⁹ [...].⁶⁶⁰

⁶⁴² Replies to question 115.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶⁴³ Replies to question 115.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶⁴⁴ Replies to question 115.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶⁴⁵ Replies to question 115.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶⁴⁶ The Notifying Party’s Response to the First Letter of Facts, paragraphs 245-250.

⁶⁴⁷ Replies to question 115.4 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶⁴⁸ Replies to question 115.4 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁶⁴⁹ The Notifying Party’s Response to the First Letter of Facts, paragraphs 235-243.

⁶⁵⁰ Minutes of the meeting with [...] dated 1 October 2019, paragraph 14. [DOC ID: 3201]

⁶⁵¹ The Notifying Party’s reply to question 2 of RFI 14, Annex Q2. See also the Notifying Party’s reply to question 26 of RFI 67, Annex Q26.2.

⁶⁵² Aimed at reducing water resistance and therefore up to about 5% of fuel savings.

⁶⁵³ The Notifying Party’s reply to question 26 of RFI 67, Annex Q26.3.

⁶⁵⁴ The Notifying Party’s reply to question 26 of RFI 67, Annex Q26.3.

⁶⁵⁵ The Notifying Party’s reply to question 1 of RFI 14. The Notifying Party’s reply to RFI 59, Annex Q4. See also the Notifying Party’s reply to question 26 of RFI 67, Annex Q26.3

⁶⁵⁶ The Notifying Party’s reply to question 27 of RFI 1; Minutes of the call with [...] dated 22 July 2020, paragraph 4. [DOC ID: 4032] See also the Notifying Party’s reply to question 25 of RFI 67.

⁶⁵⁷ The Notifying Party’s reply to question 27 of RFI 1. See also the Notifying Party’s reply to question 5 of RFI 41. See also the Notifying Party’s reply to question 25 of RFI 67.

- (525) Ninth, as explained in **Section 8.3.6**, demand for Arc7 LLNGCs is expected to increase. As confirmed by public sources, DSME, which is the world most experienced shipbuilder in Arc7 LLNGCs, played a significant role in the development of second generation Arc7 LLNGCs. Indeed, throughout the development phase of this second generation Arc7 LLNGC technology, the “[...] *concept design was evaluated, improved, and finalised together with DSME [...] to ensure that the new icebreaking LNG carriers are the most efficient solution for transporting natural gas year-round on the Northern Sea Route.*”⁶⁶¹ In this context, the Commission notes that DSME has been the first shipbuilder to receive orders Arc7 LLNGC (and so far the only shipbuilder which has delivered Arc7 LLNGCs), while also SHI (SHI-Zvezda) has subsequently received orders for Arc7 LLNGCs.⁶⁶² [...],⁶⁶³ [...].⁶⁶⁴ [...].⁶⁶⁵ [...].⁶⁶⁶ [...].⁶⁶⁷ [...],⁶⁶⁸ [...]⁶⁶⁹, [...].⁶⁷⁰ [...].⁶⁷¹
- (526) Tenth, recent press articles confirm that both Parties are important innovators and that DSME, in particular, continues to be a leading innovator in the industry. In one recent article (which, contrary to what is argued by the Notifying Party also relates to shipbuilding innovative technologies likely to be applied to LLNGCs),⁶⁷² it appears that HHIH has signed an agreement with Korea Investment Corporation (“KIC”) entailing an investment of about USD 900 million for mergers and acquisitions opportunities of developing technology firms.⁶⁷³ The same article reports that under such agreement HHIH and KIC will jointly seek to acquire companies focussed on the development of technologies in the area of autonomous ships, artificial intelligence, robotics and hydrogen fuel cells.⁶⁷⁴ HHIH’s vice president stated that “[...] *the first step for HHI Holdings to realise the new business that it has been promoting so far*”. Moreover, the same article reports that “[...] *ast week, HHIH’s sub-holding company [KSOE] teamed up with Dosan Fuel Cell for the development of an eco-friendly fuel cell for vessels*”.⁶⁷⁵ Another recent press article reports that DSME has received approval for its in-house “rotor sail system”, an eco-friendly ship technology applicable inter alia to LLNGCs: “*the approved rotor sail system is one*

⁶⁵⁸ Form CO, paragraph 1337. See also the Notifying Party’s reply to question 25 of RFI 67.

⁶⁵⁹ Form CO, paragraph 1336. See also the Notifying Party’s reply to question 25 of RFI 67.

⁶⁶⁰ The Notifying Party’s reply to question 3 of RFI 41. See also the Notifying Party’s reply to question 24 of RFI 67.

⁶⁶¹ “DSME to build Six Second-Generation Arc7 LNG Carriers” dated 28 October 2020, page 2. [DOC ID: 5081].

⁶⁶² The Notifying Party’s reply to RFI 59, Annex Q3 v2. See also the Notifying Party’s reply to question 26 of RFI 67, Annex Q26.2.

⁶⁶³ The Notifying Party’s reply to RFI 58. See also the Notifying party’s Reply to question 15 of RFI 67, Annex Q.15.

⁶⁶⁴ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.83, pages 1-5.

⁶⁶⁵ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.5, page 1.

⁶⁶⁶ The Notifying Party’s reply to question 7 of RFI 67, Annex Q 7.2.9, page 7.

⁶⁶⁷ The Notifying Party’s reply to question 7 of RFI 67, Annex Q 7.2.9, page 7. See also The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.76, slide 9 of 23 July 2020.

⁶⁶⁸ Slide 15 of presentation of Expert deep dive session on 8 March 2021. See also the Notifying Party’s reply to RFI 67, Table 1, footnote 6.

⁶⁶⁹ Internal presentation on [...], originating from [...] of 23 July 2020.

⁶⁷⁰ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.76, slide 4.

⁶⁷¹ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.76, slide 9. See also The Notifying Party’s reply to question 7 of RFI 67, Annex Q 7.2.9, page 7 of 25 March 2020.

⁶⁷² The Notifying Party’s Response to the First Letter of Facts, paragraphs 235-243.

⁶⁷³ Hyundai Shipyard Targets \$900m worth of M&As with KIC tie-up of 25 March 2021. [DOC ID: 5129]

⁶⁷⁴ Hyundai Shipyard Targets \$900m worth of M&As with KIC tie-up of 25 March 2021. [DOC ID: 5129]

⁶⁷⁵ Hyundai Shipyard Targets \$900m worth of M&As with KIC tie-up of 25 March 2021. [DOC ID: 5129]

of the next-generation fuel-saving eco-friendly auxiliary propulsion technologies”.⁶⁷⁶ In the same article, it is stated that “[w]e are carrying out a number of different research projects to cope with the strengthening of global environment regulations [...] [w]e will further focus on developing eco-friendly ship technologies that are immediately applicable to ships”.⁶⁷⁷ Moreover, in the same article it is reported that “[r]ecently, wind sail technology has drawn attention from the global shipbuilding industry as expectations rise for the system to be a viable alternative to reduce ship fuel consumption and carbon emissions. DSME is aiming to produce its own system as an industry first for Korean shipbuilding.”⁶⁷⁸ In another recent article, it is reported that DSME’s newly developed smart ship platform has secured certification from an international classification society: “[...] DSME is the industry-first to obtain PDA certification in the field of cyber safety. [DSME] would provide a smart ship solution that guarantees safety against external cyber threats, as well as systems necessary for maintaining and repairing various data that help ships operate optimally. [...] [DSME] believe[s] this certification will serve as a cornerstone to advance the era of autonomous ships [...]. Smart ships are expected to revolutionise the landscape of ship design and operations. Along with efficiency in traffic, smart ships can minimise human errors that caused about 70 to 80 percent of marine accidents. [...]”⁶⁷⁹. In another recent article, it is reported that DSME will build four LLNGCs for MOL.⁶⁸⁰ Such LLNGCs “[...] will be considerably more environmentally friendly than current LNG carriers. They will be equipped with man Energy Solutions engines for fuel efficiency and adopt a new design that generates less boil-off gas from cargo tanks through the use of the re-liquefaction unit on board”.⁶⁸¹

- (527) Eleventh, the importance of the Parties as innovators was confirmed by the market investigation. A majority of customers that expressed an opinion indicated that both HHI and DSME are particularly innovative competitors in the market for LLNGCs.⁶⁸² As regards HHI, a customer stated “*HHI is constantly on the frontier of modern LNG carriers and FSRUs design in regard to overall design, hull form, energy safety devices, cargo containment (MARK III), reliquefaction plants, [dual fuel] technology, FGSS etc. while in machinery and electric strength is supported by HHI-EMD and HHI-EES*”.⁶⁸³ Another customer stated that “*HHI recently focus on [...] technologies together with suppliers*”.⁶⁸⁴ As regards DSME, a customer stated “*DSME have put more emphasis on their design and engineering capabilities in comparison to HHI and SHI. Having LNG vessels built by both DSME and SHI, we feel the DSME built vessels achieve better ship-shore compatibility at LNG terminals worldwide and are more efficient in delivering maximum cargo for our charterers. [...]*”.⁶⁸⁵ Another customer stated that “*they built the first Arc7 ice-class LNGC, now*

⁶⁷⁶ DSME rotor sails get DNV AiP, ShipInsight of 22 March 2021. [DOC ID: 5128]

⁶⁷⁷ DSME rotor sails get DNV AiP, ShipInsight of 22 March 2021. [DOC ID: 5128]

⁶⁷⁸ DSME rotor sails get DNV AiP, ShipInsight of 22 March 2021. [DOC ID: 5128]

⁶⁷⁹ Daewoo shipyard’s smart ship solution wins ABS certification, Aju News, dated 5 October 2021. [DOC ID: 5818]

⁶⁸⁰ “MOL orders four LNG carriers at DSME for Novatek charter”, Splash247.com dated 14 September 2021. [DOC ID: 5783]

⁶⁸¹ “MOL orders four LNG carriers at DSME for Novatek charter”, Splash247.com dated 14 September 2021. [DOC ID: 5783]

⁶⁸² Replies to questions 76 and 77 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶⁸³ Replies to question 76.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶⁸⁴ Replies to question 76.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶⁸⁵ Replies to question 77.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

there are 15 units on water, first MEGI propulsion was implemented by DSME”.⁶⁸⁶ Another customer stated that “*DSME recently focus on [...] technologies together with suppliers*”.⁶⁸⁷

8.3.3.3. Conclusions

- (528) In the light of the above, the Commission considers that innovation is an important competitive force in the LLNGC market (including the large FSRUs segment) and that HHI and (especially) DSME are both important innovators. The Commission considers further that CSSC (Hudong) exerts neither a sufficient nor a significant competitive constraint and that Japanese shipbuilders do not exert a meaningful competitive constraint, while barriers to entry or expansion are high.
- (529) For the reasons outlined above in this Section and combined with the Commission’s findings presented in **Section 8.3.2**, the fact that innovation is an important competitive force in the LLNGC market and that the Parties (especially DSME) are important innovators is likely to allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction, thereby contributing to the creation of a dominant position.

8.3.4. *Insufficient competitive constraints from CSSC (Hudong) and Japanese shipbuilders pre-Transaction, and insufficient competitive constraint from SHI, CSSC (Hudong) and Japanese shipbuilders post-Transaction*

- (530) This Section sets out the Commission’s framework of the assessment of the competitive constraint exercised from other shipbuilders currently and post-Transaction.
- (531) At the outset, the Commission recalls that non-merging firms in a given market can benefit from the reduction of competitive pressure that can result from a merger since any price increase by merging firms may switch some demand to rival firms,⁶⁸⁸ which, in turn, may find it profitable to increase their prices.⁶⁸⁹
- (532) The Commission finds that the Parties’ combined market shares are high (above [60-70]%), that the Transaction leads to the combination of two out of three (including SHI) very close competitors and that the Parties (especially DSME) are two important innovators (see **Section 8.3.2** and **Section 8.3.3**).
- (533) In the subsequent Sections, the Commission finds that, already pre-Transaction, CSSC (Hudong) does not exercise a sufficient competitive constraint on the Parties (**Section 8.3.4.2**) and that, already pre-Transaction, Japanese shipbuilders do not exert a meaningful competitive constraint on the Parties (**Section 8.3.4.3**). The

⁶⁸⁶ Replies to question 77.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶⁸⁷ Replies to question 77.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁶⁸⁸ As explained in **Section 8.3.9**, switching and multisourcing are not accurate terms to describe the market dynamics as each project may have different requirements, for example: (i) state-sponsored projects may require a customer to order a locally-built LNGCs, (ii) the charterer or the customer may have very specific requirements or preferences, (iii) a shipbuilder may not be able to accommodate a big order for slot availability issues or for diversification, (iv) a shipbuilder may not be in the condition to accommodate certain very specific and project-related technical specifications or just not being able to meet the customer’s track record requirement. Moreover, customers are not active in a downstream markets in which they have continuous production of a given good for which they need constant input of another homogeneous good which, for security of supply, they multisource. For these reasons, the Commission considers that the mere fact that a customer procures from different suppliers does not necessarily amount to switching nor multisourcing.

⁶⁸⁹ Horizontal Merger Guidelines, paragraph 24.

Commission also finds that, post-Transaction, neither SHI (see **Section 8.3.4.1**) nor CSSC (Hudong) (see **Section 8.3.4.2**) will have the ability or the incentive to defeat a price increase by the merged entity post-Transaction. The Commission also finds that Japanese shipbuilders will not exert a meaningful competitive constraint on the merged entity post-Transaction (**Section 8.3.4.3**). In other words, neither SHI, nor CSSC (Hudong) nor any of the Japanese shipbuilders, whether individually or together, will have the ability or incentive to defeat a possible price increase post-Transaction by the merged entity. This contributes to the finding that the Transaction creates dominant position of the merged entity.

(534) Contrary to the Notifying Party's claims, the Commission is not required to carry out a quantitative incentive analysis to assess the overall incentives (and those of the merging parties in particular) to increase prices in order to establish whether a concentration would significantly impede effective competition. Rather, at the net of the fact that LLNGCs are differentiated products that therefore capacity, while informative, is only one among various factors relevant to the assessment of the dynamics of competition in the LLNGCs market, when assessing whether significant horizontal non-coordinated effects are likely to result from a merger, the Horizontal Merger Guidelines give the Commission the possibility to assess, amongst others, whether competitors of the merged entity have the capacity (giving them the ability to increase their supply substantially) and find it profitable (i.e., have an incentive) to expand output following a price increase of the merged entity. Indeed, in such a situation it would be unlikely that the merger would create or strengthen a dominant position or otherwise significantly impede effective competition.⁶⁹⁰

(535) The Commission has established that HHI and DSME are each other's close competitors and that are both (especially DSME) important innovators and these factors contribute to the finding that the Transaction results in the creation of a dominant position by the merged entity (see **Section 8.3.2** and **Section 8.3.3**). Therefore, once it is established that competitors would not have the ability or the incentive to increase output to defeat a price increase, it follows that the merged entity would have the incentive to increase prices.

8.3.4.1. SHI will not have the ability or incentive to exert a sufficient competitive constraint on the Parties post-Transaction

(536) This Section sets out the Commission's assessment of the competitive constraint exercised by SHI. The Commission finds that SHI will neither have the ability nor the incentive to exert a sufficient competitive constraint on the Parties post-Transaction to defeat a possible price increase by the merged entity in the LLNGC market and in the large FSRUs segment. This contributes to the finding that the Transaction results in the creation of a dominant position by the merged entity.

(A) The Notifying Party's views

(537) In the Response to the SO, the Notifying Party submitted that the Commission's assessment of whether the merged entity would be dominant is incomplete because it failed to account for SHI's significant competitive strength.⁶⁹¹ More specifically, the Notifying Party submits that the Commission takes no account that, among other things, SHI (i) has a market share of [20-30]% (the same as DSME pre-merger); (ii) SHI is aligned on quality and price with the merged entity; and (iii) SHI is

⁶⁹⁰ Horizontal Merger Guidelines, paragraph 32-35.

⁶⁹¹ Response to the SO, Section C.II.2.

considered to be an equivalent alternative to HHIH and DSME by customers and has ample spare capacity, estimated at [...] LLNGCs a year.⁶⁹²

- (538) In the Response to the First Letter of Facts, the Notifying Party submits that the Commission accepted SHI's competence in LLNGCs and that thus, implicitly found that SHI is and will remain a credible competitor for LLNGCs, with equivalent credibility and track record to the Parties.⁶⁹³ In particular, the Notifying Party submits that SHI would not be capacity-constrained and that would therefore be able to exert, alone, a strong constraint on the Parties post-Transaction for the following reasons.⁶⁹⁴ First, the assertion that SHI lacks spare LLNGC capacity would be inconsistent with the evidence in the Commission's file, as [...].⁶⁹⁵ Second, according to the Notifying Party, the Commission disputes [...] referring to a misinterpretation of [...] on production mix model.⁶⁹⁶ Third, SHI would not need to preserve its historical production mix.⁶⁹⁷ Fourth, the Commission would have wrongly claimed that SHI would have no incentive to change its product mix.⁶⁹⁸ Fifth, the Commission would have wrongly focussed on SHI's previous output to dismiss [...].⁶⁹⁹ Sixth, the Commission would have misconstrued an internal document of DSME to dismiss [...].⁷⁰⁰ Moreover, the Commission would have also made an incorrect allegation that SHI would have no incentive to defeat a price increase (even if it had capacity) because it participates in the same industry fora as the Parties.⁷⁰¹
- (539) In the Response to the Second Letter of Facts, the Notifying Party argues that SHI will effectively constrain the Parties post-Transaction and that this excludes the creation of a dominant position.⁷⁰² More specifically, the Notifying Party argues that SHI would have enough capacity and would find it profitable to defeat a price increase by the Parties post-Transaction. Indeed, according to the Notifying Party, based on realistic assumptions, the Transaction would neither create nor strengthen a pivotal position as the Commission would have underestimated SHI's available LLNGC capacity and its incentive to expand output if prices rise.⁷⁰³
- (B) The Commission's assessment
- a) *SHI's market share does not preclude a finding of dominance*
- (540) The Commission refers to Section 8.3.1. As indicated in Table 5, Table 6, Table 8 and Table 9 above, SHI achieved a market share below [20-30]%, namely of [20-30]% ("Compensated Gross Tonnage" or "CGT") and [20-30]% (units) in the period 2015-2019 and market shares of the same order in the large FSRU segment. For LLNGCs, for 2016-2020, SHI's market shares in CGT are [20-30]% or [30-40]% (adding SHI-Zvezda) and in units [20-30]% or [30-40]% (adding SHI-Zvezda) and [20-30]% (CGT) and [20-30]% (units) in large FSRUs. For LLNGCs, for 2017-2021

⁶⁹² Response to the SO, paragraphs 250-259.

⁶⁹³ Response to the First Letter of Facts, paragraphs 38-39.

⁶⁹⁴ Response to the First Letter of Facts, paragraphs 69-100.

⁶⁹⁵ Response to the First Letter of Facts, paragraphs 69-72.

⁶⁹⁶ Response to the First Letter of Facts, paragraphs 73-76.

⁶⁹⁷ Response to the First Letter of Facts, paragraphs 77-82.

⁶⁹⁸ Response to the First Letter of Facts, paragraphs 83-91.

⁶⁹⁹ Response to the First Letter of Facts, paragraphs 92-96.

⁷⁰⁰ Response to the First Letter of Facts 97-100.

⁷⁰¹ Response to the First Letter of Facts, paragraphs 162-166.

⁷⁰² Response to the Second Letter of Facts, paragraph 44 and ff.

⁷⁰³ Response to the Second Letter of Facts, paragraphs 49-73.

(up to 30 September 2021), SHI's market shares in CGT are [20-30]% or [30-40]% (adding SHI-Zvezda) and in units [20-30]% or [30-40]% (adding SHI-Zvezda) and market shares of [20-30]% (CGT) and [20-30]% (units) in large FSRUs. In turn, SHI's market position (being it of about [30-40]% or of [20-30]%) is not such as to preclude a finding of dominance on the part of the merged entity. The gap between the market shares of the merged entity and SHI is significant (at least [30-40]%) and SHI will not have the ability or incentive to defeat a price increase from the Merging Parties for the reasons explained below.

b) *SHI does not have the ability to defeat a post-Transaction price increase due to its limited potential capacity*

(541) The Commission considers that SHI does not have the ability to defeat a post-Transaction price increase due to its limited capacity.

(542) The Commission notes that in the Response to the SO,⁷⁰⁴ the Notifying Party claimed ([...]⁷⁰⁵) that SHI could build between [...] and [...]⁷⁰⁶ (possibly up to [...])⁷⁰⁷ LLNGCs per year, while maintaining a product mix.⁷⁰⁸ Further, in the Response to the SO,⁷⁰⁹ the Notifying Party also contends that [...] is the maximum number of LLNGCs it could build in a given year. Concerning the figure of [...] LLNGCs per year reported in [...],⁷¹⁰ [...]. [...].⁷¹¹ This corrected figure is consistent with SHI's maximum yearly deliveries that the Commission indicated in its SO (that took into account 2010-2019 data)⁷¹² and is further consistent with the views of [...] at that time.⁷¹³ The Commission also notes that in the First Letter of Facts, it presented additional evidence to support the finding that SHI's capacity to build LLNGCs is limited⁷¹⁴ to [...]⁷¹⁵ LLNGCs per year (taking into account 2010-2020 data). The Commission notes that, as explained in **Section 8.3.7.2 (B) c)**, for the purpose of this decision and in line with the assessment in the Second Letter of Facts⁷¹⁶, it estimates that SHI has a capacity of [...] LLNGCs a year (taking into account 2010-2021 data). In the Response to the Second Letter of Facts, the Notifying Party insists that SHI's future capacity is at least [...] LLNGCs a year.⁷¹⁷

(543) The Commission considers that the Notifying Party's claims on SHI's capacity are unsupported by the overall body of evidence in the file for the reasons set out below.

(544) First, [...].⁷¹⁸ However, the Commission notes that SHI would not be able to produce both [...] LLNGCs and as many PostPanamax containerships (15,000+TEU) and

⁷⁰⁴ Response to the SO, paragraphs 257 and 591.

⁷⁰⁵ [...].

⁷⁰⁶ Response to SO, paragraphs 587 and ff.

⁷⁰⁷ Supplemental submission regarding the Notifying Party's observations on the continued access to the file granted on 21 October 2020, dated 24 November 2020, paragraph 33.

⁷⁰⁸ Supplemental submission regarding the Notifying Party's observations on the continued access to the file granted on 21 October 2020, dated 24 November 2020, paragraph 33.

⁷⁰⁹ Response to the SO, paragraph 585.

⁷¹⁰ [...].

⁷¹¹ [...].

⁷¹² SO, Table 14.

⁷¹³ [...] has stated that "SHI can deliver a maximum of [...] LLNGCs a year". Minutes of the conference call with [...] dated 22 July 2020, paragraph 15 [DOC ID: 4032]

⁷¹⁴ Taking into account data in the period of 2010-2020.

⁷¹⁵ In the SO [...], without considering 2020 data.

⁷¹⁶ Second Letter of Facts, Table 14.

⁷¹⁷ Response to the Second Letter of Facts, paragraphs 51-63.

⁷¹⁸ [...]. [DOC ID: 4034]. The Commission notes that, [...]. On this, see [...]. [DOC ID: 4194]

VLCCs (200,000 DWT) as currently or historically produced. [...].⁷¹⁹ [...].⁷²⁰ [...].⁷²¹ Contrary to what is argued by the Notifying Party,⁷²² the relevant LLNGC size of 174,000m³ is important as the current standard LLNGC size is of 174,000m³, and this without prejudice of the fact that, as explained in **Section 7**, the relevant product market defines LLNGC as equal to or above 145,000m³. The Commission also notes that [...].⁷²³ [...].⁷²⁴ [...].⁷²⁵ [...].

- (545) In the Response to the First Letter of Facts⁷²⁶, the Notifying Party argues that SHI's could build [...] LLNGCs keeping its historical product mix based on [...]. The Commission has the following observations on this approach to estimate capacity.
- (a) First, the Notifying Party included Dock 1 in this assessment despite [...]. In the last five years 2016-2020, [80-90]% of the [...] LLNGC that SHI built, were larger than 174,000m³ (or equal). Among the [...] LLNGCs built in 2021 and expected to be built until 2025, only [...] smaller than 174,000m³.⁷²⁷ [...] and the approach detailed in the Annex 11 to the Response to the First Letter of Facts, [...]’s estimated LLNGC capacity would be reduced to [...].
- (b) Second, the methodology described in the Annex 11 of the Response to the Letter of Facts does not reflect historical dock allocation. According to the Notifying Party, SHI would prefer to allocate the vessels in high demand to the dock with a comparative advantage in terms of opportunity costs and allocate the other vessel classes to the docks with a lower opportunity cost in terms of the high vessel class demand. As acknowledged by the Notifying Party, SHI focussed in 2015-2019 mostly on LLNGCs and Post-Panamax. However, [...].
- (546) In addition, the Commission notes that in the Response to the Second Letter of Facts, the Notifying Party insists that SHI's future capacity is of at least [...] LLNGCs a year.⁷²⁸ To substantiate its claim, the Notifying Party relies on [...] pointing to [...]. However, in response to the Notifying Party's argument, the Commission notes that this claim ignores that these dry docks/floating docks are necessary also to deliver other vessels to fulfil SHI's product mix.⁷²⁹ More specifically, according to the Clarksons data provided by the Notifying Party in response to question 38 of RFI 67, it is clear that at least [...] vessels planned to be delivered in 2022⁷³⁰ and [...] in 2023⁷³¹ of the non-LLNGCs ones will have to be built in the very same four docks that would have to be dedicated to LLNGCs as mentioned by the Notifying Party to reach [...] LLNGCs a year. [...].⁷³² ⁷³³ ⁷³⁴ ⁷³⁵ ⁷³⁶ ⁷³⁷ [...]. As a result, to have

719

[...].

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[...].

721

[...].

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Response to the Second Letter of Facts, paragraph 56.

723

[...].

724

[...]

725

[...].

726

Response to the First Letter of Facts, paragraph 82.

727

Clarkson vessel data provided in Response to RFI 67, Q38.

728

Response to the Second Letter of Facts, paragraph 51 and ff.

729

As explained in **Section 8.3.7**, LLNGC capacity is not only about dock space or quay space. So the fact that these docks are also used to build other large vessels does not undermine the Commission's assessment that capacity is not as ample or as fungible as portrayed by the Notifying Party.

730

As visible from the Clarksons database provided by the Notifying Party in response to question 38 of RFI 67, the unique vessel's code identifier of these vessels are: [...], [...], [...], [...], [...].

731

As visible from the Clarksons database provided by the Notifying Party in response to question 38 of RFI 67, the unique vessel's code identifier of these vessels are: [...].

732

[...].

sufficient capacity to produce [...] LLNGCs a year, SHI would have to significantly reduce the production of the other (very) large vessels. Hence, the production by SHI of up to [...] LLNGCs [...] as alleged by the Notifying Party in its Response to the Second Letter of Facts is not a likely scenario but rather a theoretical maximum. Specifically, it is plainly incompatible with the orders already booked of large non-LLNGC vessels for 2022-2023 (see above, in reply to the Notifying Party's argument in the Response to the Second Letter of Facts).

- (547) Second, the Notifying Party explains in the Response to the SO how the theoretical maximum of [...] LLNGCs a year can be calculated, that is by taking the maximum CGT delivered by SHI across all vessel types and dividing it by the average CGT of an LLNGC.⁷³⁸ However, as also shown in **Table 38**, SHI never delivered more than [...] across all vessels type and across all sizes over the entire 2010-2021 period.⁷³⁹ Assuming that an LLNGC on average accounts for 87,381 CGT⁷⁴⁰ this means that SHI could be theoretically able to build [...] LLNGCs. However, this theoretical computation must be rejected. Indeed, the capacity figure resulting from this simple calculation does not find support in any of the available industry evidence and also contradicts the methodology proposed by the Notifying Party to estimate capacity for a specific vessel. More specifically, it does not take into account either product mix limitations or size restrictions at the yard. Therefore, such scenario is purely theoretical and unrealistic.
- (548) In this framework, the Commission notes that a closer look at the assumptions underlying the theoretical maximum SHI capacity raises further doubts. First, looking at aggregate capacity, SHI reached its peak levels of production in [...]. Second, as **Figure 41** shows, SHI never dedicated all of its capacity to building a single vessel type. Third, even if SHI were to build only a single vessel type and were to build only LLNGCs, the Commission considers likely, as will be further discussed in the below Section, that there will be some decreasing returns to scale and that it is not plausible to employ the same capacity as efficiently as when maintaining a product mix of small and large vessels. Fourth, as explained above, [...], thus even if SHI were to build only or mainly LLNGCs, it would not be able to use all its capacity for this vessel class. Fifth, if the same methodology to estimate SHI's capacity for LLNGCs were to be applied to the Parties, the Parties' LLNGCs capacity would also be significantly higher than the one considered in this Decision (see **Section 8.3.7.2 (B)**). In turn, such capacity estimates would not be consistent with the Parties' own assessment of capacity. For example, it could also be postulated that DSME could stop producing other vessels and produce only LLNGCs. Applying the methodology proposed for SHI would entail that DSME

⁷³³ As visible from the Clarksons database provided by the Notifying Party in response to question 38 of RFI 67, the unique vessel's code identifier of these vessels are: [...].

⁷³⁴ As visible from the Clarksons database provided by the Notifying Party in response to question 38 of RFI 67, the unique vessel's code identifier of these vessels are: [...].

⁷³⁵ [...].

⁷³⁶ As visible from the Clarksons database provided by the Notifying Party in response to question 38 of RFI 67, the unique vessel's code identifier of these vessels are: [...].

⁷³⁷ As visible from the Clarksons database provided by the Notifying Party in response to question 38 of RFI 67, the unique vessel's code identifier of these vessels are: [...].

⁷³⁸ Response to the SO, footnote 807.

⁷³⁹ The figure of [...] is also reported in the SO in Table 13.

⁷⁴⁰ Average size of a LLNGC contracted over 2016-2020 calculated from Clarkson Vessel Data from RFI 67. The average size reported in the Response to the SO footnote 807 is [...] based on vessels contracted over 2015-2019 and this implies that SHI could build [...] LLNGCs.

could reach a capacity of [...] LLNGCs per year.⁷⁴¹ However, this theoretical computation would be much higher than DSME’s assessment of its own capacity of [...] LLNGCs per year.

Figure 41 Evolution of product portfolio of SHI based on deliveries (2004-2020)

[...]

Source: Response to the RFI 67, Q28.

(549) Third, the Commission considers that an internal DSME document (reported in **Figure 42**) that estimates the LLNGCs capacity of each of DSME, HHI and SHI constitutes credible evidence of the capacities of SHI.⁷⁴² In particular and contrary to what is argued by the Notifying Party in its Response to the SO,⁷⁴³ that document estimates SHI capacity at [...] LLNGCs per year, which is even lower than the lower bound of the Commission’s estimate put forward in the SO (that was [...] LLNGCs per year) and in the present Decision ([...] LLNGCs a year), thereby further supporting the Commission’s findings in this regard.

Figure 42 DSME’s view on LLNGCs capacity

[...]

Source: Exhibit 43, Table 16, of the study submitted by DSME on 30 January 2020.

(550) Fourth, the Commission also notes inconsistencies in the figures provided by the Notifying Party and [...], respectively, to estimate SHI’s LLNGCs capacity. [...],⁷⁴⁴ [...].⁷⁴⁵ [...].

(551) Fifth, the Commission acknowledges that, as shown in **Table 35**, SHI is expected to deliver [...] LLNGCs in 2021. The Notifying Party uses this evidence to claim that SHI could increase its capacity of LLNGCs. In that respect, the Commission does not dispute that there could be some marginal variations in capacity. Indeed, the Commission estimates SHI’s LLNGC maximum capacity to be between [...] and [...] LLNGCs a year depending on the specific assumptions made to estimate capacity.⁷⁴⁶ The value of [...] expected LLNGC deliveries is within this range and is therefore consistent with the Commission’s estimates provided in **Section 8.3.7** and the Second Letter Facts⁷⁴⁷. Furthermore, these [...] expected LLNGC deliveries do not differ significantly from the estimates presented in the SO of [...] to [...].⁷⁴⁸ However, in the Commission’s view, showing that SHI is expected to be able to

⁷⁴¹ This could be computed given that DSME’s maximum output equals [...] CGT and that an LLNGCs contracted over 2016-2020 on average accounts for [...] CGT. This average is calculated using Clarkson Vessel Data submitted in response to RFI 67, Annex Q38.

⁷⁴² [...].

⁷⁴³ Response to the SO, paragraph 572 and 583-593.

⁷⁴⁴ As apparent from [...]. [DOC ID: 3686]

⁷⁴⁵ [...] stated:

- “Vessels were ordered at Zvezda shipyard. Contracts were signed directly with this yard.” ([...]’s reply to question 1.a of Commission RFI to [...] dated 16 September 2020. [DOC ID: 4047])

- “All vessels will be built in Russia with SHI participation” ([...]’s reply to question 1.c of Commission RFI to [...] dated 16 September 2020. [DOC ID: 4047])

⁷⁴⁶ Based on Commission’s calculations shown in **Table 39** on the updated Clarksons data provided by the Notifying Party in response to RFI 67, Annex Q38.

⁷⁴⁷ Second Letter of Facts, Table 14

⁷⁴⁸ SO, Table 14.

deliver [...] LLNGCs, when historically it delivered a maximum of [...],⁷⁴⁹ cannot be used as evidence to support the claim that SHI could deliver [...] LLNGCs a year.

- (552) Furthermore, the [...] LLNGCs that SHI is expected to deliver in 2021 should be seen in the overall context of the [...] high number of LLNGCs to be delivered in 2021. As shown in **Table 35**, a total of [...] LLNGCs are expected to be delivered in 2021. [...]. Yet, both HHI and DSME are expected to deliver a higher number of LLNGCs than SHI with, respectively, [...] and [...] LLNGCs for a combined delivery of [...] LLNGCs in 2021. Conversely, CSSC is expected to deliver [...] LLNGCs in 2021. In this respect, rather than showing the potential for SHI to expand capacity and to defeat a possible price increase of the merged entity, the year 2021 is a clear example of the “pivotality” of the merged entity. Indeed, in 2021, SHI and CSSC would need a combined spare capacity of [...] LLNGCs, in addition to the capacity occupied by current orders, to be able to serve the entire market. However, they would not have the necessary level of spare capacity to serve this demand, even in the more extreme capacity scenario presented by the Notifying Party in the Response to the SO.⁷⁵⁰
- (553) The Commission notes that recent press articles also confirm these considerations set out above in **paragraphs (551) and (552)** as regards SHI’s deliveries in 2021. In a recent article examining whether [...] may decide to place additional orders from SHI, it is reported that “[t]he possibility of additional orders is high. Some analysts say that the contract will not proceed due to (1) supply shortages caused by additional orders for containerships and gas carriers, and (2) increased market demand for LNG ships. [...]”⁷⁵¹ In another recent article in which it is reported that SHI received an order for [...] new LLNGCs in September 2021, it is stated that “[y]ard capacity also remains tighter than in recent years, as the LNG shipping market awaits newbuild orders tied to Qatar’s North Field expansion project [...]”⁷⁵² This is confirmed by other press articles reporting that SHI was close to overachieving its 2021 order targets in the third quarter of 2021. In particular, “[...] Samsung Heavy Industries has clinched a total of \$7.8 billion orders, or 86 percent of its annual target of \$9.1 billion. The company is expected to achieve the target as early as next month [...]”⁷⁵³ In another recent article, it is stated that backlog will increase with the [...] order: “[t]he three Korean shipbuilding companies have secured two years’ worth of work. Their order backlog is expected to increase to five years of work thanks to the Qatar project”.⁷⁵⁴

⁷⁴⁹ Up until 2021, they had only produced a maximum of [...] per year. In 2021, until Sep 30, 2021, they delivered [...] LLNGCs. They are expected to deliver [...] by the end of 2021. Based on Clarkson Vessel Data submitted in response to RFI 67.

⁷⁵⁰ For CSSC the Response to the SO claims that CSSC could have a capacity of up to [...] LLNGCs (paragraph 594), taking into account the [...] orders of CSSC the spare capacity would be [...] LLNGCs. For SHI, the Response to the SO claims that the capacity would amount to [...] LLNGCs (paragraph 587). Accounting for the [...] on order the spare capacity would be [...] LLNGCs. This implies that the aggregate capacity of SHI and CSSC would amount to [...] LLNGCs, leaving at least a sizeable amount of [...] vessels captive to the merged entity.

⁷⁵¹ “Samsung Heavy Industries is imminent to win an LNG carrier order. Danish shipping company weighs option issue”, The Guru Global News, dated 8 October 2021. DOC ID: 5819.

⁷⁵² “SHI receives order for four LNG carriers”, Argus Media, dated 30 September 2021. DOC ID: 5786.

⁷⁵³ S. Korea’s top 3 shipyards overachieve annual order target, Pulse News Korea, dated 24 September 2021. DOC ID: 5789; See also “Shipbuilders have fat order books for 2021”, Korea JoongAng Daily dated 20 September 2021. DOC ID: 5782.

⁷⁵⁴ “Details of Qatar’s LNG Carrier project Expected to Come Out in October”, Hellenic Shipping News, dated 29 September 2021. DOC ID: 5781.

- (554) Sixth, the Commission underlines that even assuming that SHI could give up on its product mix and focus its entire production on LLNGCs (quod non), SHI's capacity would still be limited to [...] LLNGCs per year as a result of size restrictions.⁷⁵⁵ This figure of [...] LLNGCs a year almost corresponds to the upper bound of the range presented in **Section 8.3.7** of [...] LLNGCs a year namely it coincides with another hypothetical scenario considering SHI's product mix without size restrictions. As such, these scenarios further demonstrate that the figures relating to SHI capacity submitted by the Notifying Party in Response to the SO do not reflect reality.
- (555) Seventh, the Commission notes that, as explained in **Section 8.3.7**, the most relevant LLNGC capacity bottlenecks are the quay, special equipment and facilities, as well as skilled workers, engineers and project managers.
- (556) In light of the above, the Commission does not consider realistic that SHI could build at least [...] LLNGCs a year and therefore considers that SHI will not have the ability to exert a sufficient competitive constraint on the Parties post-Transaction to defeat a possible post-Transaction price increase by the merged entity in the LLNGC market and in the large FSRUs segment. This contributes to the finding that the Transaction results in the creation of a dominant position of the merged entity.
- (557) Finally, as explained in **Section 8.3.7.2 (B) g)** and **Section 8.3.9**, the Commission notes that post-Transaction, SHI will not only lack the ability to defeat a price increase of the Parties but may well have the incentive to follow a potential price increase of the Parties in the LLNGC market and in the large FSRUs segment.
- c) *SHI does not have the incentive to defeat a post-merger price increase*
- (558) The Commission considers that even assuming that SHI could have the ability to significantly expand production post-Transaction, (quod non), the Commission considers that SHI would not have the incentive to increase output to the level that would result in sufficient constraints, for the following reasons.
- c.i) *SHI does not have the incentive to produce merely or mostly LLNGC*
- (559) As noted in the previous Section, to have sufficient capacity to produce up to [...] or even more LLNGCs a year, SHI would have to stop building as many of the other very large vessels as historically or currently produced. However, SHI does not have the incentive to produce merely or mostly LLNGCs for the following reasons.
- (560) First, the Parties, SHI and other shipbuilders, adopt a business model consisting in the production of different vessel types. As [...] explained, using yards and facilities only for one type of ship would constitute an inefficient use of facilities and resources resulting in lost profits: *“Although one might suppose theoretically that shipyards produce only one type of ship, in reality, they cannot productively reorient their entire facilities to producing only one ship type without coming up against inefficient use of facilities and resources costing them lost profits.”*⁷⁵⁶

⁷⁵⁵ As explained in this Section, [...]. The figure is computed by removing from the total base capacity ([...] CGT) the CGTs that were used to build smaller vessels under the assumption that this capacity cannot be allocated to build LLNGCs. After this adjustment, the capacity is estimated by dividing the figure by the average LLNGC size. Therefore, there is no adjustment for the average of non-LLNGCs vessels built in the last 5 years.

⁷⁵⁶ [...] observations on the SO, page 16. [DOC ID: 3851]

(561) Over the course of the investigation, DSME also submitted internal documents [...] ⁷⁵⁷ [...].

Figure 43 DSME’s view on order target by vessel type

[...]

(562) The same internal document [...].

Figure 44 DSME’s view on four shipbuilders’ annual capacity by vessel type

[...]

(563) As shown in **Figure 45** below, another internal document of DSME [...] ⁷⁵⁸

Figure 45 DSME’s order targets by vessel type and comparison with HHI and SHI

[...]

Source: 2016 Business plan report (report to CEO) submitted by DSME responsive to RFI 3

(564) As shown in **Figure 46** below, in another internal document, [...] ⁷⁵⁹

Figure 46 DSME’s product mix operation plan

[...]

Source: Medium-term production strategy_vessel production management director_rev7 submitted by DSME on 13 January 2020.

(565) The Parties’ presentation to the Commission dated 22 October 2019 (as updated in reply to questions 27 and 28 of RFI 67) shown in **Figure 47** and **Figure 48** below also contains several slides showing this so-called “mixed” production model.

Figure 47 Parties’ mixed production model

[...]

Source: Parties’ presentation to the Commission dated 22 October 2019, slide 8 (as updated in reply to question 27 of RFI 67)

Figure 48 Mixed production model of other shipbuilders

[...]

Source: Parties’ presentation to the Commission dated 22 October 2019, slide 9 (as updated in reply to question 28 of RFI 67)

(566) [...] ⁷⁶⁰

(567) In that regard, [...] (see **Table 30**) a breakdown of how many units of its “core products” it delivered, on a yearly basis, over the 2015-2019 period. ⁷⁶¹ [...]. The Commission considers that, based on Clarksons data provided by the Notifying Party

⁷⁵⁷ [...].

⁷⁵⁸ DSME’s internal documents [...].

⁷⁵⁹ [...].

⁷⁶⁰ [...].

⁷⁶¹ [...].

in response to question 38 of RFI 67, the below proportions appear to be overall valid for 2020 but that, as explained in **Section 8.3.7** and in the Section above in 2021 (up to 30 September 2021) SHI is expected to deliver a higher than usual number of LLNGCs ([...]).⁷⁶²

Table 30 SHI's deliveries of core products

Year/ core area	LNG carriers equal to or above 145,000m3 (incl. FSRU and ice- breakers)	Containerships	Oil Tankers	Offshore drillships/rigs	Others
2015	[...]	[...]	[...]	[...]	[...]
2016	[...]	[...]	[...]		[...]
2017	[...]	[...]	[...]	[...]	[...]
2018	[...]	[...]	[...]		[...]
2019	[...]	[...]	[...]	[...]	[...]

Source: [...], [DOC ID: 4194]

(568) [...].

(569) [...].⁷⁶³ [...].

Table 31 SHI's annual order targets

Category	Number of vessels in the annual order target				
	2016	2017	2018	2019	2020
Conventional LLNGCs	[...]	[...]	[...]	[...]	[...]
Large FSRUs	[...]	[...]	[...]	[...]	
Containerships	[...]	[...]	[...]	[...]	[...]
Oil tankers	[...]	[...]	[...]	[...]	[...]
Offshore drillships/rigs	[...]	[...]	[...]	-	
Others	[...]	[...]	[...]	[...]	[...]

Source: [...], [DOC ID: 4194]

(570) [...]⁷⁶⁴ [...].⁷⁶⁵ However, at the same time, the Commission observes that SHI has never delivered more than [...]⁷⁶⁶ LLNGCs per year, whereas DSME has delivered [...]⁷⁶⁷ and HHI has delivered [...].⁷⁶⁸ On this basis, the Commission

⁷⁶² Clarksons data submitted by the Notifying Party as Annex Q.38 to RFI 67.

⁷⁶³ [...].

⁷⁶⁴ SHI's Sustainability Report, 2016, page 79 [DOC ID: 4309]

⁷⁶⁵ [...].

Minutes of a conference call with [...] held on 14 August 2020 paragraph 8. [DOC ID: 4034]

⁷⁶⁶ Up until 2021, they had only produced a maximum of [...] per year. In 2021, until Sep 30, 2021, they delivered [...] LLNGCs. They are expected to deliver [...] by the end of 2021. Based on Clarkson Vessel Data submitted in response to RFI 67.

⁷⁶⁷ In 2018, based on Clarkson Vessel Data submitted in response to RFI 67.

considers that if SHI had such a large LLNGCs capacity also in the past and at the same time considered this market as the one providing the most high value then it could have competed more fiercely with the Parties so as to secure a higher level of orders. On the contrary, this did not happen and SHI never delivered more than [...] ⁷⁶⁹ LLNGCs per year. The Commission therefore considers that SHI is unlikely to have the incentive to change its product mix significantly and defeat a price increase arising from the Transaction.

(571) [...] ⁷⁷⁰.

(572) As a result, the Commission considers that SHI is likely to continue adopting the same product mix approach post-Transaction. Hence, the Commission considers that if the merged entity were to increase prices for LLNGCs SHI would likely benefit from a slight increase in demand, diverted away from the merged entity, but would not counter the price increase with an output expansion in the order of magnitude claimed by the Notifying Party. ⁷⁷¹

(573) Third, the Commission disagrees with the view of the Notifying Party according to which competitors will change their current production mix to reserve more capacity for LLNGC should LLNGC demand increase in the future. ⁷⁷² To make this assertion, the Notifying Party bases itself on a quote from [...] to claim that [...] would have the ability to further increase its capacity beyond [...] LLNGCs. ⁷⁷³ In addition, according to the Notifying Party, [...] would have an incentive to do so as it can change its product mix and focus on LLNGCs which is [...] if the LLNGCs demand will increase in the future. ⁷⁷⁴ The Commission considers that these claims are incorrect for the following reasons.

(a) First, the Commission considers that [...] ⁷⁷⁵ [...] ⁷⁷⁶ [...].

(b) Second, in response to another question, [...] ⁷⁷⁷ [...]:

(a) “7. Has [...] ever downsized the production of oil tankers or containerships in order to focus on LLNGCs in instances where the demand for LLNGCs was particularly high? If so, please indicate when.

[...] Reply:

– [...].

⁷⁶⁸ Up until 2021, they had only produced a maximum of [...] per year. In 2021, until Sep 30, 2021, they delivered [...] LLNGCs. They are expected to deliver [...] by the end of 2021 Based on Clarkson Vessel Data submitted in response to RFI 67.

⁷⁶⁹ Up until 2021, they had only produced a maximum of [...] per year. In 2021, until Sep 30, 2021, they delivered [...] LLNGCs. They are expected to deliver [...] by the end of 2021. Based on Clarkson Vessel Data submitted in response to RFI 67.

⁷⁷⁰ [...].

Minutes of a conference call with [...] held on 14 August 2020 paragraph 8. [DOC ID: 4034]

⁷⁷¹ Annex C.25 to the Response to the SO.

⁷⁷² Supplemental submission regarding the Notifying Party’s observations on the continued access to the file granted on 21 October 2020 dated 24 November 2020, para. 36.

⁷⁷³ Supplemental submission regarding the Notifying Party’s observations on the continued access to the file granted on 21 October 2020 dated 24 November 2020, para. 36.

⁷⁷⁴ Supplemental submission regarding the Notifying Party’s observations on the continued access to the file granted on 21 October 2020 dated 24 November 2020, para. 36.

⁷⁷⁵ [...].

⁷⁷⁶ [...].

⁷⁷⁷ [...].

- (b) 8. In case of an increase in the LLNGCs demand, please explain if [...] could switch some part of the capacity allocated to other large vessel types (e.g., oil tankers or containerships) to the manufacture of LLNGCs. If so, please indicate which proportion of that capacity could be switched and from which yards.

[...] Reply:

- [...].⁷⁷⁸

(574) In addition, the Commission notes that recent press articles also confirm the Commission’s view that SHI will not (have the ability or incentive to) change significantly its product mix to reserve capacity for LLNGCs to defeat a price increase should LLNGC demand increase in the future. In a recent article examining whether [...] may decide to place additional orders from SHI, it is reported that “[t]he possibility of additional orders is high. Some analysts say that the contract will not proceed due to (1) supply shortages caused by additional orders for containerships and gas carriers, and (2) increased market demand for LNG ships. [...]”.⁷⁷⁹

(575) As a result, the Commission considers that SHI is unlikely to have the incentive to increase production significantly and defeat a price increase arising from the Transaction. Assuming that SHI had the ability to expand capacity up to [...] LLNGCs a year, doing so would require a drastic change of its product mix. The Commission considers that this would not be desirable for SHI for profitability and efficiency reasons and would entail significant risks by forcing SHI to change its business model and focus only or mostly on one type of vessel.

c.ii) SHI participates in various industry fora together with the Parties

(576) In support of the Commission’s conclusions in the Section above and **Section 8.3.9**, according to which SHI does not have the incentive to defeat a post-Transaction price increase, the Commission also notes the fact that SHI’s current and likely future participation in various South Korean shipbuilding forums together with the Parties. The Commission notes that participation in trade associations is not problematic as such under EU competition rules. The Commission also notes that, if, on the one hand, SHI’s current participation in these industry fora together with the Parties has not impeded HHH, DSME and SHI to compete with each other, the following elements are relevant to the assessment of SHI’s incentives given that the market will be more concentrated post-Transaction.

(577) First, documents provided by the Notifying Party indicate that SHI meets very often (generally twice a year⁷⁸⁰) with the Parties and other entities in the Production Management Working Group, a working group run by Korea Shipbuilders’ Association (KOSHIPA).⁷⁸¹

⁷⁷⁸ [...].

⁷⁷⁹ “Samsung Heavy Industries is imminent to win an LNG carrier order. Danish shipping company weighs option issue”, The Guru Global News, dated 8 October 2021. Doc ID: 5819.

⁷⁸⁰ There was no session in Q1 2020 due to the COVID-19.

⁷⁸¹ The Notifying Party’s replies to questions 1 and 2 of RFI 54. The current members are: Korea Shipbuilders’ Association (KOSHIPA), Daewoo Shipbuilding & Marine Engineering (DSME), Hyundai Heavy Industries (HHI), Samsung Heavy Industries (SHI), Hyundai Samho Heavy Industries, Hyundai Mipo Dockyard (as of 2020).

- (578) SHI and the Parties are all represented at the Production Management Working Group mostly by representatives at managerial level. Generally, two representatives of SHI and the Parties attended these meetings, usually a Manager or a higher-level representative such as a Deputy General Manager. For example, both SHI's and DSME's Deputy General Managers and Managers attended the 102nd Production Management Working Group; DSME's General Manager attended the 106th Production Management Working Group; and HHI's Deputy General Manager and two of DSME's Deputy General Managers attended the 108th Production Management Working Group.⁷⁸²
- (579) SHI and the Parties are also represented through its representatives in related entities. The CEO of HHI is chairperson of OSIDC and the Advisory Committee.⁷⁸³ The "Big Three" shipbuilders (HHI, DSME, SHI) are represented in the Advisory Committee and the subcommittees.⁷⁸⁴ HHI, DSME and SHI chair, respectively the first, second and third subcommittees.⁷⁸⁵ The heads of procurement of SHI and the Parties have met on 29 July 2020 focusing on how to facilitate cooperation between the shipbuilding and steel industries for mutual growth.⁷⁸⁶
- (580) Second, SHI and the Parties exchange detailed information on topics relevant to price competition, such as orders and price trends. As stated by the Notifying Party: "*KOSHIPA collects information on the shipbuilding markets in and outside Korea, both on its own and through the member companies of KOSHIPA, and provides the statistics compiled at the Production Management Working Group meetings. The meetings also serve as the forum for collecting the member companies' opinions about regulatory developments and any suggestions that they wish to raise to the government*".⁷⁸⁷
- (581) For instance, at the 108th Production Management Working Group Meeting, KOSHIPA distributed information on the following topics:
- (a) orders received and shipbuilding volume by Korean shipbuilders, in number of vessels and CGT in 2018, 2019 and January until June 2020 (including a split by quarter and between domestic sales and export sales) and by vessel type⁷⁸⁸;
 - (b) backlog volume by Korean shipbuilders, in number of vessels and CGT in 2018, 2019 and January until June 2020 and by vessel type⁷⁸⁹;
 - (c) yearly total exports by Korean shipbuilders by value in each year from 2014 until the first half of 2020 with an outlook for 2020;⁷⁹⁰
 - (d) vessel price trends based on half-yearly vessel price indexes by vessel type / class for the years 2015-2020.⁷⁹¹
- (582) Similar information has been circulated by KOSHIPA in previous meetings of the Production Management Working Group.⁷⁹² Relatedly, the Parties appear to

⁷⁸² The Notifying Party's reply to questions 4 and 5 of RFI 54.

⁷⁸³ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 10.

⁷⁸⁴ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 10.

⁷⁸⁵ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, pages 9 and 10.

⁷⁸⁶ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 13.

⁷⁸⁷ The Notifying Party's reply to question 2 of RFI 54.

⁷⁸⁸ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 3.

⁷⁸⁹ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 5.

⁷⁹⁰ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 5.

⁷⁹¹ The Notifying Party's reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 8

communicate regularly to KOSHIPA detailed data, including on orders, deliveries, vessel sizes, prices, vessels capacity, performance and customers identity.⁷⁹³

- (583) Third, there is a clear objective to further the common interest in a strong Korean shipbuilding industry. The very name of the Working Group includes the terms “Production Management”,⁷⁹⁴ which suggests that the objective of the Working Group is not just the exchange of information, which would not require bi-annual meetings, but the active management of production.
- (584) In particular, the Working Group and related entities are seeking win-win outcomes similar to those that would be achieved by a horizontal understanding on capacity, as they seem to focus on mutual growth of all industry players involved, as illustrated by the following examples:
- (a) In March 2019, when HHI Group signed the agreement to acquire DSME, HHI and KDB announced the creation of a “*Korea Shipbuilding Industry Commission*”⁷⁹⁵ (which is known, according to the Notifying Party, as the Korea Shipbuilding & Offshore Development Council or “KSODC”⁷⁹⁶), with the aim to “*shaping a healthier and more efficient environment for harmonious existence of all players in our industry*”. In relation to this body (KSODC appears to be referred to in translated documents also as the Offshore and Shipbuilding Industry Development Committee or “OSIDC”⁷⁹⁷), the 20th Ministerial Meeting for Enhancement of Industrial Competitiveness (23 April 2019) created the Committee for Mutual Growth in Shipbuilding Industry as “*a supplementary measure for the plan for revitalizing the shipbuilding industry*”.⁷⁹⁸
- (b) Mutual growth is part of the “*Key Priority Activities*” of sub-committees of OSIDC. The first Sub-committee (chaired by HHI) has “mutual growth” as a priority activity⁷⁹⁹ in particular “*holding meetings for promoting mutual growth*”⁸⁰⁰. The second Sub-committee (chaired by DSME) has a priority to support machinery and equipment suppliers for mutual growth.⁸⁰¹ The third

⁷⁹² The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5.3.1 EN, pages 1 to 7 (102nd Production Management Working Group Meeting dated March 2017); Annex 5.3.2 EN, pages 1 to 6 (103rd Production Management Working Group Meeting dated September 2017); Annex 5.3.3 EN (104th production Management Working Group Meeting dated March 2018), pages 1 to 6; Annex 5.3.4 EN (105th Production Management Working Group Meeting dated October 2018), pages 2 to 10; Annex 5.3.5 EN (106th Production Management Working Group Meeting dated March 2019), pages 1 to 7; Annex 5.3.6 EN (107th Production Management Working Group Meeting dated August 2019), pages 2 to 8.

⁷⁹³ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annexes 5 – II to VII (DSME), Annex 5 – VIII (HHI), and Annexes 5.1.1 to 5.1.63 (HHI) and Annexes 5.2.1 to 5.2.36 (DSME).

⁷⁹⁴ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN.

⁷⁹⁵ “*HHI Group Signs Definitive Agreement to Acquire DSME*”, Hyundai Heavy industries group, Press Release, dated 29 March 2019 [ID4233]

⁷⁹⁶ The Notifying Party’s reply to question 4 of RFI 2.

⁷⁹⁷ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 9. As background to the creation of OSIDC, the document states: “*Hyundai Heavy Industries (HHI) and Korea Development Bank made a joint announcement of the business combination (March 8, 2019), which referred to the operation of <a consultative body for development of the offshore and shipbuilding industry>.*”

⁷⁹⁸ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-I EN, page 9. See also Annex 5.3.6 pages 9 to 12.

⁷⁹⁹ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 9.

⁸⁰⁰ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 11.

⁸⁰¹ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 9.

Sub-committee will “[o]perate a committee for mutual growth of offshore and shipbuilding firms and their subcontractors.”⁸⁰²

- (c) SHI and the Parties have come together with the specific aim of fostering mutual growth as regards their purchases of steel. The 108th Production Management Working Group Meeting reported a meeting among the “*Big 3 Shipbuilders’ Steel Procurement Department Heads*” on 29 July 2020 focusing on how to facilitate cooperation between the shipbuilding and steel industries for mutual growth.⁸⁰³
- (d) Meetings on “Mutual growth” are considered “major events” and are scheduled to take place regularly, e.g., in December 2020 and subsequently in March 2021.⁸⁰⁴

(585) Fourth, [...] ⁸⁰⁵ [...] ⁸⁰⁶ [...] ⁸⁰⁷ [...] ⁸⁰⁸ [...] ⁸⁰⁹ [...] ⁸¹⁰ [...] ⁸¹¹ [...] ⁸¹²

(586) [...] ⁸¹³ [...] ⁸¹⁴ [...] ⁸¹⁵

(587) Finally, [...] ⁸¹⁶ [...] ⁸¹⁷

(588) In conclusion, the Commission considers that the above supports the Commission’s conclusions in the Section above and **Section 8.3.9**, according to which SHI does not have the incentive to defeat a possible post-Transaction price increase of the merged entity in the LLNGC market and in the large FSRUs segment.

(589) Finally, as explained in **Section 8.3.7.2 (B) g)** and **Section 8.3.9**, the Commission notes that post-Transaction, SHI will not only lack the incentive to defeat a price increase of the Parties but may well have the incentive to follow a potential price increase of the Parties in the LLNGC market and in the large FSRUs segment.

(C) Conclusion

(590) In light of the above, the Commission considers that SHI will neither have the ability nor the incentive to exert a sufficient competitive constraint on the merged entity post-Transaction to defeat a possible price increase of the merged entity post-Transaction. Moreover, as explained in **Section 8.3.7.2 (B) g)** and **Section 8.3.9**, SHI may also well have the incentive to follow a potential price increase of the merged entity post-Transaction in the LLNGC market and in the large FSRUs segment. This contributes to the finding that the Transaction results in the creation of a dominant position by the merged entity.

⁸⁰² The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 11.

⁸⁰³ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 13.

⁸⁰⁴ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 12.

⁸⁰⁵ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 13.

⁸⁰⁶ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 13.

⁸⁰⁷ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 13.

⁸⁰⁸ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 13.

⁸⁰⁹ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 13.

⁸¹⁰ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 14.

⁸¹¹ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5-IEN, page 14.

⁸¹² The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5.3.6 EN, page 12.

⁸¹³ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5.3.5 EN, page 10.

⁸¹⁴ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5.3.5 EN, page 10.

⁸¹⁵ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5.3.5 EN, page 10.

⁸¹⁶ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5.3.1 EN, pages 15 to 16 (102nd Production Management Working Group Meeting dated March 2017).

⁸¹⁷ The Notifying Party’s reply to follow-up question 5 to RFI 54, Annex 5.3.1 EN, pages 15 to 16 (102nd Production Management Working Group Meeting dated March 2017).

- 8.3.4.2. CSSC (Hudong) does not exercise a sufficient or significant competitive constraint on the Parties and will not do so either post-Transaction
- (591) This Section sets out the Commission's assessment of the competitive constraint exercised by CSSC (Hudong).
- (592) The Commission finds that CSSC (Hudong) does not exercise a sufficient or significant competitive constraint on the Parties and that it will not be able to exert a sufficient competitive constraint on the Parties post-Transaction to defeat a possible price increase by the merged entity post-Transaction. This contributes to the finding that the Transaction results in the creation of a dominant position by the merged entity.
- (A) The Notifying Party's views
- (593) In the Response to the Article 6(1)(c) decision, in its submission dated 26 May 2020⁸¹⁸, in the Response to the SO⁸¹⁹, in the Response to the First Letter of Facts⁸²⁰ and in the Response to the Second Letter of Facts,⁸²¹ the Notifying Party submits that CSSC exercises and will exercise post-Transaction a competitive constraint to the Parties as it has a similar product offering (although not on the same scale of production) as the Parties. While the Parties have achieved a higher track record (i.e. number of orders) so far, CSSC (Hudong) already constitutes a viable alternative for customers which is bound to grow even further in the next few years, for the following reasons.
- (594) First, according to the Notifying Party, CSSC (Hudong) has a sufficient track record in LLNGCs.⁸²² The fact that the vessels built by CSSC were delivered to the customer indicates according to the Notifying Party that the vessels were built in accordance with the customer preferences and had no technical issues. Furthermore, CSSC is expected to rapidly increase its track record considering the increasing amount of projects where customers order from Chinese shipbuilders as required by the charterer⁸²³ and the expansion of Chinese companies in overseas LNG projects.⁸²⁴ In the Response to the First Letter of Facts⁸²⁵ and to the Second Letter of Facts,⁸²⁶ the Notifying Party further maintains that the Commission would have misinterpreted the new facts around CSSC's alleged disadvantage in relation to Chinese LNG projects. In this context, according to the Notifying Party, CSSC has won a significant number of orders.⁸²⁷
- (595) In any event, the Notifying Party argues that shipbuilders do not need to have delivered a certain number of LLNGCs to compete effectively:⁸²⁸ CSSC (Hudong) and JMU entered the market for LLNGCs without any prior track record. The Notifying Party also points that Jiangnan Shipyard has recently won [...] for mid-

⁸¹⁸ The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Sections 2(c) and 2(d).

⁸¹⁹ Response to the SO, paragraphs 260-422.

⁸²⁰ Response to the First Letter of Facts, paragraphs 40-66 and 101-117.

⁸²¹ Response to the Second Letter of Facts, paragraphs, 40-44, 75-139.

⁸²² Response to the Article 6(1)(c) decision, paragraphs 263-273.

⁸²³ Response to the Article 6(1)(c) decision, paragraphs 271.

⁸²⁴ Response to the Article 6(1)(c) decision, paragraphs 273. Response to the SO, paragraph 277.

⁸²⁵ Response to the First Letter of Facts, paragraphs 64-66.

⁸²⁶ Response to the Second Letter of Facts, paragraph 75 and ff, paragraphs 101-115.

⁸²⁷ Response to the SO, paragraph 260 and 272-276. See also Response to the Second Letter of Facts, paragraphs 101-115.

⁸²⁸ Response to the Article 6(1)(c) decision, paragraphs 259-262.

size LNGCs.⁸²⁹ Furthermore, such a track record can increase significantly in a short period of time, given (i) the limited scope of the market (ii) its relative immaturity (the largest LNGCs have been increasingly used only as of 2006) and (iii) the fact that customers occasionally place orders for several LLNGCs at once.⁸³⁰

- (596) Second, as to any differences between LLNGCs of CSSC and the Parties, the Notifying Party submits that CSSC recorded a level of quality equivalent to Korean shipbuilders and is well perceived by its customers.⁸³¹ Shipbuilders need to obtain various approvals from expert organisations such as classification societies: key features of LLNGCs (durability, applied construction materials, functioning of propulsion and navigation systems) must be of very high quality.⁸³² According to the Notifying Party, all shipbuilders therefore have a similar offering and there is generally no real differentiation between LLNGCs based on quality. In this respect, the Notifying Party maintains, in the Response to the First and the Second Letter of Facts, that the Commission continues to rely on an untenable concept of LLNGC differentiation.⁸³³
- (597) The Notifying Party further submits that the customers' views on quality of LLNGCs obtained by the Commission, relate to technological improvements made by shipbuilders (such as reducing gradually the boil-off rate, increasing fuel efficiency by improving the shape of the hull or engines, further automating the navigation systems) and that CSSC is at least as advanced as the Parties in this regard.⁸³⁴ According to the Notifying Party, technological improvements spread quickly across the industry and shipbuilders do not normally possess any IP that would confer on them a competitive advantage: most of the technological improvements (especially on engine efficiency) are developed in cooperation with or entirely independently by equipment suppliers, while some are developed by both shipbuilders and equipment suppliers or engineering companies in parallel. While Korean and Japanese shipbuilders had previously been at the forefront of including technological improvements in their vessels, CSSC has been catching up quickly by developing innovative technologies⁸³⁵ and reached the same level of Korean and Japanese shipbuilders in many respects.
- (598) In the Response to the First Letter of Facts, the Notifying Party maintains that the Commission has interpreted incorrectly the evidence in relation to the degree of competition between the Parties and CSSC.⁸³⁶ The Notifying Party submits that any market feedback referring in general to quality of "Chinese shipbuilders" should distinguish between the different shipbuilders, of which some have less experience in building more complex vessels and some are regarded as credible suppliers.⁸³⁷ In this respect, in the Response to the First Letter of Facts, the Notifying Party

⁸²⁹ Response to the Article 6(1)(c) decision, paragraphs 259-262. The Commission notes that mid-size LNGCs are not part of the same market as LLNGCs. Furthermore, CSSC's Jiangnan Shipyard is considered to be inactive licensee by [...] as explained in [...]s reply to question 1 of the Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

⁸³⁰ Response to the Article 6(1)(c) decision, paragraphs 259-262.

⁸³¹ Response to the SO, paragraph 262 and 26-270. See also Response to the Second Letter of Facts, paragraphs 75-100.

⁸³² Response to the Article 6(1)(c) decision, paragraphs 283-285.

⁸³³ Response to the First Letter of Facts, paragraphs 40-45. Response to the Second Letter of Facts, paragraphs 75-100.

⁸³⁴ Response to the Article 6(1)(c) decision, paragraphs 286-296.

⁸³⁵ Response to the SO, paragraph 309-326.

⁸³⁶ Response to the First Letter of Facts, paragraphs 46-47.

⁸³⁷ Response to the Article 6(1)(c) decision, paragraph 297.

maintains that the Commission has failed to address market feedback presented in the Response to the SO which would confirm that CSSC produces good quality LLNGCs⁸³⁸ and that it disregards such market feedback based largely on a [...] statement not assessed in context.⁸³⁹ Moreover, the Notifying Party argues that the Commission would dismiss [...] views on [...] quality given after the SO response, assuming that it is biased.⁸⁴⁰ In the Response to the Second Letter of Facts, the Notifying Party argues that the Commission would have failed to establish the threshold at which CSSC's price differential is such that customers would buy from it even accounting for a perceived reduction in quality.⁸⁴¹

- (599) Third, as regards delivery time, the Notifying Party argues that faster delivery time is not an important parameter of competition and CSSC offers very fast delivery of [...] months. According to the Notifying Party, there are no concerns as a result of slot availability as customers have been able to obtain desired slots for LLNGCs and there is over-capacity on the market. Likewise, there is no objective evidence that CSSC is not as good as the three main Korean shipbuilders as regards timely delivery and it is foreseeable that any differences between the Parties and CSSC will disappear.⁸⁴² In the Response to the Second Letter of Facts, the Notifying Party argues that CSSC's delivery time are, in any event, improving.⁸⁴³ In the Response to the First Letter of Facts, the Notifying Party further argues that the Commission would have focussed mostly on the parameters confirmed to be of a lesser importance by the market investigation, such as propulsion systems, delivery time, know-how, project management, supervision, equipment supplier views and containment system technology.⁸⁴⁴
- (600) Fourth, in the Response to the SO, the Notifying Party submits that even if CSSC would not be considered as competitive as the Parties (especially on quality), it can still exercise a competitive constraint because it offers a lower price than the Parties⁸⁴⁵ (as also maintained in the Response to the First Letter of Facts⁸⁴⁶ and to the Second Letter of Facts⁸⁴⁷) and better financing conditions and therefore offers LLNGCs at a price / quality ratio which will attract customers.⁸⁴⁸ The Notifying Party submits that the facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders would have increased the competitive position of Chinese shipbuilders significantly.⁸⁴⁹ There would also be a tendency among customers to request similar pricing and/or financing conditions to those provided by Chinese banks and leasing companies when placing orders for vessels.
- (601) Fifth, according to the Notifying Party the ability of shipbuilders to offer after-sale services does not play a role in obtaining orders as shipbuilders do not normally

⁸³⁸ Response to the First Letter of Facts, paragraphs 48-50.

⁸³⁹ Response to the First Letter of Facts, paragraphs 51-53.

⁸⁴⁰ Response to the First Letter of Facts, paragraphs 54-55.

⁸⁴¹ Response to the Second Letter of Facts, paragraph 75 and ff.

⁸⁴² Response to the Article 6(1)(c) decision, paragraph 280.

⁸⁴³ Response to the Second Letter of Facts, paragraphs 75-100.

⁸⁴⁴ Response to the First Letter of Facts, paragraphs 60-63. See also Response to the Second Letter of Facts, paragraphs 75-100.

⁸⁴⁵ Response to the SO, paragraphs 270-271.

⁸⁴⁶ Response to the First Letter of Facts, paragraphs 56-59.

⁸⁴⁷ Response to the Second Letter of Facts, paragraphs 75 and ff, paragraphs 101-115.

⁸⁴⁸ Response to the SO, paragraphs 263-265.

⁸⁴⁹ Response to the Article 6(1)(c) decision, paragraphs 302-306.

repair vessels or provide any technical or maintenance support to ship owners outside of the warranty period (which typically goes on for one to two years following the delivery).⁸⁵⁰ Instead, there are, according to the Notifying Party, companies which provide repair and maintenance services to ship owners, including GTT licenced repair shipyards which work together with GTT and provide ship owners with all technical assistance and repair services related to the cargo containment system.

(602) Sixth, according to the Notifying Party, CSSC's strength and capacity goes beyond Hudong and includes other yards of the CSSC group and CSSCL (following the "merger" with CSIC).⁸⁵¹ In the Response to the First Letter of Facts⁸⁵² and to the Second Letter of Facts,⁸⁵³ the Notifying Party further maintains that CSSC's capacity is larger than its previous output, considering its capacity expansion plans. Indeed, the Notifying Party maintains that CSSC's alleged expansion to up to [...] LLNGCs would be completed⁸⁵⁴ and that the Commission would use these facts based largely on [...]’s outdated statements from mid-2020.⁸⁵⁵ Moreover, in the Response to the Second Letter of Facts, the Notifying Party argues that there would be a stark difference in the Commission's approach to assessing SHI's and CSSC's LLNGC capacity and that such a difference would indicate bias.⁸⁵⁶ The Notifying Party also claims that the Commission would have not addressed the likelihood of entry by other CSSC's yards.⁸⁵⁷

(B) The Commission's assessment

(603) The Commission investigated whether and, if so, to what extent CSSC (Hudong), (the only Chinese shipbuilder which has received orders for LLNGCs thus far), would constrain the merged entity post-Transaction.

(604) Based on the market investigation, the Commission considers that (i) CSSC (Hudong) does not at this stage exert a sufficient competitive constraint over the Parties, that (ii) none of the other Chinese shipbuilders (neither of those others has received any orders of LLNGCs so far) currently exerts any sort of competitive constraint and that (iii) after the Transaction, the situation is unlikely to change for a number of reasons.

a) *Customers seldom consider buying an LLNGC from a Chinese shipbuilder: a majority of customers have never ordered LLNGCs from a Chinese shipbuilder.*

(605) First, the Commission analysed customers' behaviour vis-à-vis shipbuilders located in China. This analysis revealed that generally, Chinese shipbuilders are more seldom, if at all, contacted by customers when looking to order an LNGC and an LLNGC in particular. Indeed, the majority of customers that replied to the market investigation responded that they have not contacted either formally or informally, any Chinese shipbuilder when looking to order conventional LLNGCs in the

⁸⁵⁰ Response to the Article 6(1)(c) decision, paragraphs 307-310.

⁸⁵¹ Response to the SO, paragraph 278-281 and 355-377.

⁸⁵² Response to the First Letter of Facts, paragraphs 101-113.

⁸⁵³ Response to the Second Letter of Facts, paragraph 75 and ff, paragraphs 116-130.

⁸⁵⁴ Response to the First Letter of Facts, paragraphs 103-108.

⁸⁵⁵ Response to the First Letter of Facts, paragraphs 109-113. See also the Response to the Second Letter of Facts, paragraph 75 and ff.

⁸⁵⁶ Response to the Second Letter of Facts, paragraphs 142-144.

⁸⁵⁷ Response to the First Letter of Facts, paragraphs 114-117. See also Response to the Second Letter of Facts, paragraphs 131-133.

2014-2019 period.⁸⁵⁸ Those customers who contacted a Chinese shipbuilder for ordering an LLNGC, mentioned mostly CSSC (Hudong).⁸⁵⁹

- (606) Second, the majority of customers that responded to the market investigation mentioned CSSC (Hudong) as the most credible of the Chinese shipbuilders when it comes to LNGCs.⁸⁶⁰ However, some caveats were expressed even in regard to CSSC. In this context, one customer stated that *“we are only aware of one Chinese shipbuilder capable of building LNGCs of the size in which we are interested (174,000 cbm and larger) and we are not impressed by their track record in terms of delivery time and quality”*.⁸⁶¹
- (607) Third, as concerns the actual orders, the majority of customers that responded to the market investigation explained that they have never ordered LNGCs from a Chinese shipbuilder.⁸⁶² All customers which responded that they did order LNGCs from a Chinese shipbuilder, did so from CSSC (Hudong).⁸⁶³ Amongst those which have never ordered LNGCs from a Chinese shipbuilder, some customers explained they have contacted them for a price quote for LLNGCs (CSSC). One of those explained that *“for large ships they are not competitive on price and design.”*⁸⁶⁴ A customer [...]. This shows that CSSC (Hudong) was considered because [...] and not because it exerts a significant competitive constraint on the Parties. In fact that customer has stated that *“[...] only the three Korean (HHIH, DSME and SHI) are the most competitive and attractive ones when it comes to conventional LNG carriers”*⁸⁶⁵ and that *“CSSC does not have the capacity to build [...] to meet [...] needs so it can only supplement the order. [...] it does not have enough track-record. [...] As with any modern large shipbuilding project where the builder does not have a substantial track record, building in China requires additional supervision from the customer side.”*⁸⁶⁶
- (608) As to the argument made by the Notifying Party in the Memorandum submitted on 20 May 2020⁸⁶⁷ and in the Response to the Second Letter of Facts⁸⁶⁸ that CSSC (Hudong) is already a strong competitor as demonstrated by its performance in 2020 and in particular the fact that [...], the Commission notes that in response to an RFI, [...] has informed the Commission that *“[i]n 2020, [...] have not received any firm orders to build large LNG carriers so far. In 2020, Hudong-Zhonghua signed with [...] “vessel reservation agreements” [...] but these are not “firm” orders”*.⁸⁶⁹ In a later 2020 RFI, [...] provided the Commission with an update on the firm orders received in the course of 2020, stating that *“[i]n 2020, Hudong-Zhonghua received [...]*

⁸⁵⁸ Replies to question 38 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁸⁵⁹ Replies to questions 38.1 and 38.2 of Questionnaire Q8 to Customers [DOC ID: 3241]. Only one customer mentioned also Dalian Shipbuilding Industry Company (DSIC) and COSCO’s DACKS; this customer in the end chose CSSC (Reply of [...] to question 38.4 of Questionnaire Q8 to Customers). [DOC ID: 3241]

⁸⁶⁰ Replies to question 24 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁸⁶¹ Replies to question 24 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁸⁶² Replies to question 25 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁸⁶³ Replies to question 25.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁸⁶⁴ Replies to question 25.2 of Questionnaire Q3 to Customers. [DOC ID: 3236]

⁸⁶⁵ Minutes of the conference call with [...] dated 25 February 2020, paragraph 6. [DOC ID: 2350]

⁸⁶⁶ Minutes of the conference call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2350]

⁸⁶⁷ The Notifying Party’s Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 2b.

⁸⁶⁸ Response to the Second Letter of Facts, paragraphs 75-100.

⁸⁶⁹ [...] response to Commission RFI to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020, question 4 and follow-up question 4, pages 2-3. [DOC ID: 3330].

*firm order dated [...] of [...] 174,000m³ LNG ships, with the customer being [...].*⁸⁷⁰ Moreover, the Commission notes that [...] has exercised [...] options for membrane conventional LLNGCs with CSSC (Hudong) on [...].⁸⁷¹ Based on the fact that, according to clauses [...] and [...] of [...]’s agreement with [...].⁸⁷², [...] retains some right to revoke the exercised options with limited penalties to be paid and that such options were exercised in the course of 2021, the Commission considers that [...]’s statement on 2020 orders is still valid. The Commission also considers that the above-mentioned clauses, although related to [...] agreement with [...], are likely to be applicable to CSSC. Indeed, [...] stated that “[...] generally [...] the essential structure and terms of each of the SSAs [...] are substantially similar in respect of the slot declaration mechanism, rights to revoke declarations [...]”.⁸⁷³

- (609) The Commission notes that [...] did not attribute the fact that [...] had reserved slot capacity with CSSC (Hudong) to any alleged capability of CSSC (Hudong) to exert a sufficient or significant competitive constraint. Rather, [...] attributed this fact to a condition that China requires to agree to import LNG from third countries. Indeed, as shown in an internal document of [...].⁸⁷⁴ In another internal document of [...].⁸⁷⁵ [...] ⁸⁷⁶ [...],⁸⁷⁷ it is not due to the alleged lower price offered by CSSC (Hudong) to [...] for LLNGCs with the same specifications as Korean shipbuilders’ that [...] exercised [...].
- b) *Within the CSSC group, only Hudong Zhonghua is currently and in the near future capable of producing LLNGCs and has an actual capacity limited to up to [...] LLNGCs a year and up to [...] LLNGCs a year after expansion .*
- (610) As concerns the capability of Chinese shipbuilders to build LLNGCs the results of the market investigation are clear in that CSSC (Hudong) is the only Chinese shipbuilder capable of building LLNGCs.⁸⁷⁸ As one customer stated: “*in general the Chinese shipbuilder having experience in large scale LNG carriers is Hudong Zhonghua of CSSC Group (...). At this moment other Chinese shipyards have no experience in building large scale LNG carriers therefore we may be reluctant to order.*”⁸⁷⁹ Another customer explained that “*Hudong is currently the only Chinese yard to our knowledge that has capability to deliver conventional (large scale) LNG*

⁸⁷⁰ [...] reply to question 2 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053] The Commission notes that, as shown by the most recent Clarksons data provided by the Notifying Party in reply to question 38 of RFI 67, [...]. In 2021 (up to 30 September 2021), as shown by the most recent Clarksons data provided by the Notifying Party in reply to question 38 of RFI 67, [...]. The Commission considers that none of the 2020 or 2021 orders received by CSSC can be qualified as a performance which proves that CSSC is already a strong competitor in the LLNGC market. Indeed, DSME received orders for [...] LLNGCs in 2020 and firm orders for [...] LLNGCs in 2021 (up to 30 September 2021), while HHI received firm orders for [...] LLNGCs in 2020 and firm orders for [...] LLNGCs in 2021 (up to 30 September 2021).

⁸⁷¹ [...]’s reply to question 1, 1(a), 1(b), 1(c) of RFI 5 to [...] of 11 October 2021. [DOC ID: 5974]

⁸⁷² The Notifying Party’s reply to question 3 of RFI 45.

⁸⁷³ [...]’s reply to clarification question to question 1 of RFI 5 to [...] of 11 October 2021. [DOC ID: 5974]

⁸⁷⁴ The Notifying Party’s reply to question 6 of RFI 45, Annex Q6.2.37, page 3.

⁸⁷⁵ The Notifying Party’s reply to question 6 of RFI 45, Annex Q6.2.32, pages 1-6.

⁸⁷⁶ The Notifying Party’s reply to question 6 of RFI 45, Annex Q6.2.32, page 4.

⁸⁷⁷ Response to the Second Letter of Facts, paragraph 88.

⁸⁷⁸ See Replies to question 37 of Questionnaire Q8 to Customers. [DOC ID: 3241], where a large majority of customers mentioned CSSC (Hudong) as being capable of building LLNGCs. Only a small minority mentioned COSCO’s NACKS and DACKS. The Commission considers that COSCO’s NACKS and DACKS do not qualify as a credible entrant in the global market for LLNGCs in the near future, for the reasons set out in **Section 8.3.8.3 (C)**.

⁸⁷⁹ Replies to question 41.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

carriers at present”⁸⁸⁰ With another customer concurring that “CSSC (Hudong) is the only Chinese shipbuilder that has demonstrated that it can build large conventional LNG carriers.”⁸⁸¹ [...] ⁸⁸² According to another customer CSSC (Hudong) is not only the only Chinese shipbuilder capable of building conventional LLNGCs but also “the only Chinese shipbuilder interested in building large conventional LNG carriers.”⁸⁸³ According to [...], CSSC (Hudong), “the only Chinese shipbuilder which has built large LNG carriers.”⁸⁸⁴ [...].⁸⁸⁵

- (611) In its Response to the SO (para. 278, 355), the Notifying Party submitted that the Commission does not acknowledge CSSC’s strength because it only assesses CSSC’s competitiveness by reference to Hudong Zhonghua’s size, capability and capacity.
- (612) However, contrary to the Notifying Party claims, the Commission considers that the evidence on the file shows that within the CSSC group (the only Chinese shipbuilder which has received orders for LLNGCs thus far) only Hudong Zhonghua is currently and in the near future capable of producing LLNGCs and that its capacity is limited to up to [...] LLNGCs a year and up to [...] LLNGCs a year after expansion (see below). Contrary to what argued by the Notifying Party,⁸⁸⁶ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁸⁸⁷
- (613) First, at the outset, [...] clarified to the Commission that the CSSC group comprises the following yards⁸⁸⁸:

Table 32 Yards in CSSC group

No.	Name of the legal entities	Location
1	Jiangnan Shipyard (Group) Co., Ltd.	Shanghai
2	Hudong-Zhonghua Shipbuilding Co., Ltd.	Shanghai
3	Guangzhou Shipyard International Company Limited	Guangzhou
4	CSSC Huangpu Wenchong Dockyard Co., Ltd.	Guangzhou
5	CSSC Guangxi Shipbuilding and Offshore Engineering Co., Ltd.	Qinzhou
6	Shanghai Waigaoqiao Dockyard Co., Ltd.	Shanghai
7	CSSC Chengxi Shipyard Co., Ltd.	Jiangyin

Source: [...]

- (614) Second, [...] further informed the Commission that within CSSC group, only Hudong-Zhonghua shipyard is capable of building LLNGCs: “Currently, among all the subsidiaries and/or shipyards within CSSC group, only Hudong-Zhonghua shipyard is capable of building large LNG carriers. Hudong-Zhonghua only has one manufacturing line, and there is no No. 1 dock or No. 2 dock. Hudong-Zhonghua can

⁸⁸⁰ Replies to question 42 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁸⁸¹ Minutes of the conference call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2350]

⁸⁸² [...].

⁸⁸³ Minutes of the conference call with [...] dated 18 February 2020, paragraph 6. [DOC ID: 2839]

⁸⁸⁴ Minutes of the conference call with [...] dated 21 February 2020, paragraph 11. [DOC ID: 2530]

⁸⁸⁵ Minutes of the conference call with [...] dated 7 February 2020, paragraph 5. [DOC ID: 2357]

⁸⁸⁶ See, inter alia, the Response to the First Letter of Facts, paragraph 101.

⁸⁸⁷ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

⁸⁸⁸ [...] reply to question 1.b of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

*deliver at most around [...] large LNG carriers per year.*⁸⁸⁹ Contrary to what has been argued by the Notifying Party,⁸⁹⁰ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁸⁹¹

- (615) This maximum current capacity of Hudong-Zhonghua, including its subsidiaries is limited to up to [...] LLNGCs . As explained by [...]: *“By referring to [...] large LNG carriers per year, we mean the entire Hudong-Zhonghua including all its subsidiaries/yards and also including Shanghai Jiangnan Changxing Shipbuilding Co., Ltd., which is controlled by Hudong-Zhonghua.”*⁸⁹² Contrary to what argued by the Notifying Party,⁸⁹³ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁸⁹⁴
- (616) Third, Hudong-Zhonghua is planning to expand its capacity from up to [...] LLNGCs a year (current) to a maximum of [...] LLNGCs a year (after expansion). [...] stated that: *“Currently, CSSC has a plan to expand the manufacturing line of Hudong-Zhonghua shipyard. The expansion will increase CSSC's ability of delivery of large LNG carriers. After expansion, the capacity to deliver large LNG carriers will be increased from [...] ships per year to [...] ships per year.”*⁸⁹⁵ Contrary to what argued by the Notifying Party,⁸⁹⁶ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁸⁹⁷
- (617) Again, this limited capacity expansion to up to [...] LLNGCs a year is the maximum capacity expansion of Hudong-Zhonghua, including its subsidiaries. [...] confirmed that: *“Yes, the expansion plan refers to the expansion of the entire Hudong-Zhonghua including all its subsidiaries/yards and also including Shanghai Jiangnan Changxing Shipbuilding Co., Ltd.”*⁸⁹⁸ Contrary to what has been argued by the Notifying Party,⁸⁹⁹ the Commission considers that the validity (until 2026 at the very least) of this specific statement is confirmed by [...] confirmation that by Hudong-Zhonghua CSSC group has consistently indicated that it should be understood as including all its subsidiaries.⁹⁰⁰
- (618) Furthermore, the Notifying Party has claimed that CSSC publicly stated that it intends to increase its capacity for LLNGC construction to [...] vessels per year before 2025.⁹⁰¹ The Commission specifically asked [...] to comment on public information regarding a planned capacity expansion to [...] to [...] LLNGCs a year and [...] dismissed that information, as follows: *“[t]he relevant information referred to in the above linked article [stating that CSSC (Hudong) is in the process of*

⁸⁸⁹ [...] reply to question 1 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁸⁹⁰ See, inter alia, Response to the First Letter of Facts, paragraph 101.

⁸⁹¹ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

⁸⁹² [...] reply to follow-up question to question 1 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁸⁹³ See, inter alia, Response to the First Letter of Facts, paragraph 101.

⁸⁹⁴ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

⁸⁹⁵ [...] reply to question 2 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁸⁹⁶ See, inter alia, Response to the First Letter of Facts, paragraph 101.

⁸⁹⁷ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

⁸⁹⁸ [...] reply to follow-up question to question 2 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁸⁹⁹ See, inter alia, Response to the First Letter of Facts, paragraph 101.

⁹⁰⁰ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

⁹⁰¹ Supplemental submission regarding the Notifying Party's observations on the continued access to the file granted on 21 October 2020, dated 24 November 2020, paragraph 37.

*expanding its LLNGCs capabilities as to accommodate the building of [...] is not acknowledged by [...], and we are not aware of the source of the relevant data so referred to.”*⁹⁰² Contrary to what argued by the Notifying Party,⁹⁰³ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁹⁰⁴ Therefore, in light not only of the above but also, overall, of what set out in this Section, in **Sections 8.3.4.2 (B) a) to o) and Section 8.3.7**, the Commission considers that there is no reasonable basis to assume that CSSC could produce more than up to [...] LLNGCs per year even after the capacity expansion⁹⁰⁵.

- (619) In an email to the case team dated 28 January 2021,⁹⁰⁶ the Notifying Party submitted, entirely on the basis of public sources, that CSSC (Hudong) would be expanding its LLNGCs capacity to up to [...] LLNGCs a year. Such an assumption relies entirely on the fact that, according to the article attached to its email to the case team, “*Hudong Zhonghua has started the relocation and construction of a plant for the production of LNG insulation boxes. [...] Each individual LLNGC normally requires the incorporation of approximately 14,000 LNG insulation boxes. After completion of the project, Hudong Zhonghua will have an annual production capacity of 260,000 LNG insulation boxes.*” The Commission considers that the alleged CSSC (Hudong)’s relocation and construction of a plant for the production of insulation boxes is not evidence of CSSC (Hudong)’s being able to produce, after expansion, [...] LLNGCs a year.
- (620) In another email to the case team dated 7 January 2021,⁹⁰⁷ the Notifying Party, basing itself on public sources, submits that CSSC’s capacity expansion plans would show that “[...] CSSC already is and will be in the future exerting a meaningful competitive constraint on the Combined Entity post-Transaction”. This would be due to the fact that the article submitted would “confirm [that] [CSSC (Hudong)’s relocation project will inevitably positively impact CSSC’s capability, capacity and overall competitiveness to build LLNGCs, further confirming CSSC’s role as a viable fourth alternative in the LLNGC market next to the Parties and SHI (and other competitors) at the latest by 2023”.⁹⁰⁸
- (621) Indeed, while the Notifying Party relies on a press article and admits itself (in the note attached to the email) that CSSC may outsource these boxes to other shipbuilders, the Commission has conducted its own estimates of CSSC (Hudong)’s capacity and probed them with [...]. Contrary to what is argued by the Notifying Party,⁹⁰⁹ [...] confirmed that [...] LLNGC capacity estimates before and after expansion plans are still valid and will still be valid until 2026 at the very least.⁹¹⁰
- (622) Moreover, the Commission notes that the above article does not change the Commission’s assessment of CSSC’s capability and capacity for the following

⁹⁰² [...] reply to question 13.a of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹⁰³ See, inter alia, the Notifying Party’s Response to the First Letter of Facts, paragraph 101.

⁹⁰⁴ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

⁹⁰⁵ The maximum capacity of [...] calculated for CSSC in earlier Sections, represents a strong upper bound for CSSC’s capacity. This exemplifies the leniency of those capacity calculations. In any event, as explained in **Section 8.3.7.2 (B) c)**, even with CSSC’s maximum capacity at [...] LLNGCs, the Commission’s assessment on CSSC (Hudong)’s LLNGC annual capacity would not change.

⁹⁰⁶ The Notifying Party’s email to the case team “Updates on developments in the LLNGC market” dated 28 January 2021.

⁹⁰⁷ The Notifying Party’s email to the case team “CSSC Capacity Expansion Plans” dated 7 January 2021.

⁹⁰⁸ The Notifying Party’s email to the case team “CSSC Capacity Expansion Plans” dated 7 January 2021.

⁹⁰⁹ See, inter alia, the Notifying Party’s Response to the First Letter of Facts, paragraph 101.

⁹¹⁰ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

reasons. First, the Commission notes that the Shanghai Jiangnan Changxing Shipbuilding yard (“CSSC (SCS)”) is part of CSSC (Hudong) so already included in the Commission’s assessment of CSSC (Hudong) in terms of capability and capacity.⁹¹¹ CSSC (Hudong)’s capacity is therefore maximum [...] LLNGCs a year after expansion plans. This is confirmed by [...]: “Yes, the expansion plan refers to the expansion of the entire Hudong-Zhonghua including all its subsidiaries/yards and also including Shanghai Jiangnan Changxing Shipbuilding Co., Ltd.”⁹¹² Contrary to what is argued by the Notifying Party,⁹¹³ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁹¹⁴ Second, as explained above (**Section 8.3.7**), LLNGC capacity is not just about dock space, but also about special equipment/facilities, know-how, etc. Third, as explained below in **Sections 8.3.4.2 (B) d), e), f) and h)** below, the Commission does not consider that CSSC (Hudong) is on par with the three big Korean shipbuilders.

(623) In addition, [...] confirmed that [...] will be able to build no more than [...] LLNGCs per year after the capacity expansion: “[CONFIDENTIAL] [NON-CONFIDENTIAL SUMMARY: “no more than [...] LLNGCs a year after expansion plans”]”⁹¹⁵; and, “[CONFIDENTIAL] [NON-CONFIDENTIAL SUMMARY: “no more than [...] LLNGCs a year”]”⁹¹⁶ Contrary to what is argued by the Notifying Party,⁹¹⁷ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁹¹⁸ Therefore, the Commission considers that there is no basis to assume that CSSC could produce more than up to [...] LLNGCs per year after the capacity expansion⁹¹⁹. As a result, the Commission considers that there is no basis to assume that CSSC could produce more than up to [...] LLNGCs per year after the capacity expansion.

(624) Fourth, the Notifying Party has also claimed that [...] stated that [...] would “expand its LLNGC specific capacity if the LNG market continues to grow”.⁹²⁰ However, when looking at the relevant statement of [...] in its context, it is clear that this remains a purely hypothetical scenario. First, [...] did not state that [...] will expand [...] capacity if the LLNGC market grows. The question asked to [...] was under which condition [...] would proceed with further expansion of LLNGC specific capacity.⁹²¹ [...] reply was: “Taking into account the development of international LNG market, [...] will only expand [...] LLNGCs specific capacity if the LNG market continues to grow.”⁹²² This means that for [...] to expand capacity, it would be required that the LLNGC market continues to grow. However, it does not mean that

⁹¹¹ [...] reply to follow-up question to question 2 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁹¹² [...] reply to follow-up question to question 2 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁹¹³ See, inter alia, the Notifying Party’s Response to the First Letter of Facts, paragraph 101.

⁹¹⁴ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

⁹¹⁵ [...] reply to question 13.b of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹¹⁶ [...] reply to question 15 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹¹⁷ See, inter alia, the Notifying Party’s Response to the First Letter of Facts, paragraph 101.

⁹¹⁸ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

⁹¹⁹ The maximum capacity of [...] calculated for CSSC in **Section 8.3.7**, represents a strong upper bound for CSSC’s capacity. This exemplifies the leniency of those capacity calculations. In any event, as explained in **Section 8.3.7.2 (B) c) and e)**, even with CSSC’s maximum capacity at [...] LLNGCs, the Commission’s assessment would not change.

⁹²⁰ Supplemental submission regarding the Notifying Party’s observations on the continued access to the file granted on 21 October 2020, dated 24 November 2020, paragraph 37.

⁹²¹ Question 14 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹²² [...] reply to question 14 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

[...] is planning to or that it will actually further expand its LLNGC specific capacity. Second, and in any event, there are currently no other capacity expansions foreseen at CSSC. In this respect, [...] stated that: “[...] currently [...] not have any other capacity expansion plans related to large LNG carriers.”⁹²³ Contrary to what is argued by the Notifying Party,⁹²⁴ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁹²⁵ In addition, [...] has not considered switching part of the capacity allocated to other large vessel types (e.g., oil tankers or containerships) to the manufacture of LLNGCs.⁹²⁶ Contrary to what is argued by the Notifying Party,⁹²⁷ the Commission considers that the validity (until 2026 at the very least) of this specific statement is confirmed by [...] confirmation CSSC group does not currently have any other capacity expansion plans related to LLNGCs.⁹²⁸ Therefore, in light not only of the above but also, overall, of what set out in this Section and in **Sections 8.3.4.2 (B) a) to o)** below and **Section 8.3.7**, the Commission considers that there is no reasonable basis to assume that CSSC could produce more than up to [...] LLNGCs per year even after the capacity expansion.⁹²⁹

- (625) In addition, [...] had indicated in Summer 2020 that Hudong–Zhonghua Shipbuilding Co., Ltd. (Hudong–Zhonghua) was the only shipyard that will produce LLNGCs within the CSSC group until at least 2025.⁹³⁰ Contrary to what is argued by the Notifying Party,⁹³¹ [...] confirmed in Summer 2021 that this statement is still valid and will still be valid until 2026 at the very least.⁹³² In that connection, [...] stated that “[...] CSSC (Hudong) is the only Chinese shipbuilder that has demonstrated that it can build large conventional LNG carriers. [...]”⁹³³ Moreover, as explained in **Section 8.3.6**, the portion of that [...] order reserved from CSSC is dedicated to Hudong-Zhonghua:⁹³⁴ “[o]n 22 April 2020 [...] entered into a shipyard slot agreement (“SSA”) with CSSC (Hudong) [...]”⁹³⁵ This has been subsequently confirmed by [...]: “[...] [...] confirmed that [...]’s CSSC Hudong ship slot agreement is with Hudong-Zhonghua Shipbuilding (Group), Co., Ltd., a subsidiary of CSSC, and not the CSSC parent enterprise or with other CSSC’s yards/subsidiaries [...]”⁹³⁶ As explained in the below paragraphs, [...] estimates that such portion, still for delivery over/from 2024-2027, would take up to [50-60]% of CSSC (Hudong) capacity.⁹³⁷
- (626) Fourth, [...] also shares the view that the capacity of CSSC is around [...] to [...] LLNGCs per year. According to [...]: “*In terms of shipbuilders’ capacity*

⁹²³ [...] reply to question 3 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁹²⁴ See, inter alia, the Notifying Party’s Response to the First Letter of Facts, paragraph 101.

⁹²⁵ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

⁹²⁶ [...] reply to question 17 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹²⁷ See, inter alia, the Notifying Party’s Response to the First Letter of Facts, paragraph 101.

⁹²⁸ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

⁹²⁹ The maximum capacity of [...] calculated for CSSC in **Section 8.3.7**, represents a strong upper bound for CSSC’s capacity. This exemplifies the leniency of those capacity calculations. In any event, as explained in **Section 8.3.7**, even with CSSC’s maximum capacity at [...] LLNGCs, the Commission’s assessment on CSSC (Hudong)’s LLNGC annual capacity would not change.

⁹³⁰ [...] reply to question 1.d of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹³¹ See, inter alia, the Notifying Party’s Response to the First Letter of Facts, paragraph 101.

⁹³² [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

⁹³³ Minutes of the call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2350]

⁹³⁴ [...]’s reply to question 2(c) of RFI 4 to [...] dated 3 March 2021. [DOC ID: 4895]

⁹³⁵ [...]’s reply to RFI 1 to [...] dated 8 May 2020. [DOC ID: 3123]

⁹³⁶ Minutes of the conference call with [...] dated 19 October 2021, paragraph 3. [DOC ID: 5986]

⁹³⁷ Minutes of the conference call with [...] dated 19 October 2021, paragraph 6. [DOC ID: 5986]

estimates, [...] provided the following ones: (...) CSSC a maximum of [...] LLNGCs a year, (...). Regarding CSSC, it is difficult to estimate their future market shares”.⁹³⁸ Moreover, “[...] [CONFIDENTIAL] [NON-CONFIDENTIAL SUMMARY: “as it happens in every market in which quantitative and qualitative track record is extremely important, the currently active three biggest Korean shipbuilders are best in class, leaving a measurable gap between them and the rest, in particular in terms of time required for vessels delivery and the number of supervisory staff considered by each stakeholder to be required per vessel. It requires significant amount of time and significant effort for the rest to gain market shares in the worldwide market for LLNGCs”].⁹³⁹ As explained in **paragraphs (1042) and (1043)**, it took [...] years for CSSC (Hudong) to sell to its first non-Chinese customer, and [...] years to sell to its first European customer. After about [...] years of activity, CSSC still has <[5-10]% of the market.

- (627) As a further indication of the limitation of CSSC (Hudong)’s capacity, a customer has estimated that its potential orders alone could occupy [50-60]% of CSSC (Hudong)’s capacity. The customer stated: “We roughly estimate [...]’s procurement project will occupy approx. [20-30]% of DSME, HHI and SHI total LNG shipbuilding capacity for deliveries from 2024-2027, but there is still a large range of outcomes for the total number of vessel eventually ordered. For CSSC Hudong, we roughly estimate potential orders from [...]’s procurement project will be close to [50-60]% of LNG shipbuilding capacity.”⁹⁴⁰ These estimates were subsequently confirmed by [...].⁹⁴¹ This was confirmed by [...], which considers that: “because it has limited slots, Hudong’s available production capacity for LLNGCs are already nearly filled for the next few years with just the [...] order and Mark III LLNGC orders from Hudong’s mother company CSSC.”⁹⁴²
- (628) Moreover, contrary to what is argued by the Notifying Party in its Response to the Second Letter of Facts,⁹⁴³ there is no difference in the Commission’s approach to assessing SHI’s and CSSC’s capacity. Indeed, as explained in this Section, **Section 8.3.4.1** and **Section 8.3.7**, while [...] capacity estimates match with the Commission’s calculations and market feedback, [...] statements do not.
- (629) Moreover, as explained in **Section 8.3.8**, intra-group know-how transfer is not impossible but entails many challenges and is likely to take a significant amount of time. Therefore, it is unlikely that any of the other yards of CSSC group is likely to enter the LLNGC market in a timely and sufficient manner. For these reasons and for the reasons outlined in **Section 8.3.8.3 (C) vii)** of this decision, the Notifying Party’s argument pursuant to which the Commission would have not addressed the alleged likelihood of entry by other yards of CSSC’s,⁹⁴⁴ is immaterial.
- (630) The Parties’ internal documents confirm [...].⁹⁴⁵
- (631) Similarly, in one of DSME’s internal documents [...].⁹⁴⁶ [...].⁹⁴⁷

⁹³⁸ Minutes of the conference call with [...] dated 22 July 2020, paragraph 15. [DOC ID: 4032]

⁹³⁹ Minutes of the conference call with [...] dated 22 July 2020, paragraph 15. [DOC ID: 4032]

⁹⁴⁰ [...] reply to question 7.a of Commission RFI to [...] dated 28 July 2020 [DOC ID: 3922]

⁹⁴¹ Minutes of the conference call with [...] dated 19 October 2021, paragraph 6. [DOC ID: 5986]

⁹⁴² [...] observations on the SO, page 15. [DOC ID: 3851]

⁹⁴³ Response to the Second Letter of Fact,s paragraph 142 and ff.

⁹⁴⁴ Response to the Second Letter of Facts, paragraph 131 and ff.

⁹⁴⁵ [...].

- (632) Moreover, the Commission notes that in an internal document of DSME [...] ⁹⁴⁸ [...] ⁹⁴⁹ [...].
- (633) The Commission considers that these pieces of evidence confirms its finding that CSSC’s actual and foreseen capacity is limited.
- c) *CSSC has not managed to win firm orders for a significant number of LLNGCs lately and this will not significantly change in the near future.*
- (634) In this Section, the Commission finds that CSSC has not managed to win firm orders for a significant number of LLNGCs lately and that this will not significantly change in the near future for the following reasons.
- (635) First, the Commission found in **paragraph (608)** that in [...] CSSC had not received any firm orders for LLNGCs. In its Response to the SO (Section C.II.3.b)i(3)), the Notifying Party submitted that CSSC’s then most recent orders confirmed that it has become very competitive and would enable a further improvement in CSSC’s quality and overall competitiveness. In particular, the Notifying Party submitted in its Response to the SO (para. 273) that CSSC had managed to win orders for a significant number of vessels lately (even at time of the Commission’s assessment and following its Article 6(1)(c) Decision) and that CSSC secured orders of up to [...] LLNGCs. According to the Notifying Party (Response to the SO, footnote 262), these orders include [...] LLNGCs from [...] and [...] LLNGCs under a slot reservation agreement entered into with [...].
- (636) However, the Commission notes that [...] has stated in Summer [...] that *“In [...], Hudong-Zhonghua received [...] dated 30 June 2020 of [...] 174,000m³ LNG ships, with the customer being [...]”*⁹⁵⁰. These [...] orders [...] ⁹⁵¹. In addition, the Commission notes that [...] informed the Commission, in Summer [...], that it had only a few outstanding options: *“Hudong-Zhonghua has an outstanding option of [...] 174,000m³ LNG ships with the customer being [...], the option exercise date is 30 June 2021.”*⁹⁵² The Commission notes that, as shown by the most recent Clarksons database submitted by the Notifying Party,⁹⁵³ [...].
- (637) Moreover, in response to a question asking to list ongoing tenders at the end of July [...], agreements and order processes in which [...] is participating (or intending to participate) and which may lead to options or firm orders within the next 5 years (2020-2025), [...] has responded by giving the status of the following two projects in August 2020:
- (a) *“On [...] ship project, the berth retention agreement has been signed by the parties.”*⁹⁵⁴
- (b) *“Hudong-Zhonghua is still following up on [...] LNG ship project. The ship owner is yet to be determined.”*⁹⁵⁵

⁹⁴⁶ With regard to Chinese shipbuilders, the document states that “[...]”. DSME’s internal documents responsive to RFI 31, DSME email correspondence detailing meeting with London broker, pages 1-2, dated 25 September 2019, DSME-01076632. [DOC ID: 3064-82]

⁹⁴⁷ [...].

⁹⁴⁸ [...].

⁹⁴⁹ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.5, page 1.

⁹⁵⁰ [...] reply to question 2 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹⁵¹ The Notifying Party’s reply to question 38 of RFI 67, Annex Q38.

⁹⁵² [...] reply to question 3 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

⁹⁵³ The Notifying Party’s reply to question 38 of RFI 67, Annex Q38.

⁹⁵⁴ [...] reply to question 4 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

(638) A customer [...] has confirmed that options should not be viewed as firm orders. The customer stated: “[...] views all options under the ship slot agreements (“SSAs”) as “pure” options, with no firm shipbuilding commitment attached to any individual option. [REDACTED]”.⁹⁵⁶ The customer further explained why such options are used by customers: “The use of options for staggering ship orders provides “customers” such as [...] with flexibility in managing its timing, pricing and other risks associated with [...] of ships and the natural uncertainty/complexity that comes with developing large and capital-intensive LNG projects where transportation capacity is required. Due to the fact that, by [...]’ estimate, [90-100]% of the world’s commercially competitive LNG ship construction capacity sits in the hands of SHI, HHI and DSME, reserving shipbuilder capacity while maintaining some flexibility (with options rather than making firm orders) in such a concentrated market becomes a high priority for the overall project to be successful. [...] experience is that ship orders tend to come in waves, and when there is a lack of orders for a few months, some industry observers may argue that there is excess capacity. However, it is difficult to deny the fact that the commercially competitive capacity is concentrated in the hands of the big 3 Korean shipbuilders. In [...]’ view, overcapacity in the LNG shipbuilding market is much less of a concern than overconcentration. Even if there are arguably periods of excess capacity, this does not mitigate [REDACTED] concerns about supplier market power caused by a further concentration of shipbuilding capacity [REDACTED]”.⁹⁵⁷ The customer also stated that in the past, [50-60]% of options were actually exercised: “Between [...] and [...], [...] secured [...] options with HHI, DSME and SHI under a similar structure, with [...] of the options exercised. [REDACTED]”.⁹⁵⁸ In addition, as explained in **Section 8.3.4.2 (B) a**), [...] has reserved [...] with CSSC (Hudong) than with the three Korean shipbuilders. As noted by [...], “CSSC does not have the capacity to build the [...] so it can only supplement the order.”⁹⁵⁹ According to the Notifying Party, in June 2020, [...] had reserved capacity for [...] conventional LLNGCs at CSSC (Hudong) while it had reserved capacity for [...] conventional LLNGCs at HHI, DSME and SHI.⁹⁶⁰ [...] These agreements did not amount to firm orders for LLNGCs but are options which [...] could exercise in the future.⁹⁶² According to the Notifying Party, SHI had agreed to reserve up to [...] slots for vessels.⁹⁶³ According to the Notifying Party, [...] was not obliged to exercise any of the options with HHI and DSME.⁹⁶⁴ On the basis of the information provided by the Notifying Party at that time, of the total of [...] vessels reserved by [...], CSSC

⁹⁵⁵ [...] reply to question 4 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]. As explained in **Section 8.3.6**, the Commission notes that the Notifying Party claims in reply to question 11 of RFI 67 that the [...] LNG project would have been cancelled and converted into a non-LNG project. In case this were confirmed, the Commission’s assessment would not change.

⁹⁵⁶ [...] reply to question 1 of Commission RFI to [...] dated 28 July 2020. [DOC ID: 3922]

⁹⁵⁷ [...] reply to question 2 of Commission RFI to [...] dated 28 July 2020. [DOC ID: 3922]

⁹⁵⁸ [...] reply to question 3 of Commission RFI to [...] dated 28 July 2020. [DOC ID: 3922]

⁹⁵⁹ Minutes of the conference call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2350]

⁹⁶⁰ See email of the Notifying Party of 1 June 2020 at 18:40 and the related Reuters’ article. [DOC ID 3277]

⁹⁶¹ See email of the Notifying Party of 1 June 2020 at 18:40 and the related Reuters’ article. [DOC ID 3277]

⁹⁶² See email of the Notifying Party of 1 June 2020 at 18:40 and the related Reuters’ article. [DOC ID 3277]

⁹⁶³ See email of the Notifying Party of 1 June 2020 at 18:40 and the related Reuters’ article. [DOC ID 3277]

⁹⁶⁴ The Notifying Party’s reply to questions 1 and 2 of RFI 42.

(Hudong) could therefore obtain at most [...], of which, according to the Notifying Party, [...] were allegedly already confirmed.⁹⁶⁵

(639) Moreover, the Commission notes that the possible inclusion of a minimum commitment does not necessarily reflect a customer's perception of a shipbuilder's quality, especially in the [...] example, which [...] represents the [...] of LLNGCs and for that reason, as explained above, CSSC (Hudong) had to be considered. Indeed, “[...] it is not desirable for [...] to place the entire order at only one shipbuilder ([...] believes that it is also in the shipbuilders' interest not to reserve such a [...] capacity for only one customer). [...]”⁹⁶⁶ As further explained by [...], “[t]he bid with the minimum exercise obligation was selected where the shipbuilder's proposed discount to the conventional bid price was considered to offer enough value to agree to the proposed minimum commitment. The exercise or omission (or the seize) of the minimum exercise obligation [...] should not be interpreted to reflect [...]’s perceived relative quality of the relevant shipbuilder's LNG vessel. [...] [T]he inclusion of a minimum exercise obligation [...] does not necessarily depend on any shipbuilding quantitative or qualitative track record considerations. [...]”⁹⁶⁷

(640) Second, the Commission found that in 2021 (up to 30 September 2021), CSSC received [...].⁹⁶⁸ In the Response to the Second Letter of Facts,⁹⁶⁹ the Notifying Party notes that it had already explained to the Commission in its reply to RFI 67 that the [...] options with CSSC (Hudong) had, in fact, been exercised but that these orders are not yet recorded in Clarksons. In that regard, because of the [...] LLNGC ordered received by CSSC (Hudong) in 2021, the Notifying Party argues that “[s]uccessful delivery of these [...] vessels will increase CSSC's track record in building and delivering LLNGCs, and will only help CSSC improve the quality of its LLNGCs and speed of its delivery”.⁹⁷⁰ The Commission notes that, as made it very clear at paragraph 146(a) of the Second Letter of Facts, the above evidence was used by the Commission to support the argument that CSSC has not managed to win firm orders for a significant number of LLNGCs lately and that this will not significantly change in the near future. Indeed, in that regard, the Commission also notes, as explained in **Section 8.3.8**, that it took a significant amount of time and effort for CSSC (Hudong), which does not exert a sufficient competitive constraint on the Parties, to enter, obtain its limited market share in the LLNGC market.

(641) The Commission considers that the assessment in the above paragraph is not affected by [...]’s exercise of its options with CSSC (Hudong) in 2021. In that regard, according to the Notifying Party, in October 2021, [...] has already claimed [...] slots with CSSC (Hudong) and has still [...] slots with HHIH and [...] slots with DSME, with [...] firm orders received so far.⁹⁷¹ The Notifying Party does not

⁹⁶⁵ See email of the Notifying Party of 1 June 2020 at 18:40 and the related Reuters' article. [DOC ID 3277]. According to [...] there were no firm orders yet in June 2020 under the agreement with [...] ([...] response to Commission RFI to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020, question 4 and follow-up question 4, pages 2-3. [DOC ID: 3330]

⁹⁶⁶ Minutes of the conference call with [...] dated 25 February 2020, paragraph 4. [DOC ID: 2350]

⁹⁶⁷ [...] reply to question 1(b) of the Commission RFI 2 to [...] dated 3 June 2020. [DOC ID: 3365]

⁹⁶⁸ The Notifying Party's reply to question 38 of RFI 67, Annex Q38. In its reply to question 13 of RFI 67, the Notifying Party submits that CSC (Hudong) has received orders for [...] LLNGCs from [...] in June [...] and that these vessels are not recorded in Clarksons yet. The Commission notes that if this were correct, the Commission's assessment would not change.

⁹⁶⁹ Response to the Second Letter of Facts, paragraph 103.

⁹⁷⁰ Response to the Second Letter of Facts, paragraph 103.

⁹⁷¹ The Notifying Party's reply to question 29 of RFI 67.

provide further indications on how many of the CSSC (Hudong)'s and SHI's [...] options would be valid in October 2021.⁹⁷² On the basis of the information provided by the Notifying Party, of the total [...] options still valid (assuming all SHI's options remain valid), CSSC (Hudong) could therefore obtain at most [...] (quod non as this assumes all options with CSSC (Hudong) remained valid and including the [...] exercised options).⁹⁷³ The Commission asked [...] to provide the Commission with an update of the options status. [...] then informed the Commission that it has exercised, so far, a total of [...] options for [...] membrane conventional LLNGCs: [...].⁹⁷⁴ [...] confirmed it has reserved additional capacity for [...] membrane conventional LLNGCs at [...], [...] membrane conventional LLNGCs at [...], for a total of more than [...] additional slots for deliveries over/from the 2024-2027 period.⁹⁷⁵ This means that, of the total [...] options (including those exercised and those not exercised but still valid), CSSC (Hudong) can obtain around [10-20]%. Contrary to what is argued by the Notifying Party in the Response to the Second Letter of Facts,⁹⁷⁶ the [10-20]% calculated by the Commission is neither arbitrary⁹⁷⁷ nor meaningless. Indeed, contrary to what is argued by the Notifying Party in the same paragraph of the Response to the Second Letter of Facts, calculating the ratio of options exercised with CSSC (Hudong) over the total number of options exercised is meaningless as it would give only an ephemeral and unrealistic picture of reality, giving to CSSC (Hudong) more weight than what it really has. Indeed, such an approach, for example, would not take into account HHIH, [...]. Conversely, taking into account the ratio of CSSC (Hudong)'s exercised and non-exercised but still valid options over the total options (exercised and non-exercised but still valid options) gives a more accurate picture of the real weight of CSSC (Hudong) in the context of the [...] bid.

- (642) Third and in the light of the above, the Commission considers that it is unlikely that this will change significantly in the foreseeable future. Generally, [...] also indicated that it would still require a significant amount of time and effort for CSSC (Hudong) to gain market share: *“Regarding CSSC, it is difficult to estimate their future market shares” [CONFIDENTIAL] [NON-CONFIDENTIAL SUMMARY: “as it happens in every market in which quantitative and qualitative track record is extremely important, the currently active three biggest Korean shipbuilders are best in class, leaving a measurable gap between them and the rest, in particular in terms of time required for vessels delivery and the number of supervisory staff considered by each stakeholder to be required per vessel. It requires significant amount of time and significant effort for the rest to gain market shares in the worldwide market for LLNGCs”].*⁹⁷⁸
- (643) In conclusion, the Commission considers that CSSC has not managed to win firm orders for a significant number of LLNGCs lately and that this is unlikely to change significantly in the near future.

⁹⁷² The Notifying Party's reply to question 29 of RFI 67.

⁹⁷³ The Notifying Party's reply to question 29 of RFI 67.

⁹⁷⁴ [...] reply to question 1(a), (b), (c) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 5974]

⁹⁷⁵ See [...] reply to question 2, 2(a) 2(c), 2(d) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 5974]

⁹⁷⁶ Response to the Second Letter of Facts, paragraph 92.

⁹⁷⁷ Calculated as follows : [...].

⁹⁷⁸ Minutes of the conference call with [...] dated 22 July 2020, paragraph 15. [DOC ID: 4032]

d) *CSSC's LLNGC shipbuilding capabilities are not comparable to Korean shipbuilders under several competitive parameters thereby limiting competitiveness at present and in a foreseeable future.*

(644) In this Section, the Commission finds that CSSC (Hudong)'s LLNGC shipbuilding capabilities are not comparable to Korea shipbuilders (HHI, DSME and SHI) under several competitive parameters, thereby limiting its competitiveness at present and in the foreseeable future for the following reasons.

(645) First, the Commission considers that quality differences between LNGCs of different shipbuilders exist despite the role of classification process. Indeed, the Commission notes that during the market investigation, a majority of customers stated that there could still be quality differences between LLNGCs built by different shipbuilders although they are certified by classification societies.⁹⁷⁹ Respondents indicated for instance:

(a) *"the role of the classification is only to verify the compliance of the constructed vessel with applicable rules but not to check the quality of the construction as an owner does"*⁹⁸⁰;

(b) *"(i)rrespective of the fact that different shipbuilders are all certified by classification societies, there are many differences in terms of experience in design and construction of the conventional LNG carriers"*⁹⁸¹;

(c) *classification societies control "whether the vessel is safe they do not check technical differences or whether one specification is more efficient than another specification"*⁹⁸²;

(d) *"Classification societies only preserve the minimum standards of quality. Most shipowners have their own standards of quality which go above and beyond minimum class standards"*⁹⁸³;

(e) *"Whilst all Classification Societies operate to a set standard as defined by the International Association of Classification Societies (IACS) the quality may vary dependent upon the experience of the shipbuilder"*⁹⁸⁴;

(f) *"Class role is not specifically as a guarantor of quality. As such it is possible for different shipyards with the same Class to have differing quality, but in compliance with the Classifications societies rules set for construction of ships. Each shipyard will also operate under differing quality standards and management systems."*⁹⁸⁵

(646) As explained in **Section 8.3.8.3 (A)**, this is also confirmed by shipbuilders and classification societies interviewed by the Commission. In this respect, in the Response to the First Letter of Facts, the Notifying Party maintained that the Commission continues to rely on an untenable concept of LLNGC differentiation as LLNGCs would be only be at a lower degree of differentiation and capacity would be therefore capable of constraining.⁹⁸⁶ Indeed, according to the Notifying Party the

⁹⁷⁹ Replies to question 36 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁹⁸⁰ Replies to question 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁹⁸¹ Replies to question 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁹⁸² Replies to question 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁹⁸³ Replies to question 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁹⁸⁴ Replies to question 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁹⁸⁵ Replies to question 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

⁹⁸⁶ Response to the First Letter of Facts, paragraphs 40-45.

Commission would have overlooked that customers are sophisticated and choose suppliers based on the total cost of ownership, since all customers would purchase LLNGCs for the same reason: transporting LNG at the lowest cost.⁹⁸⁷ In this framework, according to the Notifying Party, customers would evaluate different factors presented by shipbuilders (such as the boil-off-rate) but they would convert them into costs and select the best cost-effective product.⁹⁸⁸ If LLNGCs were meaningfully differentiated, there would be different customer groups.⁹⁸⁹ Moreover, the Notifying Party maintains that CSSC has achieved a better price competitiveness.⁹⁹⁰ The Commission considers these arguments immaterial for the following reasons. First, even if the Notifying Party's argument that LLNGCs are not differentiated at a point where capacity would be the market driver and therefore would, regardless of the shipbuilder's capabilities, effectively constrain the market were consistent with the outcome of the market investigation (*quod non*), as already stated in **Section 8.3.7** and **Section 8.3.4.2(B) b)**, CSSC's LLNGC capacity is limited. Indeed, according to [...], Hudong-Zhonghua can deliver at most [...] LLNGCs per year and in any event at most [...] LLNGCs per year after the planned expansion of Hudong-Zhonghua manufacturing line.⁹⁹¹ Contrary to what argued by the Notifying Party,⁹⁹² [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.⁹⁹³ CSSC (Hudong) also has a much lower capacity than any of the Korean shipbuilders (see **Section 8.3.7**). Second, contrary to what is argued by the Notifying Party,⁹⁹⁴ [...]. Third, as mentioned in **Section 8.3.2** and in this Section, the market investigation showed that customers attach more importance to quality and that CSSC is not on par with the three big Koreans.

- (647) Moreover, on the alleged price competitiveness of CSSC and on the argument that this would offset the fact that CSSC (Hudong)'s LLNGC shipbuilding capabilities are not comparable with the three big Korean shipbuilders under several parameters, the Commission notes that in an internal document of DSME [...].⁹⁹⁵ In any event, contrary to what is argued by the Notifying Party in the Response to the Second Letter of Facts⁹⁹⁶ and as already explained in **Section 8.3.4.2**, it is not due to the alleged lower price offered by CSSC (Hudong) to [...] for LLNGCs with the same specifications as Korean shipbuilders' that [...] exercised its options with CSSC (Hudong) before than with any of the other three shipbuilders but rather, amongst other factors explained in this Section because there is only one Chinese shipbuilder, i.e. CSSC (Hudong) that can build LLNGCs.
- (648) In the Response to the SO, the Notifying Party essentially argues that the Commission would have contradicted itself by stating, on the one hand, that CSSC is not currently sufficiently competitive on price, and, on the other hand,

⁹⁸⁷ Response to the First Letter of Facts, paragraphs 40-45.

⁹⁸⁸ Response to the First Letter of Facts, paragraphs 40-45.

⁹⁸⁹ Response to the First Letter of Facts, paragraphs 40-45.

⁹⁹⁰ Response to the First Letter of Facts, paragraph 46.

⁹⁹¹ [...] reply to Commission's RFI to [...] dated 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁹⁹² See, inter alia, the Notifying Party's Response to the First Letter of Facts, paragraph 101.

⁹⁹³ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

⁹⁹⁴ [...] reply to Commission's RFI to [...] dated 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]

⁹⁹⁵ The Notifying Party's reply to question 6 of RFI 45, Annex Q6.2.32, page 4

⁹⁹⁶ Response to the Second Letter of Facts, paragraph 88.

acknowledging that CSSC is competitive on price.⁹⁹⁷ In the Response to the Second Letter of Facts, the Notifying party argues that CSSC does not need to offer an identical product in order to be competitive, especially where it is able to offer a lower price and that the Commission has never sought to probe how CSSC’s price competitiveness would be viewed by the market.⁹⁹⁸ The Commission considers that these arguments are immaterial for the following reason. The customers’ statements the Notifying Party refers to need to be read in context, in the sense that, regardless of whether CSSC is competitive on price or not and regardless of the fact that, as explained in **Section 8.3.4.2 (B) k)**, the Commission found Korean LLNGC shipbuilders do not appear to benchmark their prices against CSSC, price, as shown by the customers’ quotes referred to by the Notifying Party, is not the only or main factor customers look at. Indeed, as already explained multiple times (see this Section and **Section 8.3.2)**, the top-5 parameters that customers usually take into account when deciding with which shipbuilder to place an order for LNGCs and for LLNGCs are: (i) quality/vessel’s performance, (ii) price, (iii) slot availability/delivery time, (iii) engineering skills/design, (iv) track record/technology and (v) historical relationship. Nearly all customers that expressed an opinion indicated that, for LLNGCs, there would be no difference in terms of order of preference compared to the order of preference of the above-mentioned parameters given for LNGCs. Moreover, as explained in this Sub-section, comparing the Chinese shipbuilders to Korean LLNGCs shipbuilders in terms of various competition parameters, the majority of customers expressing an opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders concerning the quality, infrastructure, timely delivery, know-how, project management and cost of maintenance. In addition, as mentioned in **Section 8.3.1** and **Section 8.3.9** respectively, CSSC (Hudong)’s market share are very limited and customers order from CSSC (Hudong) for very specific reasons only.

- (649) Second, the Commission finds that comparing the Chinese shipbuilders to Korean LLNGCs shipbuilders in terms of various competition parameters, the majority of customers expressing a meaningful opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders concerning the quality, infrastructure, timely delivery, know-how, project management and cost of maintenance.⁹⁹⁹ In this respect, with regard to quality, a customer explained that *“we would consider building at a Chinese shipbuilder if/when such a yard shows that it can consistently build LNG vessels of high quality, implement innovative construction practices, improve designs, delivery dates and price in order to be competitive”*.¹⁰⁰⁰ Another customer concurred and stated that *“[t]here is still a gap in terms of quality between CSSC and the Korean shipyards”* and that *“[c]onventional LNG carriers are very demanding and complex vessels to build.”*¹⁰⁰¹ Another customer explained that Chinese shipbuilders have *“insufficient track record, know-how and experience. Design and technology still lacking behind Korea shipbuilders”*.¹⁰⁰² Another customer clarified that *“[...] Chinese shipbuilders do not have the experience, contacts with main technology partners or record to make them (currently) a partner*

⁹⁹⁷ The Notifying Party’s Response to the SO, paragraphs 327-338.

⁹⁹⁸ Response to the Second Letter of Facts, paragraph 87 and ff.

⁹⁹⁹ Replies to question 30 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹⁰⁰⁰ Replies to question 26 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁰⁰¹ Minutes of the conference call with [...] dated 17 February 2020, paragraph 4. [DOC ID: 2958]

¹⁰⁰² Replies to question 26 of Questionnaire Q3 to Customers. [DOC ID: 3236]

to consider for future ship building projects”.¹⁰⁰³ Another customer which ordered LLNGCs from CSSC (Hudong) stated that CSSC did not have enough experience in building LLNGCs and “therefore the building process required much more supervision” from the customer, which in practice involved an on-site supervising team approximately 2.5 times bigger than with a Korean shipbuilder.¹⁰⁰⁴

- (650) The Commission also notes that a broker stated that, while, among the Chinese shipbuilders, only CSSC (Hudong) can build LLNGCs, most customers would order from China only for very specific reasons, such as if the project requires so. Indeed, “[i]n LNG, Chinese yards (only Hudong actually has any track record of delivering big LNG ships) do not have the same track record of quality, design and timely delivery as the Koreans. Korean yards are much more competitive in LNG carriers, they have made huge investments in the past 20 years and are the most efficient and reliable in this vessel. It is considered a big risk to order membrane LNG carriers from China and for a western ship owner to do so would require a significant discount, probably of about 15-20% to justify the perceived risk (note, no western owner has contracted big LNG ships in China except against Chinese import business). The discount in China at the moment is too small and does not represent value compared to Korea. Most ship owners would not build big LNG ships in China unless it is for a Chinese import project where it is required to have a Chinese shipbuilder in order to get the contract. Korea is simply better value.”¹⁰⁰⁵
- (651) In that regard, during the market investigation, customers further explained that Korean shipbuilders are market leaders for LLNGCs as they have better quality and experience while some customers also mentioned their higher capacity, design and flexibility.¹⁰⁰⁶ According to a customer “Korean shipbuilders are the market leaders when it comes to conventional LNG carriers and FSRUs”, which is due to their “important track-record, know-how and engineering capabilities. Besides this, Korean shipbuilders are also very efficient manufacturers, in the sense that they are capable of delivering a lot of state of the art LNG carriers and FSRUs per year.”¹⁰⁰⁷ A customer noted that “only the three Korean (HHIH, DSME and SHI) are the most competitive and attractive ones when it comes to large conventional LNG carriers”¹⁰⁰⁸ and that “CSSC does not have the capacity”¹⁰⁰⁹ to build the [...] vessels to meet the customer’s needs. The same customer explains that “although CSSC appears to have the technical capability to build large LNG carriers and can offer apparently competitive prices, it does not have enough track-record (having built around [...] conventional LNG carriers since around 2008)”¹⁰¹⁰ and that therefore “building in China requires additional supervision from the customer side”.¹⁰¹¹ According to a customer of the Parties and of CSSC, although in terms of vessel performance, CSSC-built LNG carriers are comparable to Korean-built LNG carriers, “in terms of know-how and expertise, Korean shipbuilders are more advanced than CSSC.”¹⁰¹² Another customer considers that: “the Chinese do not offer attractive payment terms

¹⁰⁰³ Replies to question 26 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁰⁰⁴ Minutes of the conference call with [...] dated 27 February 2020, paragraph 3. [DOC ID: 2222]

¹⁰⁰⁵ Minutes of the conference call with [...] dated 2 March 2020, paragraph 14. [DOC ID: 2657]

¹⁰⁰⁶ Replies to question 47 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰⁰⁷ Minutes of the conference call with [...] dated 18 February 2020, paragraph 5. [DOC ID: 2839]

¹⁰⁰⁸ Minutes of the conference call with [...] dated 25 February 2020, paragraph 6. [DOC ID: 2350]

¹⁰⁰⁹ Minutes of the conference call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2350]

¹⁰¹⁰ Minutes of the conference call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2350]

¹⁰¹¹ Minutes of the conference call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2350]

¹⁰¹² Minutes of the conference call with [...] dated 17 February 2020, paragraph 4. [DOC ID: 2609]

*compared to the big three Korean shipbuilders [and] they have also a longer delivery times: [...] months or more than in Korea. The quality of the vessels is not to a comparable standard as the vessels built in Korea: the vessel construction requires very specific high-grade materials; the quality conditions to observe during construction are very strict ([...] gave the example of an inspection of the LNG cargo tank that took place without shoe protection); the cargo containment system is not manufactured in China for the time being and it needs to be installed on board of the ship which is a very delicate system. [...] [...] considers that quality control is not on par with the Korean shipbuilders and it will take the Chinese a minimum of five years to get there.”*¹⁰¹³ A customer of the Notifying Party of [...] large FSRUs stated that while HHI, DSME and SHI are credible suppliers for conventional LLNGCs, with a solid track record, CSSC (Hudong) – although capable of building conventional LLNGCs and large FSRUs at the same price as the Koreans – has longer delivery times than HHI, DSME and SHI.¹⁰¹⁴ A customer of DSME stated that Chinese shipbuilders had less relevant experience in building conventional LLNGCs with the technological features that the customer required.¹⁰¹⁵ Another customer [...] stated that “CSSC is behind the three big Koreans (HHI, DSME, SHI) in terms of experience and track-record.”¹⁰¹⁶ Yet another noted that CSSC is “still behind Korean shipbuilders when it comes to technology, know-how and track-record. With respect to FSRUs, Chinese are even more behind the Koreans as opposed to LNG carriers”¹⁰¹⁷ and the delivery times of FSRUs from China are expected to be much longer than in Korea. Another customer noted that “CSSC in China has been building large LNGs for about eight years now and they still did not catch up with the Koreans. The challenge with large LNG carriers is the construction and integration of the containment tank and it is only at the very end when the tank is tested that it can be known if it was constructed and integrated correctly. Therefore, track record is essential for customers in choosing the shipbuilder and they have a strong preference for the Korean shipbuilders. CSSC received most of its orders for large LNG carriers from Chinese customers.”¹⁰¹⁸ According to a customer, “CSSC does not have the same experience as the three big Korean shipbuilders. With respect to other Chinese shipbuilders, to be able to catch up with the big three Koreans in large LNG carriers they would need to invest in skilled workers capable of handling the building and installation of the cargo tank containment system. This will take significant time”.¹⁰¹⁹

(652) Moreover, the Commission notes that contrary to what is argued by the Notifying Party in the Response to the SO,¹⁰²⁰ the customers’ feedback the Notifying Party refers to does not invalidate the Commission’s conclusions that CSSC’s LLNGC shipbuilding capabilities are not comparable to the three Koreans’ under several parameters thereby limiting competitiveness at present and in the foreseeable future.

(a) Indeed, with respect to [...], the Commission considers that the statement quoted by the Notifying Party in paragraph 311 of the Response to the SO should be read in context with what stated in reply to question 15 of Q3 to

¹⁰¹³ Minutes of the conference call with [...] dated 25 February 2020, paragraph 7. [DOC ID: 2922]

¹⁰¹⁴ Minutes of the conference call with [...] dated 6 February 2020, paragraphs 9 and 10. [DOC ID: 2782]

¹⁰¹⁵ Minutes of the conference call with [...] dated 24 February 2020, paragraph 6. [DOC ID: 2767]

¹⁰¹⁶ Minutes of the conference call with [...] dated 26 February 2020, paragraph 10. [DOC ID: 2900]

¹⁰¹⁷ Minutes of the conference call with [...] dated 19 February 2020, paragraph 6. [DOC ID: 2486]

¹⁰¹⁸ Minutes of the conference call with [...] dated 9 March 2020, paragraph 9. [DOC ID: 2504]

¹⁰¹⁹ Minutes of the conference call with [...] dated 24 February 2020, paragraph 8. [DOC ID: 2663]

¹⁰²⁰ Response to the SO, paragraphs 311 and 349-350.

Customers, namely that CSSC (Hudong)’s weakness is that “[...] *it does not have great experience in LNG carriers so far*”.¹⁰²¹ Still with respect to [...], the Commission considers that the statement quoted by the Notifying Party in paragraphs 349-350 of the Response to the SO only shows that [...].¹⁰²² Moreover, as explained in **Section 8.3.9**, [...] ordered from CSSC for very specific reasons.

- (b) With respect to [...], as explained in **Section 8.3.9**, the Commission considers that [...] has never ordered LLNGCs from CSSC (Hudong) and with [...] feedback,¹⁰²³ the Commission considers that it does not show that CSSC (Hudong) is comparable to the Parties or to the three big Koreans.
 - (c) With respect to [...] statement mentioned by the Notifying Party in paragraph 311 of the Response to the SO, the Commission considers that it should be read in context with what stated by [...] in reply to question 15 of Q3 to Customers, namely that CSSC’s weakness is that “*it is not so much experienced*”.¹⁰²⁴
 - (d) With respect to [...] statement mentioned by the Notifying Party in paragraphs 349-350 of the Response to the SO,¹⁰²⁵ which states that CSSC (Hudong)’s strength is the price and its weakness is the technology, the Commission considers that this feedback is consistent with the Commission’s findings on CSSC (Hudong) not being on par with the Koreans.
 - (e) With respect to [...] statement the Notifying Party mentions in paragraph 311 of the Response to the SO, the Commission considers that it should be read in context with what already explained in **Section 8.3.6** and **Section 8.3.4.2**.
- (653) Moreover, contrary to what is argued by the Notifying Party,¹⁰²⁶ the Commission also thoroughly examined five customers’ ([...]) and a classification society’s ([...]) feedback referred to in Table 2 of the Response to the First Letter of Facts. The Notifying Party claims that such feedback would show that the market considers CSSC’s quality to be good. The Commission notes the following points.
- (a) First, such feedback does not invalidate the Commission’s findings that CSSC does not exercise a sufficient or significant competitive constraint on the Parties and that this is not likely to change in the near future. Indeed, the Commission found that CSSC’s LLNGC shipbuilding capabilities are not comparable to Korean shipbuilders under several competitive parameters thereby limiting competitiveness at present and in a foreseeable future not that CSSC is completely out of the picture.
 - (b) Second and more specifically on the five customers: on [...], [...] and [...], the Commission refers to what already mentioned in the above paragraph. On [...], the Commission notes that [...] refers to the LLNGCs ordered in 2014 by [...]. The quote clearly shows that CSSC took longer time to build those vessels. Plus, the full quote clearly shows that these vessels were part of a specific Chinese project.¹⁰²⁷ On [...], the Commission notes that the quote referred to by the Notifying Party needs to be read in context. Indeed, it does not say that

¹⁰²¹ Replies to question 15 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹⁰²² [...].

¹⁰²³ Replies to question 37 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰²⁴ Replies to question 15 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹⁰²⁵ Replies to question 37 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰²⁶ Response to the First Letter of Facts, paragraphs 47-50

¹⁰²⁷ Minutes of the conference call with [...] dated 25 June 2019, paragraph 6. [DOC ID: 1329]

CSSC's LLNGC offer is comparable to the three big Koreans but rather confirms that Koreans' LLNGC quality is higher. Moreover, the Commission also notes that [...] has never ordered LLNGCs from CSSC.¹⁰²⁸ On [...], the Commission notes that, as already explained in **paragraph (1065)**, classification societies are not the best placed to judge on quality as they have different quality concerns as opposed to customers.

- (654) In that regard, the Commission notes that contrary to what is argued by the Notifying Party in the Response to the First Letter of Facts¹⁰²⁹ and to the Second Letter of Facts¹⁰³⁰ the Commission has thoroughly assessed the Notifying Party's claims with respect to the alleged positive market feedback on CSSC's LLNGC shipbuilding quality. In this respect, the Notifying Party argues that of the top 10 LLNGC customers [...] would have ordered LLNGCs from CSSC before and that [...] of these ten would have confirmed that they would order from CSSC in the future (although besides for the [...] quote, there is no reference to the market investigation questions from where such feedback would have been taken). The Notifying Party further claims that only [...] among these, namely [...], would have stated that it would not order from CSSC but because it would not know Chinese LLNGC shipbuilding well enough to be able to judge. The Commission considers that the Notifying Party misrepresents the evidence on file and that, in any event, this market feedback needs to be put into context for the following reasons.
- (a) First, on [...], the Commission notes (as explained in **Sections 8.3.9.2 (B) a) and i)**, that these LLNGCs were not really ordered by [...], but by [...]. In any event, as already explained in **Sections 8.3.9.2 (B) a) and i)**, these LLNGCs were ordered from CSSC for very specific reasons. Moreover, if, on the one hand, [...] is among the respondents that replied yes to the question on whether they would consider ordering conventional LLNGCs from Chinese shipbuilders in the next five years,¹⁰³¹ on the other hand, [...] states that “[...] *in terms of know-how and expertise, Korean shipbuilders are more advanced than CSSC*”¹⁰³² and that “[...] *experience and track record are important when deciding from which shipbuilder to place a given order*”.¹⁰³³
 - (b) Second, on [...], if, on the one hand, [...] is among the respondents that replied yes to the question on whether they would consider ordering conventional LLNGCs or large FSRUs from Chinese shipbuilders in the next five years,¹⁰³⁴ the Commission notes that, as already explained in **Section 8.3.9** and **Section 8.3.9.2 (B) i)** of this Decision, [...] ordered, for very specific reasons, only [...] from CSSC since 2010.¹⁰³⁵ Contrary to what is argued by the Notifying Party¹⁰³⁶ and, based on the information available to the Commission (as already explained in **Section 8.3.9** and **Section 8.3.9.2 (B) i)** of this Decision), it was

¹⁰²⁸ The Notifying party's reply to question 38 of RFI 67, Annex Q38.

¹⁰²⁹ The Notifying Party's Response to the First Letter of Facts, paragraphs 47-50.

¹⁰³⁰ Response to the Second Letter of Facts, paragraph 82.

¹⁰³¹ Replies to question 40 of Questionnaire Q8 to Customers. [DOC ID: 3241] Interestingly, however, [...] does not appear among those respondents that replied “yes” to the sister question on large FSRUs. Replies to question 85 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰³² Minutes of the conference call with [...] dated 17 February 2020, paragraph 4. [DOC ID: 2609]

¹⁰³³ Minutes of the conference call with [...] dated 17 February 2020, paragraph 7. [DOC ID: 2609]

¹⁰³⁴ Replies to questions 40 and 85 of Questionnaire Q8 to Customers. [DOC ID: 3241].

¹⁰³⁵ The Notifying Party's reply to question 16 of RFI 67, Annex Q16.

¹⁰³⁶ Response to the Second Letter of Facts, paragraph 82.

not because of being offered financing by CSSC that [...] ordered from [...]. As confirmed by [...] ¹⁰³⁷ and as confirmed by the Clarksons data, ¹⁰³⁸ [...].

- (c) Third, on [...], the Commission notes that, if, on the one hand, [...] is among the respondents that replied yes to the question on whether they would consider ordering conventional LLNGCs or large FSRUs from Chinese shipbuilders in the next five years, ¹⁰³⁹ [...] clarified that, for conventional LLNGCs, this would be the case only “*depending on the project requirement and/or shipbuilder slot availability*”¹⁰⁴⁰ and that, for large FSRUs, only if “[...] *the [p]roject [d]eveloper is China based [...]*”.¹⁰⁴¹ Indeed, as explained in **Section 8.3.9** and **Section 8.3.9.2 (B) i** of this Decision, it ordered only [...] LLNGCs from CSSC and it did so for very specific reasons. Contrary to what is argued by the Notifying Party¹⁰⁴² and, based on the information available to the Commission (as already explained in **Section 8.3.9** and **Section 8.3.9.2 (B) i** of this Decision), it was not because of being offered financing by CSSC that [...] ordered from CSSC.
- (d) Fourth, on [...], the Commission notes that, according to available data, [...] has never ordered any LLNGC from CSSC so far.¹⁰⁴³ Moreover, [...] has not replied yes to the question on whether it would order conventional LLNGCs or large FSRUs from Chinese shipbuilders.¹⁰⁴⁴ Contrary to what is argued by the Notifying Party¹⁰⁴⁵, the fact that [...] has ordered mid-sized LNGCs from CSSC is not relevant as mid-sized LNGCs are not part of the relevant product market.
- (e) Fifth, on [...], the Commission notes, as already explained in **Section 8.3.4.2**, that [...] could therefore not avoid ordering from CSSC.
- (f) Sixth, on [...], the Commission notes that, as acknowledged by the Notifying Party itself, it has never ordered from CSSC.¹⁰⁴⁶ Moreover, the Commission notes that, if, on the one hand, it is among the respondents that replied yes to the question on whether they would consider ordering conventional LLNGCs or large FSRUs from Chinese shipbuilders in the next five years,¹⁰⁴⁷ it also clarified that, for conventional LLNGCs, this would be the case “*only if the charterers require the vessel to be built at a particular yard (in China) [...]*”¹⁰⁴⁸ and that, for large FSRUs, this would only be the case “*if the specific project and charterer’s requirement do not justify ordering from Korea*”.¹⁰⁴⁹ Moreover, the Commission notes that the quote the Notifying Party refers to needs to be interpreted in the context of the market investigation in the sense that they would consider ordering from CSSC only when CSSC can show that it can consistently build LLNGCs of high quality. As explained in **Section**

¹⁰³⁷ [...] reply to question 2 of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

¹⁰³⁸ The Notifying Party’s reply to question 38 of RFI 67, Annex Q38.

¹⁰³⁹ Replies to questions 40 and 85 of Questionnaire Q8 to Customers. [DOC ID: 3241].

¹⁰⁴⁰ Replies to question 40.1 of Questionnaire Q8 to Customers. [DOC ID: 3241].

¹⁰⁴¹ Replies to question 85 of Questionnaire Q8 to Customers. [DOC ID: 3241].

¹⁰⁴² The Response to the Second Letter of Facts, paragraph 82.

¹⁰⁴³ The Notifying Reply to question 38 of RFI 67, Annex Q38.

¹⁰⁴⁴ Replies to questions 40 and 85 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰⁴⁵ Response to the Second Letter of Facts, paragraph 82.

¹⁰⁴⁶ The Notifying Reply to question 38 of RFI 67, Annex Q38.

¹⁰⁴⁷ Replies to questions 40 and 85 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰⁴⁸ Replies to question 40.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰⁴⁹ Replies to question 85.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

8.3.8.3 (A) a), CSSC entered the market in [...] and since then has managed to achieve very low market shares, still perceived by the market as not on par with the three big Korean LLNGC shipbuilders under several criteria. For this reason, the Notifying Party's argument according to which [...] would be currently in discussion with CSSC for a possible order (which, however, based on the information provided by the Notifying Party, it is not even clear whether it concerns LLNGCs or mid-sized or small LNGCs) and this would undermine the Commission's assessment, is irrelevant.¹⁰⁵⁰

- (g) Seventh, on [...], the Commission notes that, as acknowledged by the Notifying Party, it has never ordered any LLNGC from CSSC.¹⁰⁵¹ Moreover, if, on the one hand, it is among the respondents that replied yes to the question on whether they would consider ordering conventional LLNGCs from Chinese shipbuilders in the next five years,¹⁰⁵² it also previously clarified that this would happen "[...] if we win Chinese project".¹⁰⁵³
 - (h) Eighth, on [...], the Commission notes, as acknowledged by the Notifying party itself, that it has never ordered any LLNGC from CSSC¹⁰⁵⁴ and that it has not expressed any intention of doing so. The Commission also notes that the LNGC the Notifying Party mentions in footnote 49 of the Response to the First Letter of Facts that [...] would have agreed with CSSC to convert into an [...], so outside the scope of this investigation.
 - (i) Ninth, on [...], the Commission notes that, as acknowledged by the Notifying party itself, it has never ordered any LLNGC from CSSC¹⁰⁵⁵ and has never showed any intention of doing so. Indeed, contrary to what the Notifying Party argues, the quote referred to in the response to the First Letter of Facts shows no intention of ordering from CSSC in the future.
 - (j) Tenth, on [...], the Commission notes that, as acknowledged by the Notifying Party, [...] has neither ordered from CSSC¹⁰⁵⁶ nor expressed any intention to do so in the future. The quote clearly shows that CSSC-built vessels are not to a comparable standard as the Korean-built ones.
- (655) Fourth, the Commission considers that customers' overall negative feedback on [...] is overall confirmed by [...]. The Commission directly asked [...] how [...] compares with HHI, DSME and SHI under several parameters in relation to the construction of LLNGCs.¹⁰⁵⁷ [...] replied that it considers [...] not being equal to HHI, DSME and SHI in terms of several important parameters, as discussed hereinafter.
- (a) As to the **propulsion systems** offered for LLNGCs, [...] stated that HHI, DSME and SHI offer the two main propulsion systems, while CSSC only offers one system: "*Hudong-Zhonghua and HHI, DSME, SHI all adopt market prevalent dual-fuel lowspeed propulsion system. The dual-fuel main engine is mainly WinGD X-DF and MAN MEGI related models. At present, both models*

¹⁰⁵⁰ Response to the Second Letter of Facts, paragraph 82.

¹⁰⁵¹ The Notifying party's reply to question 38 of RFI 67, Annex Q38.

¹⁰⁵² Replies to question 40 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁰⁵³ Replies to question 26 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁰⁵⁴ The Notifying party's reply to question 38 of RFI 67, Annex Q38.

¹⁰⁵⁵ The Notifying party's reply to question 38 of RFI 67, Annex Q38.

¹⁰⁵⁶ The Notifying party's reply to question 38 of RFI 67, Annex Q38.

¹⁰⁵⁷ [...] reply to question 22 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

are used in Korean shipyard construction projects, and Hudong-Zhonghua only uses WinGD X-DF model.”¹⁰⁵⁸ Contrary to what is argued by the Notifying Party in the Response to the Second Letter of Facts,¹⁰⁵⁹ pursuant to which CSSC owns WinGD and would thus have an interest in using its own propulsion technology does not undermine the above factual statement of [...].

- (b) As to the **delivery time** for LLNGCs, [...] stated that HHI, DSME and SHI have an advantage over CSSC as CSSC has a delivery time that is up to [...] months longer: “*HHI, DSME and SHI have advantage over Hudong-Zhonghua in terms of delivery time – usually the delivery time of HHI, DSME and SHI is [...] months shorter than Hudong-Zhonghua.*”¹⁰⁶⁰
- (c) As to the **LLNGC know-how**, [...] considers that – besides the main patent technology – Korean shipbuilders have more patents than CSSC. [...] stated that “*LNG ships of Hudong-Zhonghua and HHI, DSME, SHI all apply the same main patent technology, such as GTT thin film containment system, dual-fuel main engine, etc.. In respect of other patents, South Korea has more relevant patents as it started applying early while Hudong-Zhonghua started late and has less patents than the Korean shipyards.*”¹⁰⁶¹ The Commission also refers to the **Section 8.3.3.2 (A)** above, containing an analysis of patent data which confirms that CSSC is a more distant competitor in terms of number and Technology Relevance of LLNGC patents.
- (d) As to **LLNGC project management**, [...] considers that [...] is worse than HHI, DSME and SHI. [...] stated that “*HHI, DSME, SHI are better than Hudong-Zhonghua in terms of project management.*”¹⁰⁶²
- (656) In that regard, the Notifying Party has stated that [...] confirmed that [...] is largely equivalent to the three Korean shipbuilders on most competitive parameters (i.e. fuel-efficiency technologies, LLNGC design, timely delivery, quality, LLNGC infrastructure, maintenance costs, LLNGC know-how, price competitiveness).¹⁰⁶³
- (657) The Commission considers it reasonable to expect that, [...] assesses [...] shipbuilding processes and qualities in a positive manner.¹⁰⁶⁴ Indeed, [...] may be biased in judging [...]. Hence, to the extent [...] stated that [...] is not equal to HHI, DSME and SHI under certain parameters, such statements are more likely true, given that [...] has no incentive to present [...] as being a less performing shipbuilder than HHI, DSME and SHI. Contrary to what is argued by the Notifying Party in the Response to the First Letter of Facts¹⁰⁶⁵ and to the Second Letter of Facts,¹⁰⁶⁶ this is

¹⁰⁵⁸ [...] reply to question 22.a of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁰⁵⁹ Response to the Second Letter of Facts, paragraph 79.

¹⁰⁶⁰ [...] reply to question 22.f of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁰⁶¹ [...] reply to question 22.h of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁰⁶² [...] reply to question 22.i of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁰⁶³ Supplemental submission regarding the Notifying Party’s observations on the continued access to the file granted on 21 October 2020, dated 24 November 2020, paragraph 18. According to the Notifying Party, the fact that [...] explicitly acknowledges that [...] is not yet fully on the same level as the Korean shipbuilders on some other competitive parameters (e.g. LLNGC delivery time and project management) would add to the credibility of [...] statements.

¹⁰⁶⁴ In terms of LLNGC fuel efficiency technologies, design, quality, infrastructure, timely delivery, main know-how (main patents) and cost of maintenance, [...] considers [...] to be on par with the Korean shipbuilders. [...] reply to question 22.b, c, d, e, g, h, j of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁰⁶⁵ Response to the First Letter of Facts, paragraphs 54-55.

¹⁰⁶⁶ Response to the Second Letter of Facts, paragraph 83.

not counterintuitive for the following reasons. First, the Commission considers that, given CSSC's strong domestic focus, [...] is unlikely to have any interest in downplay [...] alleged qualities against the three big Koreans. In an internal document of DSME [...] ¹⁰⁶⁷ [...] ¹⁰⁶⁸ This is also confirmed by the Commission's findings in **Section 8.3.4.2 (B) m)**. Second, even if [...] were likely to have any interest in downplaying [...] alleged qualities against the three big Korean shipbuilders (quod non), the Commission notes, as explained in **Section 8.3.4.2** that the Commission's assessment on the fact that CSSC's LLNGC shipbuilding capabilities are not comparable to Korean shipbuilders (HHIH, DSME and SHI) is in line with Clarksons data (CSSC's strong domestic focus and limited market shares) and with the results of the market investigation (quality comes first for LLNGCs customers).

(658) Moreover, the Notifying Party's argument pursuant to which the above-mentioned parameters are confirmed to be of a lesser importance by the market investigation as opposed to quality and price ¹⁰⁶⁹ is immaterial (see **Section 8.3.2.2 (A)**) for the following reasons.

- (a) First, as explained in **Section 8.3.2.2 (A)** the top parameters that customers usually take into account when deciding with which shipbuilder to place an order for LLNGCs are quality/vessel's performance, price, slot availability/delivery time, engineering skills/design, track record/technology and historical relationship. ¹⁰⁷⁰ Moreover, as explained in this Section, the majority of customers expressing a meaningful opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders concerning the quality, infrastructure, timely delivery, know-how, project management and cost of maintenance. ¹⁰⁷¹
- (b) Second and more specifically, the Commission notes that, although propulsion does not explicitly appear in the above-mentioned lists, it is, for example, an important aspect of the quality/vessel performance as it may have, among other things, an impact on fuel consumption.
- (c) Third, with respect to delivery time, the Commission considers that this may also be impacted by know how and project management and may also have an impact on timely delivery. Contrary to what is argued by the Notifying Party ¹⁰⁷² and consistently with the results of the market investigation (which showed that the majority of customers expressing a meaningful opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders concerning timely delivery, know-how and project management) ¹⁰⁷³ the LLNGC building time difference is not small and that in any event it is more meaningful if considered on a longer time span than on a yearly basis.

¹⁰⁶⁷ The Commission notes that, as acknowledged by the Notifying Party in reply to question 11 of RFI 67, CSSC (Hudong) [...].

¹⁰⁶⁸ The Notifying Party's reply to question 7 of RFI 45, Annex Q7.2.5, page 1.

¹⁰⁶⁹ Response to the First Letter of Facts, paragraphs 60-63. See also Response to the Second Letter of Facts, paragraphs 79 and ff. See also the Notifying Party's response to the SO, paragraphs 343-347.

¹⁰⁷⁰ Replies to question 18 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹⁰⁷¹ Replies to question 30 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹⁰⁷² Response to the First Letter of Facts, paragraphs 60-63.

¹⁰⁷³ Replies to question 30 of Questionnaire Q3 to Customers. [DOC ID: 3244]

- (d) Fourth, with respect to project management, the Commission notes that, as explained above and contrary to what is argued by the Notifying Party¹⁰⁷⁴ this is among the top parameters that customers usually take into account when ordering an LLNGC. Moreover, the Commission also notes that the majority of customers expressing a meaningful opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders concerning project management.¹⁰⁷⁵
- (e) Fifth, with respect to know-how, the Commission notes that know-how is an important aspect of the quality/vessel performance as well as of the engineering skills/design and the track record/technology parameters. Consistently, the majority of customers expressing a meaningful opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders concerning know-how.¹⁰⁷⁶
- (f) Sixth, with respect to CSSC's longer supervision, the Commission notes that it is likely to have an impact LLNGC capabilities as a whole and therefore on several of the above parameters, regardless of whether CSSC-built vessels are priced lower than Korean-built ones or not.
- (659) Fifth, the Commissions considers that the above findings are also confirmed by other market participants, such as [...]. According to [...], HHI, DSME and SHI are the most experienced builders of LLNGC and have developed “*a unique industrial efficiency*” while Hudong-Zhonghua is “*less efficient than the Koreans (especially in terms of costs and planning)*.”¹⁰⁷⁷ [...] further explains that by taking into account (i) shipyard design and innovation capability, (ii) inherent production quality (such as defects discovered during construction to be remedied before delivery), (iii) defects discovered after delivery and for which [...] has intervened, (iv) duration of vessel's construction, (v) annual construction capacity, (vi) [...] staff on-site requirement per vessel and (vii) shipowner on-site surveyors requirements¹⁰⁷⁸, the three Korean shipbuilders are far more advanced than anyone else. Indeed, [...] states that “*[...] as it happens, in every market in which quantitative and qualitative track record is extremely important, the currently active three biggest Korean shipbuilders are best-in-class on all the criteria defined above, leaving a measurable gap between them and the rest, in particular in terms of time required for vessel delivery, and the number of supervisory staff considered by each stakeholder to be required per vessel*”.¹⁰⁷⁹
- (660) More specifically, on the fact that CSSC (Hudong) is not comparable to HHI, DSME and SHI in terms of delivery time, [...] considers that there is still a “*measurable gap*” between CSSC and the Korean shipbuilders in particular in terms of time required for vessel delivery: “*the market seems to consider that CSSC is not fully competitive with the Korean shipyards. [CONFIDENTIAL] [NON-CONFIDENTIAL SUMMARY: “as it happens in every market in which quantitative and qualitative track record is extremely important, the currently active three biggest Korean shipbuilders are best-in-class, leaving a measurable gap between them and the rest, in particular in terms of time required for vessel delivery, and the number of*

¹⁰⁷⁴ Response to the First Letter of Facts, paragraphs 60-63.

¹⁰⁷⁵ Replies to question 30 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹⁰⁷⁶ Replies to question 30 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹⁰⁷⁷ Minutes of the conference call with [...] dated 21 February 2020, paragraph 11. [DOC ID: 2530]

¹⁰⁷⁸ [...] reply to question 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

¹⁰⁷⁹ [...] reply to question 1 of Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

supervisory staff considered by each stakeholder to be required per vessel”].¹⁰⁸⁰ [...] also stated that “It requires significant amount of time and significant effort for the rest [non Korean shipbuilders] to gain market shares in the worldwide market for LLNGCs”.¹⁰⁸¹ [...] has further stated that it took CSSC (Hudong) [...] years to build its first LLNGC: “[...] explains that it took [...] years for CSSC between the moment when it obtained [...] and the moment when it received its first order ([...]) and [...] more years between the moment when it received its first order and the delivery of the first LLNGC in [...]”.¹⁰⁸² According to [...] calculations, CSSC (Hudong) has an average duration of LLNGC shipbuilding (time required between shipbuilding contract and delivery) of [...] as compared to [...] for HHI, DSME and SHI.¹⁰⁸³

Figure 49 [...] view on average time (in months) between shipbuilding contract and delivery

Order year	CSSC	HHI, DSME and SHI
2010	[...]	[...]
2011	[...]	[...]
2012	[...]	[...]
2013	[...]	[...]
2014	[...]	[...]
2015	[...]	[...]
2016	[...]	[...]
2017	[...]	[...]
2018	[...]	[...]
2019	[...]	[...]
2020	[...]	[...]
2021	[...]	[...]
Average	[...] (Sample: [...] LNGCs)	[...] (Sample: [...] LNGCs)

Source: [...]

(661) [...] clarifies that these values exclude (i) LNGCs <145,000m³, as they are shorter to build, (ii) Arc7 LLNGCs, which are longer to build¹⁰⁸⁴ and (iii) large FSRUs, which are longer to build.¹⁰⁸⁵ This is also confirmed, for example, by an internal document of HHIH ([...]).¹⁰⁸⁶ [...].¹⁰⁸⁷ [...].¹⁰⁸⁸ The Commission notes that this argument is

¹⁰⁸⁰ Minutes of the conference call with [...] dated 22 July 2020, paragraph 13 [DOC ID: 4032]

¹⁰⁸¹ Minutes of the conference call with [...] dated 22 July 2020, paragraph 13 [DOC ID: 4032]

¹⁰⁸² Minutes of the conference call with [...] dated 22 July 2020, paragraph 16. [DOC ID: 4032]

¹⁰⁸³ [...] reply to question 1 of RFI 3 to [...] dated 6 October 2021. [DOC ID: 5821]

¹⁰⁸⁴ [...] reply to question 1 of RFI 3 to [...] dated 6 October 2021. [DOC ID: 5821] On the fact that Arc7 LLNGCs and large FSRUs are longer to build than conventional LLNGCs, see the Notifying Party’s reply to RFI 60 and to questions 30 and 31 of RFI 67.

¹⁰⁸⁵ [...] reply to question 1 of RFI 3 to [...] dated 6 October 2021. DOC ID: [5821]. On the fact that Arc7 LLNGCs and large FSRUs are longer to build than conventional LLNGCs, see the Notifying Party’s reply to RFI 60 and to questions 30 and 31 of RFI 67. On the fact that Arc7 LLNGCs are longer to build and that this may have an impact in terms of project risk identification for even an experienced and leading shipbuilder as DSME, [...]. See, on this, the Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.82.

¹⁰⁸⁶ The Notifying Party’s reply to question 7 of RFI 45, Annex Q.7.1.35, pages 2-3.

¹⁰⁸⁷ [...] reply to question 1 of RFI 3 to [...] dated 6 October 2021. [DOC ID: 5821]

¹⁰⁸⁸ Response to the Second Letter of Facts, paragraph 79.

irrelevant. As explained above and as explained at paragraph 151(a) of the Second Letter of Facts, [...] explains the anomaly by which HHIH's, DSME's and SHI's average longer yearly duration of LLNGC building time in the above table in some of the most recent years appears to be due to non-technical and non-Covid related delays.

(662) This is also confirmed by the delivery time that CSSC (Hudong) has been and is still taking (more than [...] years) to build and deliver its first [...] large FSRUs ever, ordered in June 2016 by [...]. As explained in **Section 8.3.8**, a customer stated that it was already taking CSSC (Hudong) approximately [...] longer than the three big Koreans to build a large FSRU. At the beginning of July 2021, the Commission asked [...] whether the [...] large FSRUs ordered in June 2016 by [...] had already been delivered. [...] confirmed at the time that that was not the case as “[t]he first large FSRU will not be delivered before the end of [...], while the second one will not be delivered before [...]”.¹⁰⁸⁹ [...] ¹⁰⁹⁰, [...] ¹⁰⁹¹ [...] ¹⁰⁹² [...] ¹⁰⁹³ [...]. The Commission cannot exclude, that this vessel has already been launched. The Commission notes that the difference in delivery time between, on the one hand, CSSC (Hudong)'s delivery time for its first [...] large FSRUs and, on the other hand, the average construction time (until delivery) for large FSRUs of DSME ([...] ¹⁰⁹⁴ and of HHIH ([...] ¹⁰⁹⁵ is significant. The Commission notes that such a difference in delivery time would still be significantly higher regardless of any possible impact (quod non) of the Covid-19 pandemic. Indeed, as explained in **Section 8.3.6**, CSSC did not experience any delays of LLNGCs orders.¹⁰⁹⁶ In addition, the Commission considers that, contrary to what argued by the Notifying Party,¹⁰⁹⁷ this indicates that CSSC (Hudong) does not exert a sufficient competitive constraint on the Parties in LLNGCs, let alone in the large FSRUs segment.

(663) Moreover, [...] ¹⁰⁹⁸ [...] ¹⁰⁹⁹

(664) In addition, [...] statements are corroborated by other sources. [...] gave an example of CSSC (Hudong) not being able to meet the delivery time: “More recently, on 3 July 2020, after sea trials in April, the Hudong-built LLNGC, LNG Phecda, went to gas trials, which are important to ensure there are no leaks in the membrane, say, from defective installment of technology or gas systems; a leak of -163C liquefied LNG could cold shock the ship hull causing it to become brittle and compromising vessel integrity. This was the 3rd of a series of conventional LLNGCs to be used by [...] and [...] to transship LNG brought out from the [...], but plagued with delays. Although Hudong originally aspired to build Arc-7 LLNGCs—which can break through 2.1 meter thick arctic ice and have equipment systems functioning at -52 C ambient temperature—it was awarded conventional LLNGCs orders, yet still could not meet delivery time of this conventional LLNGC.”¹¹⁰⁰

¹⁰⁸⁹ [...] reply to question 2 (b) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

¹⁰⁹⁰ Clarksons database submitted by the Notifying Party in reply to question 38 of RFI 67, Annex Q38.

¹⁰⁹¹ Clarksons database submitted by the Notifying Party in reply to RFI 59, Annex Q1.

¹⁰⁹² Clarksons database submitted by the Notifying Party in reply to question 38 of RFI 67, Annex Q38.

¹⁰⁹³ Clarksons database submitted by the Notifying Party in reply to RFI 59, Annex Q1.

¹⁰⁹⁴ The Notifying Party's reply to RFI 60. See also the Notifying Party's reply to question 30 of RFI 67.

¹⁰⁹⁵ The Notifying Party's reply to RFI 60. See also the Notifying Party's reply to question 31 of RFI 67.

¹⁰⁹⁶ [...] reply to question 23 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁰⁹⁷ Response to the SO, paragraphs 1026-1032.

¹⁰⁹⁸ The Notifying Party's reply to question 6 of RFI 45, Annex Q6.2.32, pages 1-6.

¹⁰⁹⁹ The Notifying Party's reply to question 6 of RFI 45, Annex Q6.2.32, page 4.

¹¹⁰⁰ [...] observations on the SO, page 3. [DOC ID: 3851]

- (665) Furthermore, in the Response to the First Letter of Facts, the Notifying Party argues that the Commission would largely rely on [...] and [...] feedback and highlight their view on delivery times, project management and level of supervision required.¹¹⁰¹ According to the Notifying Party, the market investigation would have shown that these parameters would be of lower importance than price and quality.¹¹⁰² The Commission considers that these parameters, especially project management, know how, technology and level of supervision required do have an impact on quality of an LLNGC shipbuilder and thus arguments are immaterial for the following reasons.
- (a) First, as explained in **Section 8.3.2**, the top-5 parameters that customers usually take into account when deciding with which shipbuilder to place an order for LNGCs and for LLNGCs are: (i) quality/vessel's performance, (ii) price, (iii) slot availability/delivery time, (iii) engineering skills/design, (iv) track record/technology and (v) historical relationship. Nearly all customers that expressed an opinion indicated that, for LLNGCs, there would be no difference in terms of order of preference compared to the order of preference of the above-mentioned parameters given for LNGCs.
 - (b) Second, as explained in this Section, comparing the Chinese shipbuilders to Korean LLNGCs shipbuilders in terms of various competition parameters, the majority of customers expressing an opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders concerning the quality, infrastructure, timely delivery, know-how, project management and cost of maintenance.
 - (c) Third, as explained in this Subsection, CSSC's LLNGCs shipbuilding capabilities are not comparable under several parameters like propulsion systems, delivery time, project management, know how. Same is true for technology (**Section 8.3.4.2 (B) e**) and supervision required (**Section 8.3.4.2 (B) f**).
- (666) Sixth, the Commission notes that CSSC (Hudong) experienced technical problems in the building of LLNGCs. For example, [...] has also explained that still recently, CSSC (Hudong) built vessels had technical problems: "*Hudong Zhonghua set out to secure technical skills to build LLNGCs sometime before 2000. It received its first 147,000 cbm LNGC order from [...], [...] and [...] in [...]. However, Hudong Zhonghua underwent severe delays in building the vessels and could not deliver until [...]. Even after delivery, technical problems continued to emerge such that in 2009, only [...] months after the first vessel was delivered, the LLNGC had to undergo lengthy repairs in Singapore. According to analyst reports, Hudong's first "export" LLNGC vessel—ordered by [...] in 2011—was the result of intervention by [...]. [...] also confirmed that this "export" vessel would be co-owned by [...]. The first of the [...] vessels was delivered in 2015 for LNG transport on the [...] and [...]. More recently, on 22 June 2018, the Hudong Zhonghua-built [...]—a domestically ordered vessel delivered on [...] to transport LNG that [...] purchases from the [...]—broke down while fully laden with LNG cargo en route from [...] to China, only [...] months after the vessel had been delivered. The Hudong Zhonghua market entry history suggests **reliability issues** may plague LLNGCs built at shipyards even after a*

¹¹⁰¹ Response to the First Letter of Facts, paragraph 46.

¹¹⁰² Response to the First Letter of Facts, paragraph 46.

decade of accumulated experience gained by robust and full support of the Chinese government.”¹¹⁰³ (footnote omitted).

- (667) In its Response to the Second Letter of Facts,¹¹⁰⁴ the Notifying Party argues that the Commission would have also failed to respond to the Notifying Party’s arguments that the Commission would have not balanced [...] statement against contradictory feedback from customers on the same topic, referring to questions 29.2 and 29.2.1 of the Commission’s Questionnaire Q8 to customers. The Commission, however, refers to what already mentioned in **Section 8.3.8.3 (A) b)**, in which it is stated, in reference to questions 29.2 and 29.2.1. of questionnaire Q8 to customers, that a majority of customers that expressed an opinion confirmed that they are reluctant placing or re-placing orders from a shipbuilder/shipyard that has previously delivered a conventional LLNGC with technical problems in the [...] years after delivery especially if such technical problem is of a certain importance or occurs with a certain frequency. Moreover, in response to the Notifying Party’s argument, the Commission notes that customers’ reply to questions 29.2 and 29.2.1 of the Commission’s Questionnaire Q8 to customers do not contradict customers’ replies to questions 29 and 29.1 of the Commission’s questionnaire Q3 to customers (or vice versa). In any event, the Commission’s assessment on CSSC (Hudong)’s LLNGC shipbuilding capabilities is based on all factors mentioned in this decision, especially in **Sections 8.3.1, 8.3.4.2, 8.3.8, 8.3.9**. This means that even if the Notifying Party’s argument was correct (quod non), this would still be inconsistent with the evidence put forward by the Commission and with the fact that CSSC (Hudong)’s still has, after [...] years since its first LLNGC order a very limited market share and that customers order from CSSC (Hudong) for very specific reasons only.
- (668) Seventh, the Commission considers that the fact that [...] reserved slots with CSSC (Hudong) and that it has started exercising options in the context of the [...] bid does not have anything to do with an alleged change of perception of CSSC (Hudong) by the market. Indeed, the Notifying Party argues that even if CSSC (Hudong) were to not fully compare to the Korean shipbuilders on a (limited) number of competitive parameters, this did not impact the decision of [...], an important LLNGC customer, to order from CSSC.¹¹⁰⁵ The Notifying Party bases itself on the statement that CSSC met the “*technical requirements to participate in the tender*” and was determined to be a “*successful bidder*”. However, the Commission considers that these statements should be seen in the following context (see also **Section 8.3.4.2.(B) a)**): (i) the [...] and CSSC (Hudong) was considered “*given the [...]*”¹¹⁰⁶ (see also **Section 8.3.4.2.(B) c)**), and a much smaller amount of vessels with CSSC (Hudong) (currently only around [...], of which [...] already exercised and [...] still valid options) than with any other successful bidder (currently [...] as still valid options with HHI; [...] already exercised with DSME and [...] still valid options; [...] already exercised with SHI and [...] still valid options.¹¹⁰⁷ See also, already at the time, **SO, paragraph 533**); (ii) the inclusion of the minimum commitment does not reflect any perception of a shipbuilder’s quality (**Section 8.3.4.2 (B) c)** and **Section**

¹¹⁰³ [...] observations on the SO, page 2. [DOC ID: 3851]

¹¹⁰⁴ Response to the Second Letter of Facts, paragraph 86.

¹¹⁰⁵ Supplemental submission regarding the Notifying Party’s observations on the continued access to the file granted on 21 October 2020, dated 24 November 2020, paragraph 19; See also Response to the Second Letter of Facts, paragraph 104.

¹¹⁰⁶ Agreed non-confidential minutes of the call with [...] dated 16 July 2020, paragraph 5. [DOC ID: 4101]

¹¹⁰⁷ [...]’s reply to question 1 and 2(c) of the Commission’s RFI 5 to [...] of 11 October 2021. [DOC ID : 5974]

8.3.4.2 (B h)); (iv) [...] may have had the incentive to purchase vessels from CSSC (Hudong) (which delivers LLNGCs mainly to transport LNG to China (see **Section 8.3.4.2 (B j)**) in order to ensure future purchases of LNG from [...] by [...].

- (669) Eighth, the Commission considers that there is no evidence that CSSC (Hudong) would be catching up with the [...] big Korean shipbuilders. In an email to the case team dated 28 January 2021,¹¹⁰⁸ the Notifying Party submits, partially on the basis of public sources that CSSC (Hudong) is catching up with Korean shipbuilders. According to the Notifying Party, the mere fact that CSSC (Hudong) and HHIH have become the final [...] shortlisted shipbuilders competing in the tender ([...]) for [...] firm orders (and [...] separate options) for conventional LLNGCs by [...] would show that CSSC (Hudong) would be now “*clearly a capable and reputable shipbuilders of LLNGCs in the eyes of customers, who consider it to be comparable to the Korean yards*”. Moreover, the Notifying Party submits that the above would show (i) CSSC (Hudong)’s commitment, (ii) that CSSC (Hudong) is considered as an alternative by non-Chinese customers and that (iii) it does exert competitive constraint on the Parties. [...].¹¹⁰⁹ In any event, the Commission considers that CSSC (Hudong)’s winning of tenders (let alone its mere participation) does not change the Commission’s assessment that, while CSSC (Hudong) is in the market, it does not exert a sufficient competitive constraint on the Parties for the reasons explained in **Section 8.3.4.2**.
- (670) Ninth, the Commission considers that LLNGC suppliers do not see CSSC (Hudong) as a credible buyer of LLNGC equipment. As [...] stated, it: “*agrees with the Commission’s finding that LLNGC suppliers do not see Chinese or Japanese shipyards as credible buyers of LLNGC equipment.*” As [...] further stated in support of its position, “[i]ndeed, these shipyards cannot credibly replace the Korean shipyards in the suppliers’ client portfolio as, for instance, they often do not build the same type of vessels, use different CCS technologies and are seen by the Shipowners as using lower quality standards, etc.”¹¹¹⁰
- (671) In conclusion, the Commission considers that CSSC’s LLNGC shipbuilding capabilities are not comparable to those of Korean shipyards under several parameters, thereby limiting its competitiveness at present and in the foreseeable future.
- e) *CSSC (Hudong) is behind Korean yards in terms of CCS technology.*
- (672) In this Section, the Commission sets out pieces of evidence confirming that CSSC (Hudong) [...] does not allow it to exert a sufficient competitive constraint on the Parties. Contrary to what is argued by the Notifying Party in the Response to the Second Letter of Facts, neither [...] nor the Commission have ever concluded that CSSC is behind HHIH, DSME and SHI in terms of cargo tank technologies because NO or MARK is technology is superior to the other one.¹¹¹¹
- (673) First, the Commission recalls that, as mentioned in **Section 8.3.3**, the Parties (especially DSME) are important innovators (up to the point that shipbuilders, like the Parties, with an important track record can and do implement non-design improvements to the cargo tank), that innovation is an important competitor force in

¹¹⁰⁸ The Notifying Party’s email to the case team “Updates on developments in the LLNGC market” dated 28 January 2021.

¹¹⁰⁹ The Notifying Party’s reply to question 14 of RFI 65, Annex Q14.

¹¹¹⁰ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 42. [DOC ID: 3859]

¹¹¹¹ Response to the Second Letter of Facts, paragraph 79.

the LLNGC market and that CSSC is a more distant competitor in terms of number and Technology Relevance of patents.

(674) Second, the Commission recall than, as explained in **Section 8.3.4.2 (B) d)**, comparing the Chinese shipbuilders to Korean LLNGCs shipbuilders in terms of **various competition parameters**, such as quality and know-how, the majority of customers expressing a meaningful opinion indicated that Chinese shipbuilders are comparatively worse than Korean shipbuilders.

(675) [...].¹¹¹² [...].¹¹¹³ [...].¹¹¹⁴ [...].¹¹¹⁵ [...].¹¹¹⁶

(676) [...].¹¹¹⁷ [...].

(677) [...].¹¹¹⁸ [...].

(678) In conclusion, the Commission considers that the above evidence supports the customers' perception that CSSC (Hudong) is behind HHI, DSME and SHI in terms of technology and confirms its finding that CSSC (Hudong) currently does not constrain the Parties in a sufficient or significant manner and is unlikely to do so post-Transaction.

f) *Building LLNGCs in CSSC (Hudong) requires more supervision.*

(679) In this Section, the Commission sets out the reasons why it considers that building LLNGCs in CSSC (Hudong) requires more supervision for the following reasons.

(680) First, the Commission notes that, as explained in **Section 8.3.4.2 (B) a), d)** and **Section 8.3.9.2**, according to customers' feedback, building LLNGCs in CSSC (Hudong) requires more supervision ([...] times as much) compared to building in Korea, which a customer defined as "burdensome" (see **Section 8.3.9.2**).

(681) Second, the Commission notes that the above is confirmed by [...], according to which building an LLNGC at [...] requires a supervision team of [...] people. In this respect, [...] submitted that: "*The number of supervisors can reach to around [...] at peak time, and the ratio of foreign supervisors to [...] supervisors is generally about [...]. The duration of supervision depends on the construction period of the whole project. At present, supervision time of the first ship of a project generally takes about [...] months, starting at the beginning till completion. The supervision time of the rest of the ships are about [...] months before delivery.*"¹¹¹⁹

(682) Third, the Commission notes that this total number of supervisors is in line with the number of [...] provided by a customer (see **Section 8.3.9.2**). However, it seems lower than what [...] (a customer which has ordered an LLNGC with CSSC (Hudong)) previously stated, namely that the on-site supervising team in practice was [...] times bigger than with a Korean shipbuilder (see **Section 8.3.4.2 (B) a), d)**). Overall, it appears therefore likely that the number of supervisors is not lower than [...].

¹¹¹² The Notifying Party's reply to question 22 of RFI 67, Annex Q22.

¹¹¹³ The Notifying Party's reply to question 22 of RFI 67, Annex Q22.

¹¹¹⁴ <https://www.gti.energy/wp-content/uploads/2019/10/191-LNG19-04April2019-Ezzarhouni-Adnan-paper.pdf>

¹¹¹⁵ Minutes of the conference call with [...] dated 22 July 2020, paragraph 10. [DOC ID: 4032]

¹¹¹⁶ Minutes of the conference call with [...] dated 22 July 2020, paragraph 12. [DOC ID: 4032]

¹¹¹⁷ [...] reply to question 12 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹¹¹⁸ Minutes of the conference call with [...] dated 22 July 2020, paragraph 14. [DOC ID: 4032]

¹¹¹⁹ [...] reply to question 19 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

- (683) Fourth, the Commission notes that in the Response to the SO (para. 268, 305-308), the Notifying Party states that CSSC (Hudong) currently requires more supervision than a Korean yard (which require around [...]) but estimates that the cost of such supervision should have little impact (around [...]) on the price of the vessel (which is in any event around [...] lower than the price of a Korean vessel). However, the Commission notes that the requirement to have a larger number of supervisors is considered by [...] as leaving a still “*measurable gap*” between CSSC and the Korean shipbuilders: “*the market seems to consider that CSSC is not fully competitive with the Korean shipyards. [CONFIDENTIAL] [NON-CONFIDENTIAL SUMMARY: “as it happens in every market in which quantitative and qualitative track record is extremely important, the currently active three biggest Korean shipbuilders are best-in-class, leaving a measurable gap between them and the rest, in particular in terms of time required for vessel delivery, and the number of supervisory staff considered by each stakeholder to be required per vessel”]*”.¹¹²⁰ [...] also stated that “*It requires significant amount of time and significant effort for the rest [non Korean shipbuilders] to gain market shares in the worldwide market for LLNGCs*”.¹¹²¹
- (684) The Commission therefore considers that building LLNGCs in CSSC (Hudong) requires more supervision compared to building in Korea.
- g) CSSC (Hudong) does not have a sufficiently wide product portfolio of LLNGCs.*
- (685) In this Section, the Commission finds that, contrary to what is argued by the Notifying Party,¹¹²² CSSC does not have sufficiently wide product portfolio to cater for some specific demands beyond conventional LLNGCs, if at all.
- (686) Indeed, a majority of customers indicated that they would not entrust a Chinese shipbuilder to build all or some particular types of LNGCs.¹¹²³ For example, some customers explain they would currently not entrust a Chinese shipbuilder with building FSRUs or ice-breakers LNGCs in particular.¹¹²⁴ One customer would be reluctant to order LNGCs incorporating new technology such as ice-breaker LLNGCs, larger sized vessels and vessels with new propulsion system.¹¹²⁵ Another customer would be reluctant to order any LNGCs because it feels that Chinese shipbuilders have not reached a satisfactory level in terms of performance, quality and technology to match the Korean yards and delivery times and prices are not competitive enough to consider taking the risk.¹¹²⁶ Another customer would be reluctant to order any new designs from a Chinese builder and it “*would tend to stick to designs that the Chinese builder has successfully built in the recent year*”.¹¹²⁷
- h) Customers feedback on price/quality comparison should be read in context.*
- (687) In this Section, the Commission sets out its assessment of the context in which an alleged customers’ price/quality comparison occurs.
- (688) The Commission considers that the submission made over the course of the market investigation by a customer that has contracted with [...] does not support the

¹¹²⁰ Minutes of the conference call with [...] dated 22 July 2020, paragraph 13. [DOC ID: 4032]

¹¹²¹ Minutes of the conference call with [...] dated 22 July 2020, paragraph 15. [DOC ID: 4032]

¹¹²² See, for example, Response to the SO, paragraphs 1026-1032.

¹¹²³ Replies to question 28 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹¹²⁴ Replies to question 28 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹¹²⁵ Replies to question 41 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹¹²⁶ Replies to question 41 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹¹²⁷ Replies to question 41 of Questionnaire Q8 to Customers. [DOC ID: 3241]

Notifying Party's argument in the Response to the SO (paragraphs 231), according to which customers choose a shipbuilder such as CSSC (Hudong) based on its overall better value proposition. The customer did compare two bids from the same shipbuilder including CSSC (Hudong) and did not refer to an overall better value of CSSC (Hudong)'s offer compared to other shipbuilders such as HHI, DSME and SHI. Specifically, the customer stated as follows: "[...] requested each participating shipbuilder to submit bids with and without a minimum number of options to be exercised by [...] and then compared the value being offered between the bid with the minimum and the bid without the minimum. [Please refer to replies to question 1 and 14 of RFI [28 July 2020]]."¹¹²⁸ The customer confirmed that it was referring to the difference between the two offers made by the same shipbuilder (i.e. the one without the minimum commitment compared to the one with the minimum commitment, offered by the same shipbuilder).¹¹²⁹

- (689) The Commission considers, as explained in **Section 8.3.4.2 (B) c)** that the possible inclusion of a minimum commitment in a contract does not necessarily reflect the customer's perception of a shipbuilder's quality. As explained by a [...]: "*That being said, [...] already clarified in its reply to RFI 2 that one should not overstate the importance of these minimum exercise obligations and that, given its special situation (i.e. [...], [...] preferred to reserve capacity with all four shipbuilders) the presence of minimum obligations should not necessarily reflect its perception of a shipbuilder's relative quality. While it is expected that such minimum options will be exercised, the liquidated damages payable for not exercising them would be [CONFIDENTIAL] per vessel, which even at the high end of such range is a relatively small fixed amount (relative to the value of the vessel). [CONFIDENTIAL].*"¹¹³⁰
- (690) In conclusion, the Commission finds that customers' feedback on price/quality comparison should be read in context.
- i) *Customers ordered and would consider ordering LLNGCs from China only in some specific circumstances.*
- (691) The Commission considers, as also shown in **Section 8.3.9**, that customers ordered and would consider ordering LLNGCs from China only in some specific circumstances for the following reasons.
- (692) First, this is shown, more generally with respect to Chinese shipbuilders and LNGCs by the market investigation. Indeed, customers that would consider ordering LNGCs from a Chinese shipbuilder would do so only in some specific circumstances.¹¹³¹ For example, a customer explained that "*price incentive needs to be there compared to Korean to compensate for lower quality and potentially higher maintenance cost*".¹¹³² Another circumstance that was mentioned related to instances in which customers would be required to use an LNGC manufactured in China.¹¹³³ Customers mentioned that this would happen at the charterer's request, more specifically in those instances in which the Chinese LNG importer (or the Chinese state) accepted only LNG transportation on a Chinese-built vessel. A customer, however, explained

¹¹²⁸ Agreed non-confidential minutes of the call with [...] dated 16 July 2020, paragraph 4. [DOC ID: 4101]

¹¹²⁹ [...] reply to question 14.a of Commission RFI to [...] dated 28 July 2020. [DOC ID 3922]

¹¹³⁰ Agreed non-confidential minutes of the call with [...] dated 16 July 2020, paragraph 5. [DOC ID: 4101]

¹¹³¹ Replies to question 26 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹¹³² Replies to question 26 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹¹³³ Replies to question 31 of Questionnaire Q3 to Customers. [DOC ID: 3236]

that, at the moment, these projects, are not many.¹¹³⁴ This clearly indicates that CSSC (Hudong) fulfils a role in the market that is akin to the “second best” rather than first tier supplier competing on par with the three big shipbuilders located in Korea.

- (693) Second, and more specifically with respect to CSSC (Hudong) and LLNGCs, this was also confirmed in a hypothetical question of the market investigation where the majority of customers that expressed a meaningful opinion indicated either that they would not order at all or that they would consider ordering from a Chinese shipbuilder, specifically CSSC (Hudong),¹¹³⁵ in the next five years LLNGCs¹¹³⁶ subject to certain conditions or in specific circumstances.¹¹³⁷ These conditions or circumstances relate to project requirements (charterers requiring that a vessel be built by a particular yard in China or a project belonging to a Chinese LNG import), price, slot availability, delivery time and quality.¹¹³⁸ For example a customer stated that it has never ordered any type of LNGC from any Chinese shipbuilder and that it may consider to do so only for Chinese-sponsored LNG projects, *i.e.* “*projects for Chinese LNG buyers, for which a non-Chinese shipping company may have to enter into a JV with a Chinese shipping company, for which the Chinese state will force you to use Chinese-built LNG carriers.*”¹¹³⁹ This view was shared by another customer who stated that “*it does not exclude placing orders for large LNG carriers with CSSC, especially for Chinese state-sponsored LNG projects as in that case the LNG carrier will have to be Chinese-built.*”¹¹⁴⁰ Another customer stated more generally that it could not exclude a Chinese shipyard “*if Chinese customers insist on using Chinese built vessels.*”¹¹⁴¹ A customer in this regard noted that it “*would not order on speculation (without a charterer) from CSSC or from any other shipbuilder without a solid track record. The issue with ordering on speculation is that the owner has to be certain that there is a customer base for such a vessel.*”¹¹⁴²
- (694) In conclusion, the Commission considers that customers ordered and would consider ordering LLNGCs from China only in some specific circumstances.
- j) *CSSC has delivered LLNGCs mainly to transport LNG to China and this is not expected to change in the foreseeable future.*
- (695) In **Section 8.3.1**, the Commission finds that CSSC (Hudong) has only received orders from Chinese customers or from customers ordering from CSSC for very specific reasons since [...].
- (696) In **Section 8.3.4.2 (B) b)**, the Commission [...].
- (697) In **Section 8.3.4.2 (B) i)**, the Commission finds that customers ordered and would consider ordering LLNGCs from a Chinese shipbuilder only in some specific circumstances, such as where customers would be required to use an LNGC manufactured in China at the charterer’s request, more specifically in those instances

¹¹³⁴ Replies to question 31.1 of Questionnaire Q3 to Customers.[DOC ID: 3236]

¹¹³⁵ Replies to question 40.2 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹³⁶ Replies to question 40 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹³⁷ Replies to question 40.1 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹³⁸ Replies to question 40.1 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹³⁹ Minutes of the conference call with [...] dated 7 February 2020, paragraph 10. [DOC ID: 2092]

¹¹⁴⁰ Minutes of the conference call with [...] dated 18 February 2020, paragraph 6. [DOC ID: 2839]

¹¹⁴¹ Minutes of the conference call with [...] dated 27 February 2020, paragraph 3. [DOC ID: 2222]

¹¹⁴² Minutes of the conference call with [...] dated 24 February 2020, paragraph 10. [DOC ID: 2663]

in which the Chinese LNG importer (or the Chinese state) accepted only LNG transportation on a Chinese-built vessel.

- (698) In this Section, the Commission finds that CSSC has delivered LLNGCs mainly to transport LNG to China and this is not expected to change in the foreseeable future for the following reasons.
- (699) First, the Commission finds that, as confirmed by [...], [80-90]% of LLNGCs delivered by CSSC are used to transport LNG to China: *“According to the feedback from ship owners, up to now, CSSC has delivered [...] LLNGCs, [...] (accounting for [80-90]%) of which are used to transport LNG to China. Only [...] ships of the [...] project joined the [...] fleet for worldwide deployment.”*¹¹⁴³
- (700) Second, [...] statement is consistent with [...], which considers that all LLNGCs built in China are used to transport LNG to China. According to [...], the Chinese state often requires from the ship owners (charterers) that CSSC (Hudong) wins the award for the construction of the LLNGCs that will supply LNG to China: *“[...] explains that as of today, all LLNGCs built in China are intended to satisfy the domestic market – if not in terms of customers’ demand, in terms of LNG projects. Indeed, to understand the domestic nature of the market one should not so much look at nationality of the customer but at the destination of the LNG (which is China). It is so because, when LNG is to be supplied to China, the Chinese state often requires from the shipowners (charterers) that a Chinese shipyard (i.e. CSSC (Hudong)) wins the award for the construction of LLNGCs. However, the market seems to consider that CSSC is not fully competitive with the Korean shipyards.”*¹¹⁴⁴ [...] has further stated that *“no LLNGCs intended to satisfy a non Chinese market have been built so far by CSSC.”*¹¹⁴⁵
- (701) Third, [...] and [...] statements are consistent with [...] submission, in which [...] stated that: *“15 years after Hudong shipyard started building LLNGCs—the still large market share gaps suggest it will take time and experience before Chinese shipbuilders might effectively constrain the Korean shipbuilders in LLNGCs.”*¹¹⁴⁶ [...] added: *“Back in 2013, LNGC CCS engineering firm [...], reported, the Chinese government “increasingly requires at least half of the LNG carriers used for each LNG import contract signed by the Chinese gas companies to have been built by domestic shipyards. Despite institutional support of the Chinese government over a long period of time, only one Chinese yard, Hudong, has successfully built LLNGCs.”*¹¹⁴⁷ [...] further noted that post-Transaction customers would have to choose between the merged entity and SHI and possibly, *“especially if supplying LNG to China”*¹¹⁴⁸, Hudong Zhonghua Shipbuilding Group *“though it controls less capacity.”*¹¹⁴⁹
- (702) More specifically, [...] further indicated that, according to press reports, [...] awarded options to CSSC (Hudong) on the condition that China buys natural gas from [...]: *“In April 2020, [...] reserved slots through the year [...] for [...] 175,000 cbm LLNGC at Hudong-Zhonghua with the option for [...] additional vessels, the largest “export” order for any Chinese shipyard ever. While slot reservations are*

¹¹⁴³ [...] reply to question 18 of Commission RFI2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹¹⁴⁴ Minutes of the conference call with [...] dated 22 July 2020, paragraph 13 [DOC ID: 4032]

¹¹⁴⁵ Minutes of the conference call with [...] dated 22 July 2020, paragraph 13 [DOC ID: 4032]

¹¹⁴⁶ [...] observations on the SO, page 1. [DOC ID: 3851]

¹¹⁴⁷ [...] observations on the SO, pages 1 and 2. [DOC ID: 3851]

¹¹⁴⁸ [...] observations on the SO, page 15. [DOC ID: 3851]

¹¹⁴⁹ [...] observations on the SO, page 15. [DOC ID: 3851]

not a Letter of Intent (LOI) and less binding, construction and delivery of LLNGC vessels are expected in [...] after [...] “matches” shipping companies with the shipyard bids. In the news article, “China’s LNG trading pattern to change with [...] newbuilding order,” the industry press analysed that, “the three major South Korean LNG shipyards have [...] LNG carriers on order while Hudong-Zhonghua has just [...]. Therefore, the first order in the series being awarded to the Chinese shipyard was surprising...We believe [...] order for LNG ships at China’s shipyards may translate into investment by China-based companies in [...] project. China will need 80% more natural gas by 2030 to meet its growing demand which can now be sourced from [...].” Indeed, the [...] project will increase LNG production capacity from 77 million tons a year to 110 million tons by 2024 and 126 million tons by 2027. [...]would want to lock in LNG sales to China, soon to surpass Japan as the world’s largest LNG importer, especially amid growing American LNG exports; China signed a 20-year contract in 2019 to buy LNG from [...]. Business press quoted an industry insider, “This agreement was reportedly reached on the condition that China buys natural gas from [...]. In other words, Hudong-Zhonghua did not beat the Korean companies in the actual tender.”” (footnotes omitted)¹¹⁵⁰

- (703) Indeed, as explained in **Section 8.3.4.2 (B) d)**, [...] may have had the incentive to purchase vessels from CSSC (Hudong) in order to ensure future purchases of LNG from [...] by China. Indeed, [...] stated in that respect: *“Some [...] -operated LNG joint ventures have long-term LNG sale and purchase agreements with Chinese customers. Also, LNG [produced by [...]] is sometimes sold to Chinese customers on a “spot” basis (meaning ‘cargo-by-cargo’ or a small number of cargoes under a single sales contract in a short duration).”*¹¹⁵¹
- (704) Fourth, the Commission considers that the Notifying Party’s argument pursuant to which CSSC (Hudong) would have an advantage in building track record on account of Chinese projects would not change the Commission’s assessment on the fact that CSSC (Hudong) does not exert a sufficient competitive constraint on the Parties and this is unlikely to change post-Transaction. More specifically, in its Response to the SO (para. 277 and 351-354), the Notifying Party submitted that CSSC has a unique advantage of being able to build a lasting track record on account of Chinese LNG projects. In the Response to the First Letter of Facts, the Notifying Party submitted that Commission would have misinterpreted the new facts around CSSC’s alleged disadvantage in relation to Chinese LNG projects.¹¹⁵² In the Response to the Second Letter of Facts, the Notifying Party maintains that CSSC (Hudong)’s serving its domestic market does not reduce its scope for customers from outside China as international customers import LNG into China and Chinese demand for LNG is expected to increase significantly.¹¹⁵³ In this respect, the Commission considers that even if Chinese project and the number of Chinese-built LLNGCs were to increase in the near future, for the reasons outlined in **Section 8.3.4.2 (B) d) -i)** and **Section 8.3.8** and for the reasons outlined below, it is unlikely that CSSC will also catch up on the qualitative side and exert a sufficient competitive constraint in the worldwide LLNGC market in the foreseeable future. Moreover, as already mentioned in **Section 8.3.9**, the Commission notes that, [...].

¹¹⁵⁰ [...] observations on the SO, pages 2 and 3. [DOC ID: 3851]

¹¹⁵¹ [...] reply to question 9 of Commission RFI to [...] dated 28 July 2020 [DOC ID: 3922]

¹¹⁵² Response to the First Letter of Facts, paragraphs 64-66.

¹¹⁵³ Response to the Second Letter of Facts, paragraphs 75, 105 and 113.

- (705) In conclusion, CSSC has delivered LLNGCs predominantly (if not only) to transport LNG to China as a destination and this is not expected to change. This is a disadvantage for CSSC (Hudong) as it reduces the scope of potential customers of CSSC (Hudong) and thus is likely to render CSSC (Hudong) less competitive in the worldwide market for LLNGCs. For this reason, the Commission considers that CSSC (Hudong) does not exercise a sufficient or significant competitive constraint on the Parties, and is unlikely to exert a sufficient or significant competitive constraint on the Parties post-Transaction.
- k) *Korean shipbuilders do not seem to benchmark their prices against Chinese shipbuilders.*
- (706) In this Section, the Commission considers that Korean shipbuilders do not seem to benchmark their prices against Chinese shipbuilders for the following reasons.
- (707) First, the Commission notes that the majority of customers that responded to the market investigation explained that they never experienced a situation in which, during negotiations leading towards ordering LNGCs, Korean shipbuilders improved their offer in order to match an offer made by a Chinese shipbuilder, neither in terms of price nor in terms of other commercial conditions or vessel specifications.¹¹⁵⁴ Indeed, according to a customer, although the price of Korean shipbuilders might come close to the price of Chinese shipbuilders, “*Korean shipbuilders in general will have [...] premium over Chinese shipbuilders*”.¹¹⁵⁵ The fact that Korean shipbuilders maintain high market shares in this market despite the price premium clearly indicates that Chinese ships are, at best, distant substitutes to the Korean made ships. In this regard even if the Commission accepted (quod non) that Korean shipbuilder benchmarked their prices against Chinese shipbuilders, the Commission notes, as explained in **Sections 8.3.2.2 (A) and 8.3.9.2 (B)**, that while price plays an important role, customers do not systematically select the cheapest offer as they give more weight to other criteria such as track record, technical specifications and technologies and delivery time.
- (708) Second, the Commission notes that [...] submitted that [...] usually quotes prices several million dollars lower than that of HHI, DSME and SHI but that sometimes HHI, DSME and SHI quote lower than CSSC (Hudong): “*Compared to HHI, DSME and SHI, Hudong-Zhonghua has certain advantages of low cost. But, in light of the high market share of the HHI, DSME, SHI and their good market reputation, Hudong-Zhonghua usually quotes several million dollars lower than that of HHI, DSME and SHI to win orders. However, benefit from the great support from the Korean government, HHI, DSME and SHI's quotes are sometimes even lower than Hudong-Zhonghua. For instance, HHI quoted several million dollars lower than Hudong-Zhonghua in [...] LNG project last year.*”¹¹⁵⁶ In other words, CSSC (Hudong) usually offers a lower price than the shipbuilders HHI, DSME and/or SHI, although the price of an LLNGCs built in Korea (in this case, built by HHI) can also be lower than the price offered by CSSC (Hudong).
- (709) In conclusion, the Commission considers that Korean shipbuilders do not appear to benchmark their prices against Chinese shipbuilders, that is CSSC (Hudong), but rather to price according to other considerations.

¹¹⁵⁴ Replies to question 27 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹¹⁵⁵ Replies to question 27 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹¹⁵⁶ [...] reply to question 20.b of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

- l) *CSSC and CSIC merger is unlikely to affect CSSC (Hudong) position in the foreseeable future.*
- (710) In this Section, the Commission sets out its assessment of the alleged impact of the merger between CSSC and the former CSIC on the LLNGC market, in particular on the alleged improved LLNGC capability and LLNGC capacity of CSSC caused by the merger between CSSC and CSIC. The Commission considers that the CSSC and the CSIC merger is unlikely to affect CSSC (Hudong) position in the foreseeable future for the following reasons.
- (711) First, the Commission notes that CSIC never received any orders for LLNGCs.¹¹⁵⁷ [...] has stated that it may have had (prior to the merger with CSSC) the intention to enter the market for LLNGCs but its focus would have been on domestic customers only¹¹⁵⁸ and according to [...] “*transferring know-how from one yard with track-record in building large LNG vessels to a yard with no track-record is very difficult*”.¹¹⁵⁹
- (712) Second, the Commission considers that [...].¹¹⁶⁰ [...] ¹¹⁶¹ [...] ¹¹⁶² [...] ¹¹⁶³ [...].¹¹⁶⁴
- (713) Third, the Commission notes that the feeling that CSSC and CSIC merger will not fundamentally alter the ability of CSSC to constrain the merged entity post-Transaction is also shared by [...]: “[...] *does not believe the merger of the Chinese shipyards CSSC and CSIC will increase their ability to compete and innovate in this space as there is currently a big gap and they lack the crucial know-how of how to put it all together so that it works. Indeed, the Chinese lack the ability to use the technology right, to mast the entire production process with all of its complexities so as to deliver a vessel of good quality without delays. LNG tankers are very high technology vessels and simply cannot be built with the basic shipbuilding know-how.*”¹¹⁶⁵
- (714) In conclusion, the Commission considers that the CSSC and the CSIC merger is unlikely to affect CSSC (Hudong) position in the foreseeable future.
- m) *The alleged facilitation of shipbuilding financing is not likely to have a significant impact on customers’ choice.*
- (715) In this Section, the Commission considers that the alleged facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders is not is not likely to sufficiently enable CSSC to exert a sufficient competitive constraint on the Parties post-Transaction for the following reasons.

¹¹⁵⁷ The Notifying Party’s reply to question 1 of RFI 35, Annex Q1 (followup) as an updated version of the Notifying Party’s reply to question 7 of RFI 19, Annex Q7.

¹¹⁵⁸ “... *before merging with CSSC, [...] had the intention to try to enter the market for conventional large membrane LNG carriers with focus on domestic market*”. Minutes of the conference call with [...] dated 20 February 2020, paragraph 11. [DOC ID: 2889]

¹¹⁵⁹ Minutes of the conference call with [...] dated 20 February 2020, paragraph 12. [DOC ID: 2889]

¹¹⁶⁰ DSME’s internal documents responsive to RFI 3, “*Report on CSSC-CSIC Merger Rumor*”, dated 3 April 2018, page 5, Regarding CSIC-CSSC integration(180403).pdf, [DOC ID: 1837-309]

¹¹⁶¹ DSME’s internal documents responsive to RFI 3, “*Report on CSSC-CSIC Merger Rumor*”, dated 3 April 2018, page 5, Regarding CSIC-CSSC integration(180403).pdf. [DOC ID: 1837-309]

¹¹⁶² DSME’s internal documents responsive to RFI 3, “*Report on CSSC-CSIC Merger Rumor*”, dated 3 April 2018, page 5, Regarding CSIC-CSSC integration(180403).pdf. [DOC ID: 1837-309]

¹¹⁶³ DSME’s internal documents responsive to RFI 3, “*Report on CSSC-CSIC Merger Rumor*”, dated 3 April 2018, page 5, Regarding CSIC-CSSC integration(180403).pdf. [DOC ID: 1837-309]

¹¹⁶⁴ [...].

¹¹⁶⁵ Minutes of the meeting with [...] dated 1 October 2019, paragraph 7. [DOC ID: 3201]

- (716) First, the Commission notes that the majority of respondents that expressed a meaningful opinion during the market investigation stated that they are unaware of any facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders.¹¹⁶⁶
- (717) Contrary to what is argued by the Notifying Party in the Response to the SO,¹¹⁶⁷ which considers that the responses showed that only [40-50]% of respondents ([...] out of [...]) said that they were not aware of any facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders, the Commission's assessment of customers' reply to question 44 of Q8 to Customers is correct.¹¹⁶⁸ Indeed, out of [...] respondents, [...] in total expressed a meaningful opinion: [...] customers replied that they were aware of the existence of such mechanisms, [...] replied that they were not. However, of the [...] customers among those which replied "other" that expressed a meaningful opinion, [...] clearly showed that they were not really aware of the existence of such mechanisms. Indeed, one of those stated that "*[a]ny country might encourage building of any type of vessels in their shipyards to ship goods [...] to the country, meanwhile I am not aware whether this is a Chinese Government rule as much as LNG carriers or other type of vessels are concerned*".¹¹⁶⁹ Another one of those stated that "*[w]e understand that there are some initiatives, but we are not familiar with details of such facilitation programs*".¹¹⁷⁰ In paragraph 341 of the Response to the SO, the Notifying Party argues that "*[...] and [...] also specifically mentioned financing arrangements as a competitive advantage of Chinese players*". On this claim, the Commission notes that [...] cannot be double-counted (as already included among those that replied "yes" to question 44 of Q8 to customers). With respect to [...], the Commission notes that even if counted in the above statistics, there would still be [...] out [...] customers that expressed a meaningful opinion which are not aware of any facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders. Moreover, the Commission notes that of the [...] other customers, only [...] ordered from CSSC.¹¹⁷¹ This means that even if proven, such mechanisms are not effective to turn LLNGC customers to order more LLNGCs from CSSC. In the Response to the Second Letter of Facts, the Notifying Party presents essentially the same arguments (although from a different angle) as the ones it presented in the Response to the SO, and reported above in this paragraph, but still questioning the Commission's assessment of customers' reply to question 44 of Q8 to Customers.¹¹⁷² The Commission considers that, for these reasons, its assessment of customers' reply to question 44 of Q8 to Customers and of the fact that, even if proven, such mechanisms are not effective to turn LLNGC customers to order more LLNGCs from CSSC, does not change.
- (718) Second, the Commission notes that none of those customers who indicated that they are aware of such financing have declared that they have ever requested to the non-Chinese shipbuilder similar financing conditions to those of Chinese banks and leasing companies when placing an order for a new vessel built by a non-Chinese

¹¹⁶⁶ Replies to question 44 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹⁶⁷ The Notifying Party's Response to the SO, paragraphs 339-341.

¹¹⁶⁸ Replies to question 44 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹⁶⁹ Replies to question 44.1 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹⁷⁰ Replies to question 44.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹¹⁷¹ The Notifying Party's reply to question 38 of RFI 67, Annex Q38. See also **Section 8.3.6** of this Decision.

¹¹⁷² Response to the Second Letter of Facts, paragraph 109.

shipbuilder. One customer which has ordered LLNGCs from HHI and DSME indicated during the market investigation that it had used Chinese finance on an order in Korea without the involvement of the yards.¹¹⁷³ Contrary to what is argued by the Notifying Party,¹¹⁷⁴ this is a relevant point as it shows that customers do not order “Korean” because of equivalent conditions to the alleged Chinese facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders.¹¹⁷⁵ Moreover, the Commission considers that this is also relevant regardless of whether a customer is or is not aware of such alleged Chinese financing schemes and regardless of whether the customer requested, more or less explicitly, to the non-Chinese shipbuilder similar financing conditions to those of Chinese banks and leasing companies when placing an order for a new vessel built by a non-Chinese shipbuilder. Indeed, the fact that that customer ordered Korean would still show that customers do not order “Korean” because of equivalent conditions to the alleged Chinese facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders. Therefore, contrary to what is argued by the Notifying Party in the Response to the Second Letter of Facts,¹¹⁷⁶ the Commission reiterates what stated in the above paragraphs of this Section, namely that even if proven, such mechanisms are not effective to turn LLNGC customers to order more LLNGCs from CSSC.

- (719) Third, the Commission finds that the fact customers do not order Korean because of equivalent conditions to the alleged Chinese facilitation of shipbuilding financing by Chinese banks and leasing companies in cooperation with Chinese shipbuilders is also shown by internal documents of the Parties.
- (a) [...].¹¹⁷⁷ [...].¹¹⁷⁸ [...].¹¹⁷⁹
 - (b) [...].¹¹⁸⁰
 - (c) [...].¹¹⁸¹
 - (d) [...].¹¹⁸²
- (720) The Commission notes that, as acknowledged by the Notifying Party in reply to question 11 of RFI 67, the bid(s) were won by SHI-Zvezda and DSME.
- (721) In light of the above and contrary to what is argued by the Notifying Party in the Response to the Second Letter of Facts,¹¹⁸³ the Commission considers that the alleged facilitation of shipbuilding financing available to CSSC is not likely to sufficiently enable CSSC to exert a sufficient competitive constraint on the Parties post-Transaction.

¹¹⁷³ Replies to question 44.2 of Questionnaire Q8 to Customers.[DOC ID: 3241]

¹¹⁷⁴ Response to the SO, paragraphs 342.

¹¹⁷⁵ The Notifying Party’s reply to question 4 of RFI 30, Annex Q.4 Zvezl3.5, pages 1-5.

¹¹⁷⁶ Response to the Second Letter of Facts, paragraphs 106 and ff.

¹¹⁷⁷ The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.1.8, pages 1-2.

¹¹⁷⁸ The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.1.8, pages 1-2.

¹¹⁷⁹ The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.1.8, pages 1-2.

¹¹⁸⁰ The Notifying party’s reply to question 7 of RFI 45, Annex Q7.2.49, page 1.

¹¹⁸¹ The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.1.31, page 4.

¹¹⁸² The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.2.72, page 1.

¹¹⁸³ See, inter alia, Response to the Second Letter of Facts, paragraph 112.

- n) *CSSC does not have the ability to defeat a post-Transaction price increase.*
- (722) The Commission considers that CSSC is unlikely to have the ability to defeat a post-Transaction price increase for the following reasons.
- (723) First, as noted in **Section 8.3.4.2 (B) b)**, CSSC has only a limited LLNGC capacity (up to [...] vessels per year; and up to maximum [...] per year after capacity expansion). Contrary to what is argued by the Notifying Party,¹¹⁸⁴ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.¹¹⁸⁵ This also means that, as noted in **Sections 8.3.4.1 and 8.3.4.2**, CSSC (Hudong) would not be able to cover the current Parties' orderbook for the following years, even together with SHI. As mentioned in **Section 8.3.4.2 (B) b)**, CSSC (Hudong) is currently and in the foreseeable future the only shipyard of CSSC capable of building LLNGCs. Contrary to what is argued by the Notifying Party,¹¹⁸⁶ [...] confirmed that this statement is still valid and will still be valid until 2026 at the very least.¹¹⁸⁷
- (724) Second, given CSSC's lasting technical limitations, customers generally consider CSSC as a significantly inferior alternative, which in turn significantly undermines CSSC's ability to constrain the Parties' market position and associated conduct, including post-merger. As explained in **Section 8.3.4.2(B)(d)**, customers consider that CSSC (Hudong) builds LLNGCs of a lower quality than the Parties and SHI. In addition, quality is considered more important by customers than price (**Sections 8.3.2 and 8.3.4.2 (B) d)**) and customers would order from CSSC (Hudong) only under certain conditions and/or in specific circumstances).
- (725) Moreover, as explained in **Section 8.3.7.2 (B) g)** and **Section 8.3.9**, the Commission notes that post-Transaction, CSSC will not only lack the ability to defeat a price increase of the Parties but may well have the ability to follow a potential price increase of the Parties.
- o) *CSSC does not have the incentive to defeat a post-Transaction price increase.*
- (726) The Commission considers that CSSC is unlikely to have the incentive to react aggressively to defeat a post-Transaction price increase. In that respect, [...] confirmed that [...] could produce no more than [...] LLNGCs a year "*given [the need to maintain] an efficient allocation of capacity and product mix*".¹¹⁸⁸ Contrary to what argued by the Notifying Party,¹¹⁸⁹ the Commission considers that the validity (until 2026 at the very least) of this statement is confirmed by [...] confirmation that [...] could not produce more than [...] LLNGCs a year¹¹⁹⁰ Hence, CSSC appears to lack not only the ability but also the incentive to significantly increase its LLNGC production capacity in case of anticompetitive effects arising from the Transaction.
- (727) Moreover, as explained in **Section 8.3.7.2 (B) g)** and **Section 8.3.9**, the Commission notes that post-Transaction, CSSC will not only lack the incentive to defeat a price increase of the Parties but may well have the incentive to follow a potential price increase of the Parties.

¹¹⁸⁴ See, inter alia, the Notifying Party's Response to the First Letter of Facts, paragraph 101.
¹¹⁸⁵ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]
¹¹⁸⁶ See, inter alia, the Notifying Party's Response to the First Letter of Facts, paragraph 101.
¹¹⁸⁷ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]
¹¹⁸⁸ [...] reply to question 15 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]
¹¹⁸⁹ See, inter alia, the Notifying Party's Response to the First Letter of Facts, paragraph 101.
¹¹⁹⁰ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

(C) Conclusion

(728) In light of the above, and in particular in view of the fact that customers would only order from CSSC (Hudong) under specific circumstances, that CSSC (Hudong) is regarded by customers as delivering not to the same standards as Korean shipbuilders, CSSC (Hudong)'s lower capacity, and in view of the Parties' internal documents, the Commission considers that the competitive constraint exercised by CSSC (Hudong) is currently not sufficient,¹¹⁹¹ and would not be sufficient in the foreseeable future to counteract the likely negative effects of the Transaction in the LLNGC market and in the large FSRU segment.

(729) In light of the above, the Commission considers that CSSC will neither have the ability nor the incentive to exert a sufficient competitive constraint on the Parties post-Transaction to defeat a possible price increase post-Transaction by the merged entity in the LLNGC market and in the large FSRUs segment. This contributes to the finding that the Transaction results in the creation of a dominant position by the merged entity.

8.3.4.3. Japanese shipbuilders do not exert and will not exert post-Transaction a sufficient competitive constraint on the Parties

(730) In this Section, the Commission sets out its assessment of the alleged competitive constraint exercised pre and post-Transaction by Japanese shipbuilders. The Commission finds that the Japanese shipbuilders will neither have the ability nor the incentive to exert a meaningful competitive constraint on the Parties post-Transaction to defeat a possible price increase post-Transaction by the merged entity in the LLNGC market and in the large FSRUs segment. This contributes to the finding that the Transaction results in the creation of a dominant position.

(A) The Notifying Party's views

(731) In the Response to the Article 6(1)(c) decision, in its submission dated 26 May 2020,¹¹⁹² in its Response to the SO, in the Response to the First Letter of Facts¹¹⁹³ and in the Response to the Second Letter of Facts,¹¹⁹⁴ the Notifying Party submits that players active in LLNGCs such as MHI, KHI, Imabari and JMU, will still exercise post-Transaction significant competitive constraints on the Parties because they have a similar product offering (albeit not on the same scale of production). While the Parties have achieved a higher track record (i.e. number of orders) so far, several other players already constitute a viable alternative for customers, for the following reasons.

(732) First, the Notifying Party argues that shipbuilders do not need to have delivered a certain number of LNGCs to compete effectively¹¹⁹⁵: CSSC (Hudong) and JMU entered the market for LLNGCs without any prior track record. Furthermore, such a track record can increase significantly in a short period of time, given (i) the limited scope of the market (ii) its relative immaturity (the largest LNGCs have been

¹¹⁹¹ Even taking account of CSIC.

¹¹⁹² The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Sections 2(c) and 2(d).

¹¹⁹³ Response to the First Letter of Facts, paragraphs 167-174.

¹¹⁹⁴ Response to the Second Letter of Facts, paragraphs 302-303.

¹¹⁹⁵ Response to the Article 6(1)(c) decision, paragraphs 259-262.

increasingly used only as of 2006) and (iii) the fact that customers occasionally place orders for several LNGCs at once.¹¹⁹⁶

- (733) In any event, even if a track record were assumed to be relevant, according to the Notifying Party, several Japanese players have a sufficient track record in LLNGCs: KHI, MHI, Imabari.¹¹⁹⁷ The fact that the vessels built by these companies were delivered to the customer indicates according to the Notifying party that the vessels were built in accordance with the customer preferences and had not technical issues. The Notifying Party further argues that Japanese shipbuilders, although recently less active than SHI and CSSC in the LLNGC market and despite the fact they have kept their output low due to current market conditions, would continue to exert competitive constraint given they have traditionally had high quality and very strong track record.¹¹⁹⁸
- (734) Second, according to the Notifying Party, there cannot be lack of slots availability as customers have been able to obtain desired slots for LNGCs and there is over-capacity on the market. Likewise there is no objective evidence that Japanese shipbuilders are not as good as the three main Korean shipbuilders.¹¹⁹⁹ As regards delivery time, the Notifying Party argues that faster delivery time is not an important parameter of competition. In the Response to the First and Second Letter of Facts, the Notifying Party further argues that the Commission's claim that Japanese shipbuilders would have recently reduced their capacity would rely on very weak evidence as it also fails to address the relevance of MHI's withdrawal from the LLNGC market in light of MHI's joint venture with Imabari, MI-LNG.¹²⁰⁰ Moreover, according to the Notifying Party, the Commission would have wrongly assessed Japanese shipbuilders' capacity as low.¹²⁰¹ The Commission would have also failed to examine the question of how quickly and easily Japanese shipbuilders could expand capacity to re-enter the market in case of a price increase post-Transaction.¹²⁰²
- (735) Third, while Japanese shipbuilders MHI, KHI and JMU have mainly used non-membrane type tanks so far, they can build membrane LNGCs as they have shipyards licensed by [...].¹²⁰³ Four shipbuilders from Japan (Imabari, JMU, MHI and Mitsui) have built vessels using the membrane tank. The Japanese players will according to the Notifying Party use the membrane tank more if customers' demand would move in this direction. On the other hand, as also maintained in the Response to the First Letter of Facts, the Commission would have ignored the positive customer market feedback on the advantages of MOSS as well as on the fact that MOSS could become competitive again.¹²⁰⁴ While some customers will likely continue to purchase LNGCs with a MOSS tank, Japanese shipbuilders will have a

¹¹⁹⁶ Response to the Article 6(1)(c) decision, paragraphs 259-262.

¹¹⁹⁷ Response to the Article 6(1)(c) decision, paragraphs 263-273.

¹¹⁹⁸ Response to the First Letter of Facts, paragraph 167.

¹¹⁹⁹ Response to the Article 6(1)(c) decision, paragraph 280. Response to the SO, paragraph 423.

¹²⁰⁰ Response to the First Letter of Facts, paragraph 171. See also Response to the Second Letter of Facts, paragraph 303.

¹²⁰¹ Response to the First Letter of Facts, paragraph 172. See also Response to the Second Letter of Facts, paragraph 303.

¹²⁰² Response to the First Letter of Facts, paragraphs 173-174. See also the Response to the Second Letter of Facts, paragraph 303.

¹²⁰³ Response to the Article 6(1)(c) decision, paragraphs 298-301. See also The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 2c.

¹²⁰⁴ Response to the First Letter of Facts, paragraphs 168-170.

unique advantage of other shipbuilders in this regard. According to the Notifying Party, customers which currently buy membrane-type LLNGCs would consider ordering Moss-type LLNGCs if that becomes competitive.¹²⁰⁵

(B) The Commission's assessment

(736) The Commission investigated whether and, if so, to what extent Japanese shipbuilders which have built (conventional) LLNGCs¹²⁰⁶, namely Mitsubishi Heavy Industries Co Ltd (MHI), Kawasaki Heavy Industries Corp (KHI), Imabari Shipbuilding Co Ltd (Imabari) and Japan Marine United Corporation (JMU), would be able to exert a competitive constraint on the merged entity post-Transaction. The Commission finds that all these shipbuilders currently do not constrain the Parties to a meaningful extent and that none of the Japanese shipbuilders will be able to exert a meaningful competitive constraint on the Parties post-Transaction.

(737) At the outset, the Commission notes that it has already addressed the Japanese shipbuilders' limited market shares (see **Section 8.3.1**) and low activity in terms of patented technologies (see **Section 8.3.3**). This decision will further address the fact that Japanese shipbuilders are unlikely to (re-)enter the market in a timely and sufficient manner (see **Section 8.3.8**).

(738) According to [...], historically, Japanese shipyards had a strong position on the market, as they had been favoured for many LNGC construction projects due in part to the fact that Japan had become the largest importer of LNG. However, Japanese shipyards have not invested in membrane (i.e. [...]) cargo tankers design but have focused on non-membrane (i.e. MOSS) design in the past for historical reasons. Indeed, as [...] explained: *“from the late 1970s until the early 1990s, [...] both failed to have their technologies installed in any new vessel. This was due in part to the fact that Japan had become the largest importer of LNG during this time, which led to Japanese shipyards being favoured for many LNG carrier construction projects. Due to historical reasons, the Japanese shipyards had invested heavily in using a “Type B” independent tank system developed by Moss Maritime (“MOSS”), a Norwegian subsidiary of the Italian Eni-Saipem group, and were not interested in devoting resources to invest in building carriers using membrane technology”*.¹²⁰⁷

(739) The Korean shipyards chose GTT's membrane tank technology when they entered the LLNGC market (only HHI had an exclusive license for the MOSS technology). According to [...], MOSS technology requires large initial investments by shipbuilders and is therefore not attractive to shipbuilders: *“Nevertheless, [...] continued to develop their NO and Mark technologies in hope of breaking through the MOSS monopoly maintained by the Japanese shipyards. At the same time, Korean shipyards, which were building their reputations for quality in other shipbuilding sectors, were seeking an avenue to enter the LNG carrier construction sector without the use of MOSS technology (the MOSS technology required heavy initial investment in the shipbuilder's infrastructure, such as explained below in paragraphs (16) and (49). In Korea, only Hyundai Heavy Industries (“HHI”) had an exclusive license for the MOSS technology.”*¹²⁰⁸

¹²⁰⁵ Response to the SO, paragraph 423. See also Response to the First Letter of Facts, paragraph 170.

¹²⁰⁶ None of these shipbuilders has received any order for the construction of a large FSRU or of an Arc7 LLNGC. See the Notifying Party's reply to RFI 34, Annex Q.1. See also the Notifying Party's reply to question 13 of RFI 67, Annex Q13 and reply to question 16 of RFI 67, Annex Q16.

¹²⁰⁷ [...] observations on the Commission's SO dated 10 July 2020, paragraph 9. [DOC ID: 3859]

¹²⁰⁸ [...] observations on the Commission's SO dated 10 July 2020, paragraph 10. [DOC ID: 3859]

- (740) According to [...], other technologies (such as MOSS' non-membrane and [...]'s SPB technology) are also costly to build and not attractive for both shipbuilders and shipowners: *“Thirdly, other technologies may be more costly to build and/or implement (e.g. SPB technology developed by Ishikawajima-Harima Heavy Industries Co., Ltd has fallen out of competition due to their higher costs). Non-membrane MOSS technology (MOSS Maritime’s Spherical Type B technology, HHI being the only Korean shipyard to use it) is also more costly due to, inter alia, the need for massive infrastructure Capex for shipyards.”*¹²⁰⁹ In turn, both construction costs and operating service expenses are lower for GTT technologies than for the MOSS technology: *“In fact, both construction costs and operating service expenses (including [f]uel, crew, insurance, maintenance and fees paid to either the Panama or Suez Canal tolls) are lower for GTT technologies compared to the MOSS technology.”*¹²¹⁰ Moreover, GTT’s technologies are more competitive than any other CCS technologies, including MOSS: *“Economic studies have proven that GTT’s technologies are more competitive than any other CCS technologies, including MOSS, bear a clear relationship with the economic value of its technologies and that its price is therefore not excessive.”*¹²¹¹
- (741) Using GTT’s membrane tank technology, Korean shipbuilders were able to surpass Japanese shipbuilders by winning tenders: *“The partnership between GTT and Korean shipyards allowed the latter to surpass the Japanese market leaders, especially since Korean shipyards, as GTT licensees, won in [...] a bid to construct approximately [...] LNG carriers implementing GTT technology for [...] and [...]. This award is clearly a landmark in the evolution of the Korean shipbuilding industry as it corresponds to the emergence of the Korean shipyards as worldwide leaders of the industry, and more specifically in the construction of LLNGCs.”*¹²¹² According to [...], the success of a specific CCS technology such as GTT’s membrane tank technology is also due to the investment of the shipyards: *“In any event, it is important to bear in mind that the origin of the success of a specific CCS technology is also due to the investment of the shipyards that will promote and convince Shipowners to acquire a LLNGC vessel with a new (or updated) CCS technology. Without such promotion, a CCS can quickly run out of the market as illustrated by the difficult positions of [...] in the late 1970s until the early 1990s due to the preference of the Japanese shipyards for the MOSS technology and then Gaztransport and Technigaz recovery thanks to the push made by the Korean shipyards for GTT’s technologies (see above paragraphs (9) to (12))”*¹²¹³
- (742) Therefore, due to heavy investments in R&D such as cargo containment system technology improvements on safety, performance and cost (see also **Section 8.3.3**), Korean shipbuilders have overtaken the Japanese shipbuilders. According to [...]: *“GTT’s licensed technologies are considered by Shipowners as state-of-the-art – GTT helped Korean shipyards to supplant their Japanese rivals through their constant heavy investments in R&D such as CCS technology improvements on safety, performance and cost.”*¹²¹⁴

¹²⁰⁹ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 16. [DOC ID: 3859]

¹²¹⁰ [...] observations on the Commission’s SO dated 10 July 2020, footnote 59. [DOC ID: 3859]

¹²¹¹ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 49. [DOC ID: 3859]

¹²¹² [...] observations on the Commission’s SO dated 10 July 2020, paragraph 12. [DOC ID: 3859]

¹²¹³ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 24. [DOC ID: 3859]

¹²¹⁴ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 16. [DOC ID: 3859]

- (743) From the customer’s perspective, MOSS tanks are inferior to membrane (GTT) tanks, notably because they have an 8% lower loading capacity than membrane vessels and because the boil-off-rate of GTT’s technology has improved. According to [...]: “.... Secondly, regarding performances, lower CCS capacity was also a reason for Shipowners to dismiss previous technologies and favour GTT’s technologies. For instance, spherical design of the MOSS tanks, or cylindrical Type C tanks, became less competitive than GTT’s membrane technologies due to void spaces, which means that when comparing two ships of the same size, membrane vessels have an 8% higher loading capacity; this volumetric advantage for GTT’s membrane has become even more significant as the market was asking for bigger vessels. Shipowners also look at additional CCS features, such as the BOR for which GTT’s technologies, and the constant improvement of their performances, are again at the forefront.”¹²¹⁵
- (744) According to [...], while non-membrane (MOSS) technology may have some advantages, e.g., “[t]he spherical independent tank might protect cargo in a vessel collision”,¹²¹⁶ it also has numerous disadvantages, as follows: “in normal use, MOSS LNGCs are more affected by weather, poor navigation visibility and less manoeuvrability and accrue higher canal charges (40% higher gross tonnage as compared to membrane ships) and need to use more fuel (affecting chartering demand). Moss ships have smaller cargo capacity. Vessel size can be increased, but the beam restriction of the expanded Panama Canal locks which “accept vessels up to 49-meter beam and possibly up to 51-meter beam ... currently excludes passage for some of the 177,000 cbm to 180,000 cbm Moss vessels” (footnotes omitted).¹²¹⁷ As a result, [...] considers that: “in the late-1990s-2000s, Moss-type LLNGCs gave way to greater popularity for membrane-type (NO06 or Mark III) LLNGCs, which are generally preferred for: better fuel efficiency, more LNG cargo capacity, lower canal charges, unrestricted navigation visibility and less high-wind area and greater terminal compatibility. Additionally, cool down preparation to avoid cold shock damage to the tank by LNG at -162 C, takes 10 ~12 hours for a membrane-type vessel but 20 hours for a Moss LNGC without a heel.”¹²¹⁸
- (745) For the above reasons and their comparatively lower efficiency, Japanese shipbuilders’ non-membrane CCS technologies are not expected to become (again) a credible option for shipowners in the near future, after having been in practice driven out of the market. According to [...]: “Japanese shipbuilders’ non-membrane CCS technologies are not expected to become a credible option for Shipowners since they have been driven out of the market because of their low efficiency.”¹²¹⁹
- (746) It is also unlikely that other technologies than membrane (GTT), including MOSS or SPB, will be favoured by a significant portion of shipowners in the near future as shipowners are strongly incentivised to prefer the technology presenting a successful track-record. As [...] indicated: “once the technology has a successful track-record, then the Shipowners will be incentivised to request the same technology.”¹²²⁰
- (747) Therefore, other CCS technologies (than GTT’s membrane technology) almost exited the market. In this regard, [...] explained: “The Japanese example is topical.

¹²¹⁵ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 16. [DOC ID: 3859]

¹²¹⁶ [...] observations on the SO, page 4. [DOC ID: 3851]

¹²¹⁷ [...] observations on the SO, page 4. [DOC ID: 3851]

¹²¹⁸ [...] observations on the SO, page 4 and 5. [DOC ID: 3851]

¹²¹⁹ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 72. [DOC ID: 3859]

¹²²⁰ [...] observations on the Commission’s SO dated 10 July 2020, paragraph 25. [DOC ID: 3859]

As explained by the Commission [...], MOSS tanks used to be preferred by customers but have been replaced by GTT's technologies. Following GTT's high investments in R&D and its ability to convince the CCS industry that its technology was more efficient, other technologies almost exited the market."¹²²¹

(748) In view of the above, the Japanese shipbuilders will not be able to exert a meaningful competitive constraint on the Parties post-Transaction. According to [...]: "[...] agrees with the Commission's finding that LLNGC suppliers do not see Chinese or Japanese shipyards as credible buyers of LLNGC equipment. Indeed, these shipyards cannot credibly replace the Korean shipyards in the suppliers' client portfolio as, for instance, they often do not build the same type of vessels, use different CCS technologies and are seen by the Shipowners as using lower quality standards, etc."¹²²²

(749) More specifically, the Commission notes that MHI's and KHI's last orders were in [...], JMU's in [...] and Imabari's in [...] as stated in **Section 8.3.1**, and none of [...]. Furthermore, as stated in **Section 8.3.2**, Japanese shipbuilders that had been active in LLNGCs stopped competing in tenders around [...], with only KHI being contacted [...]. At the level of individual shipbuilders, the Commission notes, in addition to the below, that previously active Japanese suppliers are reducing their production capacity through workforce cuts.¹²²³

a) *MHI*

(750) In this Section and in light of the above and of the below, the Commission sets out, in more detail, its assessment of the alleged competitive constraint that is currently exerted and that will be exerted by MHI on the Parties post-Transaction.

(751) The Commission notes that Mitsubishi Heavy Industries Co Ltd (MHI), although [...]¹²²⁴, [...] it is no longer competitive in the market for LLNGCs at the current prices and [...] at the moment.¹²²⁵ [...] it is "*in a difficult situation to obtain orders in the global LNG shipbuilding market*".¹²²⁶ As further set out in **Section 8.3.8.3 (C) x**), MHI received its last order of membrane conventional LLNGC in [...] and delivered its last membrane vessel in [...]¹²²⁷ and has decided to sell its Koyagi plant, which is the facility in which MHI was able to build conventional LLNGCs.¹²²⁸ [...]¹²²⁹[...] (see in this regard, **Section 8.3.4.3 (B) b) below**). As noted by [...]: "*Mitsubishi Heavy Industries (MHI) President Seiji Izumisawa stated on 6 February 2020 in Tokyo that MHI would withdraw from building gas carriers. Further, MHI is in talks to sell off the Koyagi shipyard, the facility where it built LNGCs and VLGCs, to Oshima—maker of simple bulk carriers with no LNGC experience. Workforce at MHI Nagasaki shrank from 1,089 in April 2015 to 721 workers by April 2019.*"¹²³⁰ (footnotes omitted).

¹²²¹ [...] observations on the Commission's SO dated 10 July 2020, paragraph 92. [DOC ID: 3859]

¹²²² [...] observations on the Commission's SO dated 10 July 2020, paragraph 42. [DOC ID: 3859]

¹²²³ [...] observations on the SO, page 4. [DOC ID: 3851]

¹²²⁴ Minutes of the conference call with [...] dated 26 July 2019, paragraph 6. [DOC ID: 296]

¹²²⁵ Minutes of the conference call with [...] dated 13 February 2020, paragraph 4. [DOC ID: 2173] See also the Notifying Party's reply to question 16 of RFI 67, Annex Q16.

¹²²⁶ E-mail from [...] dated 02 March 2020 at 07:10. [DOC ID: 2170]

¹²²⁷ The Notifying Party's reply to questions 16 and 17 of RFI 67, Annexes Q16 and Q17.

¹²²⁸ [...] would no longer build LLNGCs [...] but will focus on engineering and production outsourcing. See E-mail from [...] dated 02 March 2020 at 07:10. [DOC ID: 2170]

¹²²⁹ [...].

¹²³⁰ [...] observations on the SO, page 4. [DOC ID: 3851]

(752) The Commission therefore considers that MHI does not constrain the Parties to a meaningful extent and it will not be able to exert a meaningful competitive constraint on the Parties post-Transaction.

b) *KHI*

(753) In this Subsection and in light of the above and of the below, the Commission sets out, in more detail, its assessment of the alleged competitive constraint that is currently exerted and that will be exerted by KHI on the Parties post-Transaction.

(754) The Commission notes that Kawasaki Heavy Industries Corp (KHI) has built LLNGCs of the [...] type and received its last order in [...].¹²³¹ [...],¹²³² [...].¹²³³ [...] stated that “*that one reason why it invited Japanese shipbuilders to bid is to increase competition*”.¹²³⁴ [...] was the only Japanese shipbuilder to submit a bid to [...] (given that [...] and [...])¹²³⁵ decided not to bid).¹²³⁶ However, according to a press report, [...] withdrew from the bidding process before [...] decision.¹²³⁷ This shows that, contrary to what is argued by the Notifying Party in its Response to the Second Letter of Facts,¹²³⁸ the internal document of [...] bid, no Japanese shipbuilder is currently or will be in the foreseeable future capable of exerting a competitive constraint on the Parties.

(755) The Commission notes that according to [...]: “*The Kawasaki Heavy Industries after the Fiscal Year 2019 results, the company planned to reduce about ... of its domestic business for merchant shipping. ..., KHI has already closed one of the two docks at Sakaiide, converted the space to non-shipbuilding business ... and plans to cut ... employees ... in 2020. Further, even if KHI could somehow transfer its LLNGCs experience to its joint ventures in China, we must note first that its DACKS and NACKS joint ventures in China have no record of building VLGCs much less LLNGCs. Second, the know-how KHI has accrued is for building “non-membrane type” (Moss-type) LLNGCs.*”¹²³⁹

(756) The Commission therefore considers that KHI does not constrain the Parties to a meaningful extent and it will not be able to exert a meaningful competitive constraint on the Parties post-Transaction.

c) *JMU*

(757) In this Section and in light of the above and of the below, the Commission sets out, in more detail, its assessment of the alleged competitive constraint that is currently exerted and that will be exerted by JMU on the Parties post-Transaction.

¹²³¹ The Notifying Party’s reply to questions 16 and 17 of RFI 67, Annexes Q16 and Q17.

¹²³² [...]. Therefore, contrary to what argued by the Notifying Party at paragraph 171 of the Response to the First Letter of Facts, the Commission has not failed to address the relevance of [...]’s withdrawal in light of [...], which, as explained in **Section 8.3.8.3 (C) xxvii**) is not a likely, timely and sufficient entrant in the LLNGC market.

¹²³³ Minutes of the conference call with [...] dated 25 February 2020, paragraph 3. [DOC ID: 2350]

¹²³⁴ Minutes of the conference call with [...] dated 25 February 2020, paragraph 11. [DOC ID: 2350]

¹²³⁵ [...]. Therefore, contrary to what argued by the Notifying Party at paragraph 171 of the Response to the First Letter of Facts, the Commission has not failed to address the relevance of [...]’s withdrawal in light of [...], which, as explained in **Section 8.3.8.3 (C) xxvii**) is not a likely, timely and sufficient entrant in the LLNGC market.

¹²³⁶ Minutes of the conference call with [...] dated 25 February 2020, paragraph 3. [DOC ID: 2350]

¹²³⁷ [...].

¹²³⁸ Response to the Second Letter of Facts, paragraph 302,

¹²³⁹ [...] observations on the SO, page 4. [DOC ID: 3851]

(758) The Commission notes that Japan Marine United Corporation (JMU), as will be further explained in **Section 8.3.8.3 (B) a)**, uses a [...] cargo tank containment system. [...] has stated that [...] does not build regularly LNGCs. [...].¹²⁴⁰ [...] has stated that “*these orders were not profitable for JMU and JMU is now very careful before taking new LNGC orders.*”¹²⁴¹ [...] notes: “*JMU—itself a byproduct of a merger of two leading Japanese shipbuilders, Universal and IHI Marine United—is undergoing what the Japanese press call “a bailout of JMU in all but name” [...] by capital tie-up with Imabari, an arrangement which excludes LNGCs as Imabari is in an arrangement with MHI (the MI-LNG).*”¹²⁴² (footnotes omitted)

(759) The Commission notes that In January 2021, JMU and Imabari established a joint venture called Nihon. The Commission notes that, based on public information, Nihon is not active in and has no intention to enter the LLNGC market.¹²⁴³

(760) The Commission therefore considers that JMU does not constrain the Parties to a meaningful extent and it will not be able to exert a meaningful competitive constraint on the Parties post-Transaction.

d) Imabari

(761) In this Section and in light of the above and of the below, the Commission sets out, in more detail, its assessment of the alleged competitive constraint that is currently exerted and that will be exerted by Imabari on the Parties post-Transaction.

(762) The Commission notes that Imabari Shipbuilding Co Ltd (Imabari), which uses a [...] containment system, received its last order in [...].¹²⁴⁴ [...].¹²⁴⁵ [...].¹²⁴⁶ [...].¹²⁴⁷

(763) The Commission therefore considers that Imabari does not constrain the Parties to a meaningful extent and it will not be able to exert a meaningful competitive constraint on the Parties post-Transaction.

e) Other considerations

(764) As explained in the below paragraphs, the Commission’s market investigation results indicate that overall Japanese shipbuilders do not exert a meaningful competitive constraint over the Parties and that, post-Transaction, the situation is unlikely to change for a number of reasons.

(765) First, the majority of customers that responded to the market investigation indicated that they do not systematically consider Japanese shipbuilders when placing an order for LNGCs, mainly due to the fact that Japanese shipbuilders tend to be up to [...] more expensive than Koreans and with long delivery times and they use a different type of LNG cargo tank technology, *i.e.* non-membrane LNG gas containment system.¹²⁴⁸ During the market investigation, a majority of customers stated that they have not contacted, either formally or informally, any Japanese shipbuilders when looking to order conventional LLNGCs in the 2014-2019 period.¹²⁴⁹

¹²⁴⁰ The Notifying Party’s reply to questions 16 and 17 of RFI 67, Annexes Q16 and Q17.

¹²⁴¹ Minutes of the conference call with [...] dated 13 February 2020, paragraph 7. [DOC ID: 2081]

¹²⁴² [...] observations on the SO, page 4. [DOC ID: 3851]

¹²⁴³ Commission’s screenshot from Nihon’s website. [DOC ID: 5899]

¹²⁴⁴ The Notifying Party’s reply to questions 16 of RFI 67, Annexe Q16.

¹²⁴⁵ [...].

¹²⁴⁶ [...].

¹²⁴⁷ [...].

¹²⁴⁸ Replies to question 32.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁴⁹ Replies to question 49 of Questionnaire Q8 to Customers. [DOC ID: 3241]

- (766) As shown by the data submitted by the Notifying Party,¹²⁵⁰ MHI, KHI and JMU (the biggest Japanese shipbuilders of LLNGCs in terms of market shares) use [...] cargo tank technology while Imabari uses [...] gas containment technology. As stated by a customer Japanese shipyards have longer experience in MOSS type LNGCs than Korean shipbuilders where only HHI has the licence and can build this type of vessels.¹²⁵¹ However, a majority of customers which replied during the investigation stated that they do not expect they will purchase any non-membrane cargo tank LNGCs in the future.¹²⁵² In this regard a customer noted that “*it systematically invites Kawasaki and MHI to tenders for large conventional LNG carriers but only if its customer requires non-membrane conventional LNG carriers*”.¹²⁵³
- (767) Non-membrane cargo tank technology¹²⁵⁴ (although it also has certain advantages), appears to be generally less attractive for customers. As a customer stated: “*membrane is the commercially and operationally accepted system today*”.¹²⁵⁵ Another customer stated: “*Membrane tanks are tested and prove and provide the best alternative for conventional LNG carriers in regards to optimizing utilization of the hull, fuel consumption, canal fees and access*”.¹²⁵⁶
- (768) The membrane and the non-membrane technologies have each specific advantages and disadvantages for customers.¹²⁵⁷ As to membrane technologies, a customer stated that “*Currently membrane technology provides a more efficient transportation method that enjoys wider compatibility and lower operating expenses.*”¹²⁵⁸ Customers also mentioned among others less port charges and less channel transit tariffs, and smaller windage area during navigation.¹²⁵⁹
- (769) As to non-membrane technologies (see **Section 8.3.4.3 (B)**), for example, a customer explained that vessels using spherical MOSS design cargo tanks “*are charged a higher Suez canal toll compared to an LNG vessel using membrane cargo tanks of the same cargo size*”.¹²⁶⁰ The same customer stated that “*Worldwide, trading Moss type LNG carriers is more expensive than trading membrane cargo tank vessels.*”¹²⁶¹ Another customer considered that “*the Moss type is too heavy and too small on cbm capacity*”.¹²⁶² A customer stated that “[n]on-membrane cargo tank containment

¹²⁵⁰ The Notifying Party’s reply to RFI 21. See also the Notifying Party’s reply to question 23 of RFI 67, Annex Q23.

¹²⁵¹ Replies to question 38.1 of Questionnaire Q3 to Customers. [DOC ID: 3244]. As explained by the Notifying Party in its reply to question 2 of the second follow up to the Commission’s RFI 37, [...].

¹²⁵² Replies to question 54 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁵³ Minutes of the conference call with [...] dated 18 February 2020, paragraph 7. [DOC ID: 2839]

¹²⁵⁴ The Commission remarks that the main type of non-membrane cargo tank technology is MOSS type. [...]. As explained in this Section and in **Section 8.3.8.3 (B)**, [...] experience with LLNGCs building was not successful and this is unlikely to change in the future.

¹²⁵⁵ Replies to question 54 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁵⁶ Replies to question 54.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁵⁷ On the advantages of non-membrane cargo tank technologies, see replies to question 54.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]. Contrary to what argued by the Notifying Party in paragraphs 433-438 of the Response to the SO and paragraphs 168-170 of the Response to the First Letter of Facts, the Commission considers that this feedback does not change its assessment on the fact that Japanese shipbuilders do not exert a meaningful competitive constraint on the Parties and that this is unlikely to change in the foreseeable future as it needs to be read in context of **Section 8.3.4.3** and **8.3.8**.

¹²⁵⁸ Replies to question 54.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁵⁹ Replies to question 54.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁶⁰ Replies to question 33 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁶¹ Replies to question 54.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁶² Replies to question 54.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

system is less competitive and less efficient in terms of cargo tank capacity.”¹²⁶³ A customer stated: “*Japanese built vessels are not as competitive as the Koreans for the following reasons: they are more expensive (this is also why, for example, it has never considered ordering membrane vessels from a Japanese shipbuilder) and they use non-membrane cargo tank containment system technology, which is less preferred by SM’s customers for both cargo capacity reasons and the fact that are charged higher tolls at Suez canal.*”¹²⁶⁴ The advantages of non-membrane gas containment systems appear to be its robustness against sloshing and the absence of limitations on the tank level (allowing flexible operation such as multiple discharging ports).¹²⁶⁵ A customer stated that the choice of the shipbuilder is often affected by the preference of the final customers and that “*Japanese utility companies have tendency to prefer Japanese built vessels, which are mainly MOSS type because they are more robust than membrane type.*”¹²⁶⁶ Another customer explained that the reason why non-membrane LLNGCs are built by Japanese shipbuilders almost exclusively for Japanese customers is that “*Japanese customers usually do not need [the] same big cargo tank capacity and Japanese LNG terminals are usually not big enough to accommodate such larger vessels*” in addition to the “*Moss type tank design [having] also distinct advantages such as solid sloshing strength*”¹²⁶⁷

- (770) In this context, several customers explained that they would consider buying from Japanese shipbuilders only if, for example, the LNG cargo tank technology used by Japanese were different.¹²⁶⁸ For example, a customer stated that it would consider ordering from Japanese shipbuilders if they decided to “*switch from MOSS to membrane containment system and [consider a] price reduction*”.¹²⁶⁹ In confirmation of this, another customer explained that they would consider Japanese shipbuilders “*in case MOSS type vessels would increase in cargo capacity at the region of about 180,000m³ subject to price – delivery time and subject to long time charter*”¹²⁷⁰ yet another customer argued that only “*[s]hould the Japanese change to membrane tankers and be as competitive as the three big Koreans*” it may consider ordering from a Japanese shipbuilder.¹²⁷¹ Another customer stated that it would require technical innovation allowing to load the same quantity of LNG as with the membrane type.¹²⁷² Another customer stated that it is unlikely that would order from Japan¹²⁷³ as its employees’ experience is that the specifications the company has on its vessels (including in relation to engine spec; cargo handling system) “*is not available for the same pricing*”. This customer conclude that “*[i]n essence, the same quality can be obtained from the three big Korean shipbuilders for less money.*”¹²⁷⁴
- (771) Second, the majority of customers that expressed a meaningful opinion explained during the market investigation that they would either not consider ordering (L)LLNGCs from Japanese shipbuilders or that they would do so in the next five years only in some specific circumstances, such as if the price of their vessels were lower,

¹²⁶³ Minutes of the conference call with [...] dated 25 February 2020, paragraph 11. [DOC ID: 2350]

¹²⁶⁴ Minutes of the conference call with [...] dated 3 March 2020, paragraph 7. [DOC ID: 2490]

¹²⁶⁵ Replies to question 54.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁶⁶ Minutes of the conference call with [...] dated 27 February 2020, paragraph 4. [DOC ID: 2222]

¹²⁶⁷ Minutes of the conference call with [...] dated 17 February 2020, paragraph 5. [DOC ID: 2958]

¹²⁶⁸ Replies to question 35 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁶⁹ Replies to question 35 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁷⁰ Replies to question 35 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁷¹ Minutes of the conference call with [...] dated 18 February 2020, paragraph 7. [DOC ID: 2839]

¹²⁷² Replies to question 54.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁷³ Minutes of the conference call with [...] dated 25 February 2020, paragraph 10. [DOC ID: 2922]

¹²⁷⁴ Minutes of the conference call with [...] dated 25 February 2020, paragraph 9. [DOC ID: 2922]

if they could offer a better delivery rate,¹²⁷⁵ if they would meet technical requirements (including regarding the membrane containment system).¹²⁷⁶ Several customers also mentioned that the choice to purchase a non-membrane gas containment system would depend on the specific project or charterer's request at hand, and for example Japanese customers (such as a utility company) preferred the non-membrane (MOSS) type.¹²⁷⁷

- (772) Moreover, contrary to what is argued by the Notifying Party, the Commission notes that the market investigation does not support the Notifying Party's argument that [40-50]% of customers would entrust a Japanese shipbuilder with building a membrane LLNGC.¹²⁷⁸ Indeed, the Commission asked customers whether they would consider purchasing an LLNGC using GTT cargo tank technology from a shipbuilder that has a GTT licence but where that shipbuilder has previously built only or mainly an LLNGC using a different LNG cargo tank technology (e.g. a Japanese shipbuilder using only or mainly non-membrane cargo tank technology holding a GTT licence). Of the [...] customers that provided a meaningful reply, [...] responded either "yes" but subject to conditions like rigorous vetting or audit or the shipbuilder investing in proper capacity and quality ([...] out of the [...] customers) or "no" due to the need of a proper track record and relevant skills ([...] out of the [...] customers) or extreme doubts ([...] out of the [...] customers).¹²⁷⁹
- (773) Third, the majority of customers that responded to the market investigation indicated that they have never ordered LNGCs from a Japanese shipbuilder¹²⁸⁰, although of those which have never ordered an LNGC from Japanese shipbuilders, the majority stated that they have contacted them for a price quote.¹²⁸¹
- (774) Fourth, the market investigation results indicated that Korean shipbuilders do not benchmark their prices against Japanese shipbuilders. In this context, the majority of customers that responded to the market investigation indicated that they have not experienced a situation in which, during negotiations for the order of LNGCs, Korean shipbuilders improved their offer to match an offer made by Japanese shipbuilders in terms of price or other commercial conditions or vessel specifications.¹²⁸² A customer stated that "[...] *our experience is rather reverse. Japanese shipbuilders are generally not competitive on price thus trying to make their price closer to Korean shipbuilders*".¹²⁸³ The market investigation confirmed that Japanese prices tend to be higher.¹²⁸⁴ In this regard even if the Commission accepted (quod non) that Korean shipbuilders benchmarked their prices against Japanese shipbuilders or that prices of Japanese-built vessels were not significantly higher than Korean-built ones, the Commission notes, as explained in **Section 8.3.2.2 (A)** and **Section 8.3.9**, that while price plays an important role,

¹²⁷⁵ Replies to question 35 of Questionnaire Q3 to Customers. [DOC ID: 3236] Replies to question 51 of Questionnaire Q8 to Customers. [DOC ID: 3241] Replies to question 51.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁷⁶ Replies to question 51.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁷⁷ Replies to question 54.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁷⁸ Response to the SO, paragraph 440.

¹²⁷⁹ Replies to questions 55 and 55.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹²⁸⁰ Replies to question 34 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁸¹ Replies to question 34.2 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁸² Replies to question 36 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁸³ Replies to question 36 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁸⁴ Replies to question 56 of Questionnaire Q8 to Customers. [DOC ID: 3241]. See also Minutes of the conference call with [...] dated 3 March 2020, paragraph 7. [DOC ID: 2490]

customers do not systematically select the cheapest offer as they give more weight to other criteria such as track record, technical specifications and technologies and delivery time and that, in this context and as explained above, non-membrane cargo tank technology is less attractive to customers.

- (775) Fifth, if, on the one hand, the majority of customers that responded to the market investigation indicated that there is no particular type or size of ship they would not entrust Japanese shipbuilders to build,¹²⁸⁵ on the other hand, several customers consider that Japanese shipbuilders are not as competitive as the Koreans due to their limited flexibility in terms of specification or technology innovation. In this context, a customer stated, that “*Japanese shipbuilders are very much focussed on domestic demand. They are still good at steam turbine, MOSS type vessels, not interested in newly designed membrane carriers or ice-class carriers.*”¹²⁸⁶ Another customer stated that “*we think the Japanese could build all these kinds of vessels, but at present they are unlikely to be competitive with the Korean shipyards*”.¹²⁸⁷
- (776) The above considerations appear to be also confirmed by the fact that, when asked to compare Japanese shipbuilders to Korean shipbuilders with respect to conventional LLNGCs, the majority of customers that expressed an opinion in the market investigation indicated that Japanese shipbuilders are worse than Korean shipbuilders under several criteria, i.e. price, slots availability and flexibility in specifications.¹²⁸⁸ As to price, a customer stated that Japanese conventional LLNGCs shipbuilders are not as competitive as the Korean shipbuilders as “*they are more expensive.*”¹²⁸⁹ Another customer concurred, stating that “*even though they do have the experience needed to successfully build conventional LNG carriers, they appear to be more expensive.*”¹²⁹⁰ Another customer which has contacted Japanese shipbuilders for non-membrane conventional LLNGCs, noted that “*Japanese built vessels are not as competitive as the Koreans for the following reasons: they are more expensive (this is also why, for example, it has never considered ordering membrane vessels from a Japanese shipbuilder) and they use non-membrane cargo tank containment system technology*”.¹²⁹¹
- (777) As to capacity, a customer stated that while Japanese utility companies prefer Japanese vessels of the MOSS-type, European customers prefer Korean shipbuilders such as HHIH or DSME which have “*much more capacity*”¹²⁹² than the Japanese shipbuilders “*which is an advantage when large orders are placed and can be concentrated in with the same shipbuilder.*”¹²⁹³ Another customer shared the view and stated that “*it has never ordered LNG carriers from [Japanese shipbuilders] as they have limited building capacity.*”¹²⁹⁴ Further evidence of the Japanese shipbuilders insufficient production capacity has been provided by [...]: “*Last, even if the Moss type of LLNGCs were favored, there would still need to be high levels of LLNGC and VLGC production capacity to exert competitive constraints. Even before the capacity reductions at Japanese shipyards like MHI enlisted above, LNG: Fuel*

¹²⁸⁵ Replies to question 37 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁸⁶ Replies to question 37 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁸⁷ Replies to question 37 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹²⁸⁸ Replies to question 38 of Questionnaire Q3 to Customers. [DOC ID: 3244]

¹²⁸⁹ Minutes of the conference call with [...] dated 3 March 2020, paragraph 7. [DOC ID: 2490]

¹²⁹⁰ Minutes of the conference call with [...] dated 17 February 2020, paragraph 5. [DOC ID: 2958]

¹²⁹¹ Minutes of the conference call with [...] dated 3 March 2020, paragraph 7. [DOC ID: 2490]

¹²⁹² Minutes of the conference call with [...] dated 27 February 2020, paragraph 4. [DOC ID: 2222]

¹²⁹³ Minutes of the conference call with [...] dated 27 February 2020, paragraph 4. [DOC ID: 2222]

¹²⁹⁴ Minutes of the conference call with [...] dated 17 February 2020, paragraph 5. [DOC ID: 2609]

for a Changing World, 2nd edition (Michael Tusianai and Gordon Shearer, 2016 September) analyzed that Mitsubishi could build at most only [...] LLNGCs per year and Kawasaki Heavy Industries a maximum of only [...] LLNGCs per year in 2016. This is a far cry from the [...] LLNGCs a year capacity of the Korean Big Three. Capacity may have been further reduced since that 2016 estimate. Total workforce employed by member companies of the Shipbuilders Association of Japan (which includes: Imabari, JMU, Kawasaki HI, Mitsubishi HI, Mitsui and Namura) has fallen to [...] workers (third column from the right of table below) total, including subcontracted workers and white collar workers (but excluding non-shipbuilding employment). Thus, it would appear that the Japanese shipbuilders would not have the scale or type of shipbuilding capacity in LLNGCs needed to exert credible competitive constraints on the post-transaction merged entity. Indeed ... have indicated that in general, the “whole shipbuilding industry in Japan is facing crisis. On average, in 2019, orderbook at year-end hit its lowest in the last 10 years... can only survive [...] years if there are not sufficient new orders.”¹²⁹⁵

- (778) As to the lack of flexibility, a customer explained that “*Japanese shipbuilders are not flexible when it comes to introducing changes to the vessels they build*”.¹²⁹⁶ This view was shared by another customer which stated that “*Japanese shipbuilders would be more expensive*” than the Korean shipbuilders, which could more easily accommodate the customer’s request to use new technologies than the Japanese shipbuilders.¹²⁹⁷
- (779) In this context, a customer noted that it has never invited Japanese shipbuilders or ordered from them for the following reasons: “*first, they build LNG carriers with non-membrane containment system technology, whilst [...] and its customers prefer membrane containment system technology as it takes up less space in the hull of the vessel and is charged lower tolls at Suez canal; second, Japanese-built LNG carriers tend to be far more expensive than Korean-built (roughly 5%-10%); third, delivery time is much longer than with Korean shipbuilders due to the fact that Japanese shipbuilders have less yard and skilled labour capacity. For these reasons, Japanese shipbuilders sell almost exclusively to Japanese customers. In this context, [...] explains that it would never consider ordering membrane LNG carriers from any of the Japanese shipbuilders, regardless of whether they hold a licence with GTT as Japanese shipbuilders have no track-record in building membrane LNG carriers and, in any event, they would still be more expensive than Korean-built LNG carriers.*”¹²⁹⁸ Another customer explained that “*Japanese shipbuilders historically have delivered vessels of a good quality. However, they are more expensive because of the exchange rate and the low availability of slots. Their progress along the technology curve has been slow. They use the MOSS containment system and mostly steam engines or some combination with steam propulsion. There is less and less capacity in Japan available since Japanese shipbuilders are usually building for Japanese ship owners only.*”¹²⁹⁹
- (780) A customer noted that “*Japanese yards were the leaders in LNG vessels in the past. However, they have kept using old technology; they reserved most slots for own*

¹²⁹⁵ [...] observations on the SO, pages 5 and 6. [DOC ID: 3851]

¹²⁹⁶ Minutes of the conference call with [...] dated 18 February 2020, paragraph 7. [DOC ID: 2839]

¹²⁹⁷ Minutes of the conference call with [...] dated 24 February 2020, paragraph 6. [DOC ID: 2767]

¹²⁹⁸ Minutes of the conference call with [...] dated 19 February 2020, paragraph 7. [DOC ID: 2486]

¹²⁹⁹ Minutes of the conference call with [...] dated 25 February 2020, paragraph 8. [DOC ID: 2922]

domestic customers; and, they have not consolidated”.¹³⁰⁰ A similar view was shared by a broker: the “*Japanese shipbuilding industry is a sunset industry. They mainly sell domestically. For export, Japanese shipbuilders tend to build only simple bulk carriers and even there they are struggling to compete with Chinese shipbuilders as their labour costs are much higher compared to China. They can only compete when the Yen is weak, or the market is strong*”.¹³⁰¹

- (781) On the supply side, the market investigation results indicate that Korean shipbuilders are now leading in LNGCs (especially in the LLNGCs market) and that Japanese shipbuilders are behind mainly due to the fact that Japanese shipbuilders use a different type of LNG cargo tank technology. For example, a shipbuilder explained that “*Japanese shipbuilders had advantages when MOSS tank type was more popular among operators, but recently membrane tank has developed both technically and in terms of track record, and it seems that past advantage has been lost recently*”¹³⁰² and then added that “*also in terms of suppliers quality Japanese shipbuilders have advantage against Korean builders, but recently Korean yards are more positive about cooperation with European suppliers, which means their disadvantage is getting smaller*”¹³⁰³. A shipbuilder also noted that Korean yards have more capacity than other yards: “*Their competitive advantage is their capacity. They have big yards. They can offer customers more slots and faster delivery times. For example, if [...] production capacity in LNGCs is [...] LNGCs per year, HHI or DSME can manufacture up to [...] LNGCs per year (although [...] cannot confirm HHI and DSME’s capacities for building LNGCs only)*.”¹³⁰⁴ The market investigation results indicated that such considerations would not change for FSRUs.¹³⁰⁵
- (782) As to the Notifying Party’s arguments that Japanese shipbuilders MHI, KHI, JMU, Imabari and Mitsui are actual or potential providers of membrane LLNGCs as they have shipyards licensed by GTT, the Commission notes that, as explained in **Section 8.3.8**, [...].¹³⁰⁶ [...] ¹³⁰⁷ Moreover, as explained by [...] and reported in **Section 8.3.8.3 (C) x**), MHI discontinued its membrane LLNGCs production due to lack of competitiveness and is selling its Koyagi yard, the only MHI yard in which it could build [...] conventional LLNGCs. Japanese shipbuilders consider it would be very difficult to enter into the membrane LLNGC market. According to [...] “*Japanese shipbuilders lost the market position they had in the past on the LNGC market and are not likely to regain it. It will be very difficult for Japanese shipbuilders to enter the membrane segment today considering the track record already accumulated by Korean shipbuilders such as HHIH and DSME. Furthermore, the materials needed to build membrane cargo tank containment systems are not easily available in Japan or are available at a higher cost than in South Korea or China.*”¹³⁰⁸ Customers consider that having a GTT licence is not sufficient to be regarded as a provider of membrane LLNGCs. A Customer stated that, in addition to the GTT licence, the shipbuilder would still need to have experienced and skilled workers for the building and installation of the cargo tank

¹³⁰⁰ Minutes of the conference call with [...] dated 24 February 2020, paragraph 9. [DOC ID: 2663]

¹³⁰¹ Minutes of the conference call with [...] dated 2 March 2020, paragraph 15 [DOC ID: 2657]

¹³⁰² Replies to question 88 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹³⁰³ Replies to question 89 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹³⁰⁴ Minutes of the conference call with [...] dated 26 July 2019, paragraph 19. [DOC ID: 296]

¹³⁰⁵ Replies to questions 88.1 and 89.1 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹³⁰⁶ [...] reply to question 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

¹³⁰⁷ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

¹³⁰⁸ Minutes of the conference call with [...] dated 13 February 2020, paragraph 10. [DOC ID: 2081]

containment system and while GTT may send a small team on site, “*the bulk of the work necessary for the building and installation of the cargo tank containment system is done by the shipbuilder*”.¹³⁰⁹

- (783) Further the market investigation has indicated that a solid track record (both quantitatively and qualitatively) is important in order to enter and compete in the market for LLNGCs (see **Section 8.3.8.3 (A) b)**).
- (784) This is also confirmed by [...]. By taking into account (i) shipyard design and innovation capability, (ii) inherent production quality (such as defects discovered during construction to be remedied before delivery), (iii) defects discovered after delivery and for which [...] has intervened, (iv) duration of vessel’s construction, (v) annual construction capacity, (vi) [...] staff on-site requirement per vessel and (vii) shipowner on-site surveyors requirements,¹³¹⁰ the three Korean are far more advanced than anyone else. Indeed, [...] states that “[...] *as it happens, in every market in which quantitative and qualitative track record is extremely important, the currently active three biggest Korean shipbuilders are best-in-class on all the criteria defined above, leaving a measurable gap between them and the rest, in particular in terms of time required for vessel delivery, and the number of supervisory staff considered by each stakeholder to be required per vessel*”.¹³¹¹
- (785) Finally, internal documents [...],¹³¹² [...].
- (786) Therefore, in view of the above, and in particular in view of the fact that Japanese shipbuilders that had been active in LLNGCs stopped competing in tenders around [...], that Japanese shipbuilders appear to more expensive and generally use a different LNG cargo containment system than the Parties, and the Parties’ internal documents, the Commission considers that the competitive constraint exercised by Japanese shipbuilders, and Mitsubishi Heavy Industries Co Ltd (MHI), Kawasaki Heavy Industries Corp (KHI), Imabari Shipbuilding Co Ltd and Japan Marine United Corporation (JMU) in particular is limited and would not be sufficient to counteract the likely negative effects of the Transaction.

(C) Conclusion

- (787) In light of the above, the Commission considers that Japanese shipbuilders do not currently constrain the Parties in a meaningful manner in the LLNGC market and in the large FSRUs segment. Further, Japanese shipbuilders will neither have the ability nor the incentive to exert a meaningful competitive constraint on the merged entity post-Transaction to defeat a possible price increase of the merged entity post-Transaction in the LLNGC market and in the large FSRUs segment. This contributes to the finding that the Transaction results in the creation of a dominant position by the merged entity.

8.3.4.4. Conclusions

- (788) In light of the above, the Commission considers that the merged entity will not be sufficiently constrained post-Transaction by SHI (see **Section 8.3.4.1**), CSSC (see **Section 8.3.4.2**) and will not be meaningfully constrained post-Transaction by the Japanese shipbuilders (see **Section 8.3.4.3**), whether taken individually or together, in the LLNGC market and in the large FSRUs segment. In particular, the

¹³⁰⁹ Minutes of the conference call with [...] dated 3 March 2020, paragraph 5.[DOC ID: 2490]

¹³¹⁰ [...] reply to question 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

¹³¹¹ [...] reply to question 1 of Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

¹³¹² [...].

Commission considers that the remaining shipbuilders will lack the ability and incentive to defeat a possible price increase post-Transaction by the merged entity in the LLNGC market and in the large FSRUs segment. This contributes to the finding that the Transaction results in the creation of a dominant position by the merged entity.

8.3.5. *Second-hand LLNGCs do not exert a meaningful competitive constraint on the market for newbuild LLNGCs*

8.3.5.1. The Notifying Party's views

(789) In the Response to the Article 6(1)(c) decision, the Notifying Party argues that second-hand LNGCs are expected to be increasingly traded in the near future for the following reasons First, LLNGCs become older it is likely that there will be more transactions in the second-hand market as it is the case with other vessel types. Second, classification societies are involved in periodic inspections of the vessels after delivery and customers of second-hand vessels would normally carry out detailed inspections either by themselves or via third-party engineers, customer feedback on the significant risks in terms of vessel maintenance, spare part procurement, fuel consumption and technology would overstate the risks of purchasing second-hand LLNGCs. Third, customer feedback reflected in the Article 6(1)(c) decision would refer to LNGCs built in the past and as the market matures, LNGCs which are currently being built or those delivered recently will increasingly become an alternative. Fourth, although shipbuilders do not directly compare and price against second-hand prices, second-hand vessels exert a constraint on shipbuilders' pricing decisions as well established LNG customers use second-hand market to obtain better prices from the Parties.¹³¹³ Fifth, with respect to large FSRUs, the Notifying Party argues that converted FSRUs are a viable cheaper and faster competitive alternative to new-built large FSRUs as converted vessels would be a viable cheaper.¹³¹⁴

8.3.5.2. The Commission's assessment

(A) Introduction

(790) The Commission will assess whether second-hand LLNGCs exert a meaningful competitive constraint over the market for new-built conventional LLNGCs. For the purpose of this analysis, the Commission considers (i) as second-hand LNGCs only those vessels which were classified as LNGCs at the time of the second-hand sale and (ii) second-hand FSRUs those vessels which were classified as FSRUs at the time of the second-hand sale, regardless of whether they were originally built as conventional LLNGCs (then converted into large FSRUs) or large FSRUs.

(B) Data submitted by the Notifying Party

(791) As shown by the data submitted by the Notifying Party¹³¹⁵ and reflected in the aggregated data in **Table 33** below, the number of second-hand membrane LLNGCs sold has been decreasing from the 2014-2018 or the 2015-2019 period to the 2016-2020 or the 2017-2021 (up to 30 September 2021) period, while the number of new-builds orders has significantly increased. As a consequence, the proportion of

¹³¹³ Response to the Article 6(1)(c) decision, paragraphs 370-373.

¹³¹⁴ The Notifying Party's submission on FSRUs, 17 April 2020.

¹³¹⁵ The Notifying Party's reply to question 42 of RFI 1, Annex Q42, Table 9; The Notifying Party's reply to question 1 of RFI 36, Annex Q1 - Updated New and second-hand LNG sales, 2014-2019 (follow up). See also the Notifying Party's reply to question 32 of RFI 67, Annex Q32.1.

second-hand membrane LLNGCs sold over new builds has also been decreasing significantly. With respect to second-hand non-membrane LLNGCs, there have been only 5 units sold across the 2014-2018, the 2015-2019 and no units sold in 2016-2020 and 2017-2021 (up to 30 September 2021). The number of second hand large FSRUs sold (as well as its proportion over the new builds) has been rather stable from 2014-2018 and 2017-2021 (up to 30 September 2021).¹³¹⁶

Table 33 Number of second-hand LLNGCs sold compare to new-builds orders in 2014-2018, 2015-2019, 2016-2020 and 2017-2021 (up to 30 September 2021), by LLNGC type/size¹³¹⁷

New/second hand	LLNGC type/size	No. of vessels sold/ordered (2014-2018)	Proportion of second-hand over new-builds (2014-2018)	No. of vessels sold/ordered (2015-2019)	Proportion of second-hand over new-builds (2015-2019)	No. of vessels sold/ordered (2016-2020)	Proportion of second-hand over new-builds (2016-2020)	No. of vessels sold/ordered (2017-2021)	Proportion of second-hand over new-builds (2017-2021, up to 30 September 2021)
Second-hand	Membrane LLNGCs	23(18)	14.7% (11.5%)	19(14)	12.3% (9.1%)	14	7.5%	15	6.6%
Second-hand	Non-membrane LLNGCs	5	26.3%	5	50%	-	-	-	-
Second-hand	Conventional membrane LLNGCs	20(15)	14.2% (10.6%)	17(12)	12.15(8.6%)	12	6.7%	14	6.2%
Second-hand	Conventional non-membrane LLNGCs	5	26.3%	5	50%	-	-	-	-
Second-hand	Large FSRUs	2	13.3% (14.3%)	1	7.7% (7.1%)	2	22.2%	1	14.3%
New builds	Membrane LLNGCs	156		154		188		226	
New builds	Non-membrane LLNGCs	19		10		-		- ¹³¹⁸	
New builds	Conventional membrane LLNGCs	141		140		179		219	

¹³¹⁶ The Notifying Party's reply to question 3 of RFI 37 and reply to question 1 of RFI 37, Annex Q1 and its updated version dated 7 May 2020 and replies to follow ups to RFI 37 dated 6 and 7 May 2020. See also the Notifying Party's reply to question 32 of RFI 67, Annex Q32.1.

¹³¹⁷ This footnote applies to the figures reported in brackets in the table: although the assessment of the impact of secondhand on the market for LLNGCs would not change if those five vessels were included in the counting as secondhand, the Commission questions that those vessels should be considered as secondhand vessels. As explained by the Notifying Party in its reply to question 3 of first follow up to RFI 37 and question 1 of the second follow up to RFI 37, those vessels ([...] from [...] and [...] from [...]) were originally ordered by [...], one of the Parties' customer and directly sold to clients of [...], a subsidiary of [...].

¹³¹⁸ As explained in Section 8.3.1 and Section 8.3.8.3 (C) xii), the Commission does not consider that the [...] is an LLNGC. In any event, the Commission's assessment would not change.

New/second hand	LNGC type/size	No. of vessels sold/ordered (2014-2018)	Proportion of second-hand new-builds over (2014-2018)	No. of vessels sold/ordered (2015-2019)	Proportion of second-hand new-builds over (2015-2019)	No. of vessels sold/ordered (2016-2020)	Proportion of second-hand new-builds over (2016-2020)	No. of vessels sold/ordered (2017-2021)	Proportion of second-hand new-builds over (2017-2021, up to 30 September 2021)
New builds	Conventional non-membrane LLNGCs	19		10		-		-	
New builds	Large FSRUs	15(14)		13(12)		9		7 ¹³¹⁹	

Source: The Notifying Party's reply to question 42 of RFI 1, Annex Q42, Table 9; The Notifying Party's reply to question 1 of RFI 36, Annex Q1 - Updated New and second-hand LNG sales, 2014-2019 (follow up); the Notifying Party's reply to question 32 of RFI 67, Annex Q32.1.

(792) The illiquidity of the second-hand market for LLNGCs, reflected in the above figures, is also discussed in some industry reports. For example, already in 2018, the Danish Ship Finance report considered the second-hand market for conventional LLNGCs as nearly non-existent: *“the back of the positive sentiment in the freight rate market, activity in the newbuild market picked up during the first nine months of 2018. The renewed interest in the market lifted the newbuild price of 170,000 m³ vessel to around US 182 million, USD 1 million higher than in January 2018. The second-hand market is illiquid, and only two vessels have changed hands so far in 2018.”*¹³²⁰ Such considerations were confirmed in the 2019 edition.¹³²¹ This appears to be the case for large FSRUs as well. A customer interviewed by the Commission explained that *“there is currently no second-hand market. [...]. However, a charterer may contract an FSRU that has already been operated on another project”*.¹³²² In addition, the Commission notes that neither the 2020 Clarksons [Research]'s Shipping Review & Outlook¹³²³ nor the September 2021 Clarksons [Research]'s Shipping Review & Outlook¹³²⁴ contain any reference to the second-hand market for LLNGCs.

(C) The Commission's market investigation results

(793) The market investigation showed that customers do not systematically consider to buy second-hand LNGCs in substitution to new-built due to the following reasons.

(794) First, the majority of customers that expressed an opinion indicated that they do not buy second-hand LLNGCs, except in very specific circumstances such as in case in which buying a second-hand conventional LNGC were part of a chartering deal or in case of conversion into an FSRU. More specifically, a customer stated that *“we would only buy second hand LNG carrier if it were part of a larger deal, i.e. a deal which would serve an LNG chartering client and involve buying from them an*

¹³¹⁹ The Commission notes that even if the FPSO FSRU ordered from [...] were included in the counting, this would not change materially the Commission's assessment.

¹³²⁰ Danish Ship Finance, “Shipping Market Review”, November 2018, page 85. [DOC ID: 3136]

¹³²¹ The Notifying Party's reply to question 2 of RFI 36, Annex Q2 - Danish Ship Finance, “Shipping Market Review”, December 2019, page 68.

¹³²² Minutes of the conference call with [...] dated 28 June 2019, reply to question 11. [DOC ID: 190]

¹³²³ The Notifying Party's reply to follow up to question 2 of RFI 36 – Clarksons [Research] Spring 2020.

¹³²⁴ The Notifying Party's reply to question 1 of RFI 67, Annex Q1 – Clarksons [Research] September 2021.

existing ship in order to charter more ships to them.”¹³²⁵ Another customer stated that “*buying second hand LNG carriers may be of interest for specific uses as FSRU. [...]*”¹³²⁶

- (795) Second, some customers that expressed an opinion seemed to be concerned that buying second-hand LLNGCs might entail significant risks in terms of vessel maintenance, spare parts procurement, technology and fuel consumption. For example, a customer stated that second-hand LNGCs “*are likely to bring many problems with sourcing spare parts, catching up on maintenance that may be left undone or to a lower standard than what we do on our fleet, training issues as the equipment makers on board will likely not be the same as what we have on our fleet [...]*”.¹³²⁷ Such concerns hold even more true in the LNG industry as any technical failure is likely to cause a reputation issue: “*the LNG industry is small in the number of clients. If we experience problems due to the age, maintenance, spares, etc of a second hand vessel, it will hurt our reputation*”.¹³²⁸
- (796) Third, as explained in **Section 7.1, Section 7.2, Section 8.3.2, Section 8.3.3 and Section 8.3.8**, the LLNGC market is characterised by innovation. As a consequence, as stated by a customer in the market investigation, “[...] *older vessels are less competitive due to technical improvements in the last 5 years, mainly in fuel consumption.*”¹³²⁹ Another customer stated that “*there has been a drastic technology improvement that most second-hand LNGC are not competitive in terms of size, design, fuel consumption, boil off and end user requirements*”.¹³³⁰ Consistently, a customer stated that “[t]here is no clear advantage [...] in purchasing a second hand LNG carrier for pure LNG sale purposes as newer vessels are more reliable, efficient, larger and better fit the global nature of the LNG portfolio. The main potential advantage in purchasing a second hand LNG carrier would be cost, but this is mainly outweighed by the size, technology, speed and fuel burning efficiency of the newer vessels”.¹³³¹
- (797) Fourth and consistently with the above, the majority of customers that expressed an opinion consider that prices of second-hand LLNGC market do not affect their company’s decision on whether to buy new-built LLNGCs.¹³³² For example, a customer stated “*we don’t expect any great bargains in pursuing a strategy of using second-hand vessels. Even if there may be bargains out there, the risks and problems of buying and operating second-hand tonnage generally outweigh the benefits. Therefore our focus is only on ordering new, modern, efficient LNG carriers when we believe the market or pricing is right to do so*”.¹³³³
- (798) Fifth, the majority of customers that expressed an opinion consider that prices of second-hand LNGCs do not affect price discussions with shipbuilders.¹³³⁴ A customer clarified that “*a second-hand LNG carrier cannot be compared with like for like with new build carrier at the moment. Generally, each generation of LNG*

¹³²⁵ Replies to question 42, 43 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³²⁶ Replies to question 43 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³²⁷ Replies to question 43 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³²⁸ Replies to question 43 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³²⁹ Minutes of the conference call with [...] dated 28 June 2019, reply to question 11. [DOC ID: 190]

¹³³⁰ Replies to question 46.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³³¹ Replies to question 43 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³³² Replies to question 46 and 47 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³³³ Replies to question 46 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³³⁴ Replies to question 48 and 49 of Questionnaire Q3 to Customers. [DOC ID: 3236]

*carrier new buildings are significantly larger, faster and more efficient than their second-hand predecessors. As a result, a like for like comparison cannot be made.*¹³³⁵ Another customer clarified that *“one area where second-hand vessels could affect new build prices is in FSRUs where conversion of a second-hand vessel can be done and to compete to some extent against new build FSRUs for a project. [...]”*¹³³⁶

- (799) Sixth, [...] established customers of LLNGCs interviewed by the Commission confirmed that the impact of second-hand LLNGCs on the market for new builds is very limited as LLNGCs are sophisticated vessels that can be built by a limited number of shipbuilders and whose technical and technological features tend to change significantly over time.¹³³⁷ For example, one of these [...] customers stated that *“[...] the second-hand market is less liquid in the sense that it does not always have similar impact on the market price for LNG carriers as in other tanker vessels, given that LNG technology is improving faster and the players are much less. [...]”*¹³³⁸
- (800) Seventh, on the supply side, market investigation results indicated that the majority of shipbuilders that responded do not take second-hand vessels into account for the pricing of new vessels.¹³³⁹ One shipbuilder stated that *“[s]econd hand prices do not affect the LNGC [...] [market] because these vessels are mostly ordered and employed on the basis of long-term gas supply projects so there is not much of a second hand market [...]”*¹³⁴⁰
- (801) Eighth, the [...] brokers interviewed by the Commission confirmed that the market for LLNGCs is rather illiquid if existent at all for the following reasons: there are fewer ships available if compared to other vessel types, technology is often developing and older second-hand vessels may not benefit from the latest technology and construction innovation, second-hand prices are high so newbuildings look cheap in comparison.¹³⁴¹
- (802) Ninth, the Commission notes that second-hand conventional LLNGCs may, in theory, if converted, exert a very limited competitive constraint on the large FSRUs segment. However, although the majority of customers that expressed an opinion consider that as a buyer of FSRUs they would consider that converting an existing conventional LLNGC into an FSRU is an alternative to buying a newly-built FSRU,¹³⁴² the majority of customers that expressed an opinion clarified that only certain types of old generation conventional LLNGCs can be more easily or efficiently converted into a large FSRU (as opposed to modern dual fuel two-stroke LLNGCs representing, according to the data submitted by the Notifying Party, [...] of the orders in 2015-2019 and 2016-2020, and representing [...] of the orders in 2017-2021 up to 30 September 2021)¹³⁴³ such as diesel electric (which have big

¹³³⁵ Replies to question 48 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³³⁶ Replies to question 48 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹³³⁷ Minutes of the conference call with [...] dated 17 February 2020, paragraph 7 [DOC ID: 2958]; Minutes of the conference call with [...] dated 17 February 2020, paragraph 6. [DOC ID: 2609]

¹³³⁸ Minutes of the conference call with [...] dated 17 February 2020, paragraph 7. [DOC ID: 2958]

¹³³⁹ Replies to question 54 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹³⁴⁰ Minutes of the call with [...] dated 26 July 2019, paragraph 18. [DOC ID: 296].

¹³⁴¹ Minutes of the conference call with [...] dated 4 March 2020, paragraph 12. [DOC ID: 2699] Minutes of the conference call with [...] dated 2 March 2020, paragraph 16. [DOC ID: 2657]

¹³⁴² Replies to question 18 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹³⁴³ The Notifying Party's reply to question 5 of follow up to RFI 37 dated 7 May 2020, Annex Q5 Follow Up. See also the updated version, the Notifying Party's reply to question 32 of RFI 67, Annex Q32.4.

electric power) and steam (which have big capacity boilers).¹³⁴⁴ While diesel electric vessels could be in theory more easily converted into open loop FSRUs (capacity boilers will have to be installed), the steam ones could be in theory more easily (and more cheaply) converted into closed loop FSRUs (two dual fuel generators will have to be installed).¹³⁴⁵ However, as explained by a customer, it may occur that even steam existing conventional LLNGCs are not suitable to be converted into large FSRUs as they are usually smaller than the standard modern conventional LLNGCs, which can be more efficient if not converted and used as conventional LLNGCs.¹³⁴⁶

- (803) In this context, the Commission notes that if, according to the data submitted by the Notifying Party, [...] of orders received by CSSC (Hudong) in 2014-2018 period consisted of diesel electric conventional LLNGCs, only a minority of each of the Parties' orders of conventional LLNGCs consisted of diesel electric or steam conventional LLNGCs in 2014-2018 (HHI: [...] for diesel electric, [...] for steam; DSME [...] for diesel electric and [...] steam), in 2016-2020 (DSME [...] for diesel electric and [...] steam) and in 2017-2021 up to 30 September 2021 (DSME: [...] for diesel electric, [...] steam)¹³⁴⁷ while [...] SHI [...] CSSC received [...] for diesel electric or steam in 2015-2019, 2016-2020 or 2017-2021 (up to 30 September 2021).¹³⁴⁸
- (804) Moreover, the Commission notes that converting an existing conventional LLNGC into a large FSRU [...] ¹³⁴⁹ and [...] ¹³⁵⁰ and the price of converted large FSRUs may even be equal to the price of a newbuild ¹³⁵¹ and that conversions would be relatively convenient only if the project's schedule is tight. ¹³⁵² The Commission notes that, as confirmed by the Notifying Party, ¹³⁵³ there are no examples of ordered or delivered conventional LLNGC in the 2009-2021 (up to 30 September 2021) period that were converted in large FSRUs with the exception of a conventional LLNGC built in 2009 and under conversion by [...] at the time of the SO and now converted. ¹³⁵⁴ [...] was

¹³⁴⁴ Replies to question 19 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹³⁴⁵ Replies to question 19 of Questionnaire Q8 to Customers [DOC ID: 3241]; minutes of the conference call with [...] dated 5 March 2020, paragraphs 7-8 [DOC ID: 2672]; minutes of the conference call with [...] dated 7 February 2020, paragraph 8 [DOC ID: 2357]; minutes of the conference call with [...] dated 6 February 2020, paragraph 6 [DOC ID: 2782]; minutes of the conference call with [...] dated 6 February 2020, paragraph 12. [DOC ID: 1730]

¹³⁴⁶ Minutes of the conference call with [...] dated 5 March 2020, paragraph 8. [DOC ID: 2672]

¹³⁴⁷ The Notifying Party's reply to question 32 of RFI 67, Annex Q32.3.

¹³⁴⁸ The Notifying Party's reply to question 6 of RFI 37, Annex Q6. See also The Notifying Party's reply to question 32 of RFI 67, Annex Q32.3.

¹³⁴⁹ Minutes of the conference call with [...] dated 6 February 2020, paragraph 11. [DOC ID: 1730]

¹³⁵⁰ Minutes of the conference call with [...] dated 7 February 2020, paragraphs 6-8. [DOC ID: 2357]

¹³⁵¹ Minutes of the conference call with [...] dated 5 March 2020, paragraph 7. [DOC ID: 2672] Minutes of the conference call with [...] dated 7 February 2020, paragraphs 6-8. [DOC ID: 2357]

¹³⁵² Minutes of the conference call with [...] dated 6 February 2020, paragraph 6. [DOC ID: 2782] Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 5. [DOC ID: 2780]

¹³⁵³ The Notifying Party's reply to questions 2 and 5 of RFI 37; the Notifying Party's reply to question 1 of RFI 36, Annex Q1- Updated New and second-hand LNG sales, 2014-2019 (follow up). See also reply to question 32 of RFI 67, Annex Q32.1 and reply to question 1 of the clarification request by the case team on question 32 of RFI 67, Annex Q32.

¹³⁵⁴ The Notifying Party's reply to question 5 of RFI 37; the Notifying Party's reply to question 6 of follow up to RFI 37; the Notifying Party's reply to question 3 of second follow up to RFI 37. See also reply to question 32 of RFI 67, Annex Q32.1 and reply to question 1 of the clarification request by the case team on question 32 of RFI 67, Annex Q32.

in the process, at the time of the SO, of converting two Japanese vessels built more than 10 years ago into FSRUs.¹³⁵⁵

- (805) Tenth, the Commission analysed the secondhand data of membrane LLNGCs submitted by the Notifying Party and notes that: (i) [...] out of [...] second-hand LLNGCs sold in 2014 corresponded to a newbuild ordered at least nine years before it was sold in the secondhand market; (ii) [...] out [...] of those sold in 2015 corresponded to a newbuild ordered at least nine years before the secondhand sale; (iii) the [...] secondhand vessel sold in 2016 corresponded to a newbuild ordered 4 years before the secondhand sale; (iv) the [...] secondhand vessel sold in 2017 corresponded to a newbuild ordered 6 years before the secondhand sale; (v) [...] out of [...] vessels classified by the Parties as secondhand vessels and directly sold in 2018 corresponded to newbuilds ordered in 2018,¹³⁵⁶ while [...] out of [...] was ordered in 2017; (vi) [...] out [...] secondhand vessels sold in 2019 corresponded to newbuilds ordered 8 years before the secondhand sale, [...] out of [...] corresponded to a newbuild ordered 5 years before the secondhand sale and [...] to a newbuild ordered 15 years before; (vii) the [...] second-hand vessel sold in 2020 corresponded to a newbuild ordered in 2019; (viii) the [...] second-hand vessels ordered in 2021 corresponded to newbuilds ordered in 2006 and 2008¹³⁵⁷
- (806) The Commission notes that the [...] secondhand vessels sold in 2018 should rather be considered as newbuilds. In any event, even though the Commission agreed with the Parties in considering such vessels as secondhand, the above data shows how in the majority of cases secondhand vessels are relatively old. As outlined in **Section 7.1, Section 7.2, Section 8.3.2, Section 8.3.3 and Section 8.3.8**, LLNGCs are highly sophisticated vessels requiring very specific know-how and characterised by the introduction and implementation of continuous innovative technologies (developed and introduced by both upstream equipment manufacturers and shipbuilders) ranging from mere industrial processes to ALS and ice-breaking technologies and LNG cargo tank containment system design and non-design innovations and improvements.¹³⁵⁸
- (807) For these reasons, the Commission considers it to be unlikely that the second-hand market for LLNGCs is likely to become more and more liquid and be able to exert an appreciable competitive constraint over the new-build market in the short and medium term.

8.3.5.3. Conclusion

- (808) The Commission considers that second-hand LLNGCs do not exert a meaningful competitive constraint on the market for new-build LLNGCs and in the large FSRUs segment.

¹³⁵⁵ Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 4. [DOC ID: 2780]

¹³⁵⁶ Although the assessment of the impact of secondhand on the market for LLNGCs would not change if those [...] vessels were included in the counting as secondhand, the Commission questions that those vessels should be considered as secondhand vessels. As explained by the Notifying Party in its reply to question 3 of first follow up to RFI 37 and question 1 of the second follow up to RFI 37, [...].

¹³⁵⁷ The Notifying Party's reply to question 1 of second follow up RFI 37, Annex Q1 – updated, Tab Q1a. The Notifying Party's reply to question 32 of RFI 67, Annex Q32.2.

¹³⁵⁸ Minutes of the conference call with [...] dated 21 February 2020, paragraphs 14-15 [DOC ID: 2530]; [...] reply to questions 12-13 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

8.3.6. *Current and future LLNGC market outlooks*

(809) In this Section, the Commission sets out its view that the current and future outlook for the demand of LLNGCs remains positive in spite of the COVID-19 pandemic. In particular, contrary to the Notifying Party's arguments that the most recent market dynamics would further support the view that the merged entity would not enjoy market power, the Commission finds that those recent market dynamics are such that the current and future demand outlook remains positive, and that they do not change the Commission's conclusions on the creation of the dominant position that would result from the Transaction.

8.3.6.1. The Notifying Party's arguments

(810) As outlined in **Section 8.2.2**, the Notifying Party submitted to the Commission its views on the expected impact of the COVID-19 crisis on the shipbuilding industry and on the competitive effects of Transaction.¹³⁵⁹ The Notifying Party argues in essence that the COVID-19 pandemic has already decreased and is further expected to decrease speculative and non-speculative demand for LLNGCs.¹³⁶⁰ This would be due to weaker winter gas pricing and the drop in Chinese demand and imports in light of COVID-19 developments.¹³⁶¹ Similarly, the recent oil price war, driving oil prices to significant lows, is creating the potential for delays or even cancellation of certain upstream LNG liquefaction projects that may further impact LNGCs demand.¹³⁶² In this context, customers would put pressure on shipbuilders to extend options validity or to renegotiate more favourable contract terms.¹³⁶³

(811) In the Response to the SO, the Notifying Party argued that as a result of the Covid-19 pandemic, the Commission's market investigation feedback would be outdated and no longer reflect the current state of the shipbuilding industry.¹³⁶⁴

(812) In the Response to the First Letter of Facts, the Notifying Party submits that the Commission presented an overly optimistic market demand outlook for the following reasons.¹³⁶⁵ First, the Notifying Party claims that recent orders would not be evidence of future demand or of the lack of impact of COVID-19.¹³⁶⁶ Second, the Commission ignored clear evidence on the impact of COVID-19 on LNG projects and as a result future LLNGC demand, which would also be confirmed by the latest Clarksons report.¹³⁶⁷ Third, the Commission mischaracterised the latest demand forecasts by relying on outdated 2020-2024 forecasts and on incorrect data on long-term forecasts.¹³⁶⁸ Fourth, the First Letter of Facts overestimated the impact of increased environmental regulation on LLNGC demand.¹³⁶⁹ Fifth, the Commission repeatedly

¹³⁵⁹ Notifying Party's submissions of 30 March 2020, 17 April 2020 and 29 May 2020.

¹³⁶⁰ The Notifying Party's submission of 29 May 2020 "Impact of COVID-19 on the Proposed Transaction"; The Notifying Party's reply to question 4 of RFI 45.

¹³⁶¹ The Notifying Party's submission of 29 May 2020 "Impact of COVID-19 on the Proposed Transaction", paragraph 2.13; The Notifying Party's reply to question 4 of RFI 45.

¹³⁶² The Notifying Party's submission of 29 April 2020 "Impact of COVID-19 on the Proposed Transaction", paragraph 2.13; The Notifying Party's reply to question 4 of RFI 45.

¹³⁶³ The Notifying Party's reply to question 1 of RFI 45; The Notifying Party's reply to question 4 of RFI 46;

¹³⁶⁴ Response to the SO, paragraphs 119-137.

¹³⁶⁵ Response to the First Letter of Facts, paragraphs 128-149.

¹³⁶⁶ Response to the First Letter of Facts, paragraphs 128-130.

¹³⁶⁷ Response to the First Letter of Facts, paragraphs 131-134.

¹³⁶⁸ Response to the First Letter of Facts, paragraphs 135-138.

¹³⁶⁹ Response to the First Letter of Facts, paragraphs 139-141.

relied on irrelevant and outdated evidence to support its market outlook analysis.¹³⁷⁰ Sixth, the Commission also exaggerated the significance of Arc7 LLNGC demand, which would also be mostly met by SHI-Zvezda.¹³⁷¹ Seventh, the Commission's market outlook for large FSRUs would also be misguided as it would not take into account conversions.

- (813) In the Response to the Second Letter of Facts,¹³⁷² the Notifying Party claims that the Commission continued to overestimate the likely level of demand for LLNGCs as forecasts can only provide an indication of potential demand and require an assessment. Moreover, according to the Notifying Party, there is other evidence, which indicates that demand in fact will be closer to MSI's prediction of [...] LLNGCs per year on average for the next five years. As a consequence, there are doubts on Clarksons' forecast.

8.3.6.2. The Commission's assessment

(A) Introduction

- (814) In this Section, the Commission sets out its assessment of the current and future outlook for the demand of LLNGCs, which it considers remains positive in spite of the COVID-19 pandemic for the reasons set out below. In particular, the Commission considers that post-Transaction the Parties will not be constrained by a low or decreasing level of demand in the LLNGC market and that this, combined with the Commission's findings presented in **Section 8.3.2**, **Section 8.3.4** and **Section 8.3.8**, will allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction.

- (815) The Commission considers that the evidence referred to in the present **Section 8.3.6** is also relevant in the context of **Section 8.2** and, in particular, of **Section 8.2.2**. It confirms the Commission's finding that for the purpose of the assessment of the Transaction the relevant counterfactual in the absence of the Transaction is a situation where there is head to head competition between the Parties in the LLNGC market. The Commission also considers that, as explained in **Section 8.2**, the evidence presented in this Section confirms its finding according to which, absent the Transaction, DSME would likely continue to exercise an effective competitive pressure in the market for LLNGCs.

(B) Demand for LLNGCs has remained strong

- (816) The Commission considers that demand for LLNGCs has remained strong for the following reasons.

- (817) First, the current positive outlook for demand of LLNGCs is demonstrated by the importance of LLNGCs in proportion to the Parties' activities, both in terms of value¹³⁷³ and CGTs. The fact that the current outlook is positive in particular as regards EEA demand for LLNGCs is demonstrated by the share of EEA customers.¹³⁷⁴ First, the total market for LLNGCs was of EUR 28.2 billion in 2015-2019, of EUR 32.8 billion in 2016-2020 and of EUR 38.8 billion in 2017-2021

¹³⁷⁰ Response to the First Letter of Facts, paragraphs 142-143.

¹³⁷¹ Response to the First Letter of Facts, paragraphs 144-148.

¹³⁷² Response to the Second Letter of facts, paragraph 149 and ff.

¹³⁷³ Newbuild price in USD recorded by Clarksons in the database provided in response to RFI 67, Annex Q38.

¹³⁷⁴ Based on the owner nationality and builder group data provided by the Clarksons database in response to RFI 67, Annex Q38.

(up to 30 September 2021).¹³⁷⁵ Second, [...],¹³⁷⁶ [...].¹³⁷⁷ Third, [...].¹³⁷⁸ Of the LLNGCs ordered (in value) from the Parties in 2015-2019, 2016-2020 and 2017-2021 (up to 30 September 2021), EEA customers accounted for respectively [...], [...], and [...] % of all orders.¹³⁷⁹ Of the LLNGCs ordered (in CGT) from the Parties in 2015-2019, 2016-2020 and 2017-2021 (up to 30 September 2021), EEA customers accounted for [...], [...], and [...] % of all orders.¹³⁸⁰ In addition, as apparent from the data submitted by the Notifying Party, of the 2015-2019 total market size (in value) of large FSRUs of EUR 2.7 billion, 62% was accounted for by EEA customers.¹³⁸¹ Of the 2016-2020 total market size (in value) of EUR 1.83 billion, 67% was accounted for by EEA customers.¹³⁸² Of the 2017-2021 (up to 30 September 2021) total market size (in value) of EUR 1.5 billion, 49% was accounted for by EEA customers.¹³⁸³

- (818) Second, Clarksons [Research] reported that while contracting declined across the high volume bulk carrier, tanker and containership sectors in 2019, LNGCs¹³⁸⁴ remained elevated, though below the peak of 2018, and newbuild prices ticked up in the sector.¹³⁸⁵ Upon release of its September 2020 forecasts, Clarksons [Research] mentioned that even though there has been an important number of firm orders booked in 2018 and 2019, LNGC contracting was relatively limited in 2020.¹³⁸⁶ In its March 2021 forecasts, Clarksons [Research] added that LNGCs orders' volume went down by 2% in terms of cubic meters in 2020.¹³⁸⁷ Nonetheless, Clarksons [Research] confirmed that there has been further activity in the sector in 2020. [...] signed berth reservation agreements with HHI, DSME, SHI and CSSC (Hudong) in Q2 of 2020, which is expected to support a large number of firm orders in 2021-2024.¹³⁸⁸ Indeed, in its March 2021 forecasts Clarksons [Research] confirmed that LNGCs¹³⁸⁹ orders only negligibly decreased in 2020.¹³⁹⁰ Moreover, Clarksons also confirmed that contracting picked up in the second half of 2020 and orders for various projects were

¹³⁷⁵ The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

¹³⁷⁶ Clarksons database provided in response to RFI 67, Annex Q38.

¹³⁷⁷ Clarksons database provided in response to RFI 67, Annex Q38.

¹³⁷⁸ Clarksons database provided in response to RFI 67, Annex Q38.

¹³⁷⁹ Clarksons database provided in response to RFI 67, Annex Q38.

¹³⁸⁰ Clarksons database provided in response to RFI 67, Annex Q38.

¹³⁸¹ The Notifying Party's reply to question 9 of RFI 67, Annex Q9.

¹³⁸² The Notifying Party's reply to question 9 of RFI 67, Annex Q9.

¹³⁸³ The Notifying Party's reply to question 9 of RFI 67, Annex Q9.

¹³⁸⁴ Clarksons [Research], in its reports and forecasts refers mainly to LNGCs, regardless of size. The Commission notes that this would not affect the relevance of these reports and forecasts for LLNGCs. Indeed, as explained in **Section 7.2**, small or mid-sized LNGCs represent a tiny fraction of LNGCs.

¹³⁸⁵ The Notifying Party's submission on the impact of current crisis on shipbuilding industry dated 17 April 2020, Annex 1 - Clarksons [Research] – "The Newbuilding Market 2020-2032 – Forecast Report, March 2020", page 5.

¹³⁸⁶ The Notifying Party reply to RFI 53 – Clarksons [Research] – "The Newbuilding Market 2020-2032 – Forecast Report, September 2020", page 10.

¹³⁸⁷ The Notifying Party reply to RFI 63 – Clarksons [Research] – "The Newbuilding Market 2021-2033 – Forecast Report, March 2021", page 10.

¹³⁸⁸ The Notifying Party reply to RFI 53 – Clarksons [Research] – "The Newbuilding Market 2020-2032 – Forecast Report, September 2020", page 10.

¹³⁸⁹ Clarksons [Research] forecasts look at all sizes of LNGCs. The Commission notes that this would not affect the relevance of these reports and forecasts for LLNGCs. Indeed, as explained in **Section 7.2**, small or mid-sized LNGCs represent a tiny fraction of LNGCs. In any event, the Commission also notes that only the LLNGC part of the forecast is used for the Commission's forecast analysis provided in **Section 8.3.7**.

¹³⁹⁰ The Notifying Party reply to RFI 63 – Clarksons [Research] – "The Newbuilding Market 2021-2033 – Forecast Report, March 2021", page 10.

expected to be placed before the end of the year.¹³⁹¹ This was subsequently confirmed as 34% of orders in 2020 have been placed in the third quarter and 60% in the fourth quarter, thereby enabling 2020 to exceed 2016 and 2017 in terms of total orders and almost reach the (particularly high) average orders level over the 2016-2020 period, in spite of the COVID-19 pandemic.¹³⁹² This is also confirmed by an internal document of HHIH,¹³⁹³ in which it is reported that “[...] [t]he shipowner repeatedly mentioned the importance of this project, which is well cruising even in the current extremely depressed global economy [...]”.¹³⁹⁴ In its September 2021 forecasts, Clarksons [Research] confirmed that “LNG carrier ordering has remained relatively firm in 2021 so far, driven almost entirely by project requirements [...]”.¹³⁹⁵ In this context, Clarksons [Research] reports that “LNG carrier demand grows by a firm 6% p.a. across the forecast period, fairly similar to expectations six months ago, with support from a strong project profile (including growing long-haul exports from the US) and the shift towards cleaner energy sources globally.”¹³⁹⁶

- (819) Third, the above is also confirmed by KSOE’s conference call reported by Hellenic Shipping News and dated 30 April 2020.¹³⁹⁷ KSOE explains that its shipbuilding unit seek to secure orders worth USD 19.5 billion in 2020, only slightly contracted from 2019’s USD 19.62 billion, despite the COVID-19 pandemic. KSOE confirms that “[i]n a breakdown of Clarkson research’s outlook, however, the decline in the orders for LNG [carriers] [...] are relatively mild. [...]”.¹³⁹⁸ KSOE explains that it also expects no major delays in major LNG projects across the world, since many of them are state-run or massive projects and authorities will not take action lightly to postpone orders as delays will cause immense losses for them.¹³⁹⁹ In this context, KSOE stated that “[...] [t]here will be no impact on this year’s sales on Hyundai Heavy Industries and Hynudai Samho Heavy Industries. [...]”.¹⁴⁰⁰
- (C) Future demand outlook for LLNGCs remains positive in spite of the COVID-19 outbreak
- (820) The Commission considers that future demand outlook for LLNGCs remains positive in spite of the COVID-19 outbreak for the following reasons.
- (821) First, the LLNGCs market is characterised by growth prospects. As shown in **Figure 50** below, [...].

¹³⁹¹ The Notifying Party reply to RFI 53 – Clarksons [Research] – “The Newbuilding Market 2020-2032 – Forecast Report, September 2020”, page 26.

¹³⁹² Clarksons [Research] database provided in response to RFI 67, Annex Q38.

¹³⁹³ [...].

¹³⁹⁴ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.1.36, page 2.

¹³⁹⁵ The Notifying Party reply to RFI 67 – Clarksons [Research] – “The Newbuilding Market 2021-2033 – Forecast Report, September 2021”, page 10.

¹³⁹⁶ The Notifying Party reply to RFI 67 – Clarksons [Research] – “The Newbuilding Market 2021-2033 – Forecast Report, September 2021”, page 18.

¹³⁹⁷ “KSOE expects limited impact on order backlog amid COVID-19”, Hellenic Shipping News, 30 April 2020. [DOC ID: 3035]

¹³⁹⁸ “KSOE expects limited impact on order backlog amid COVID-19”, Hellenic Shipping News, 30 April 2020. [DOC ID: 3035]

¹³⁹⁹ “KSOE expects limited impact on order backlog amid COVID-19”, Hellenic Shipping News, 30 April 2020. [DOC ID: 3035]

¹⁴⁰⁰ “KSOE expects limited impact on order backlog amid COVID-19”, Hellenic Shipping News, 30 April 2020. [DOC ID: 3035]

Figure 50 HHIH's view on LLNGCs market demand

[...]

Source: HHIH's investor presentation "190307 CITIKorea" page 30-31 [DOC ID: 3259]

- (822) In September 2021, HHIH still considers that [...].¹⁴⁰¹ Specifically on (L)LNGCs, HHIH considers that [...].¹⁴⁰²
- (823) Second, third party analysts like Clarksons [Research] also confirmed this positive sentiment and, in September 2019 depicted LNGC outlook as "*positive in the short term*" and "*generally optimistic in the long-term*".¹⁴⁰³ As explained below, , this was subsequently confirmed in September 2020, March 2021 as well as September 2021.
- (824) As shown in **Figure 51** and **Figure 52** below, Clarksons considered and still considers that although the overall outlook for the LNGCs sector had appeared to have become weaker in 2020 because of the COVID-19 pandemic, and the reduction in LNG prices, the short-term and long-term outlook for LNGCs has remained and still remains positive.¹⁴⁰⁴ Indeed, Clarksons [Research] confirmed already in September 2020 that "*[...] despite current challenges, underlying positive drivers remain, with potential still for significant LNG trade growth in the next decade alongside the ongoing transition of the global energy mix.*"¹⁴⁰⁵ Clarksons [Research] reconfirmed this view in March 2021.¹⁴⁰⁶ In September 2021, Clarksons [Research] clearly stated that "*[t]he LNG sector appears healthy, having continued to strengthen following the slowdown in growth last year owing to effects from Covid-19.*"¹⁴⁰⁷ More specifically, Clarksons [Research] stated that "*[o]verall, global LNG trade is projected to grow by 6% in 2021, and by 10% in tonne-miles, marginally faster than expected LNG carrier fleet capacity growth of 9%. The short-term market outlook appears positive [...].*"¹⁴⁰⁸ Clarksons [Research] also confirmed that "*[p]rospects over the next few decades appear positive with gas expected to gain share in the global energy mix amid a shift towards cleaner fuels.*"¹⁴⁰⁹ Clarksons [Research] also confirmed that "*[...] ordering picked up in Q3 [of 2020], bringing*

¹⁴⁰¹ The Notifying Party's reply to question 5 of RFI 65, Annex Q5, page 28

¹⁴⁰² The Notifying Party's reply to question 5 of RFI 65, Annex Q5, page 28

¹⁴⁰³ Clarksons Research, "Shipping Review and Outlook", Autumn 2019, page 72. Submitted as Exhibit 31 of the submission made by DSME/KDB on 30 January 2020.

¹⁴⁰⁴ The Notifying Party's reply to follow up to question 2 of RFI 36. Clarksons [Research] Spring 2020, page 59. See also Clarksons Research, "Shipping Review and Outlook", September 2020, page 26, 59. Submitted as the Notifying Party's reply to RFI 53. Clarksons Research, "Shipping Review and Outlook", March 2021, page 26, 59. Submitted as the Notifying Party's reply to RFI 63. See also The Notifying Party reply to RFI 53 – Clarksons [Research] – "The Newbuilding Market 2020-2032 – Forecast Report, September 2020". See also The Notifying Party reply to RFI 67 – Clarksons [Research] – "The Newbuilding Market 2021-2033 – Forecast Report, September 2021". Submitted by the Notifying Party in response to RFI 67. See also Clarksons Research, "Shipping Review and Outlook", September 2021. Submitted by the Notifying Party in response to RFI 67.

¹⁴⁰⁵ Clarksons Research, "Shipping Review and Outlook", September 2020, page 26. Submitted as the Notifying Party's reply to RFI 53.

¹⁴⁰⁶ Clarksons Research, "Shipping Review and Outlook", March 2021, page 26. Submitted as the Notifying Party's reply to RFI 63.

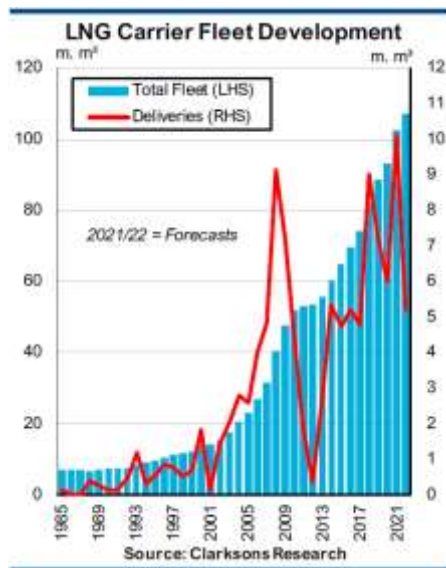
¹⁴⁰⁷ Clarksons Research, "Shipping Review and Outlook", September 2021, page 61. Submitted as the Notifying Party's reply to RFI 67.

¹⁴⁰⁸ Clarksons Research, "Shipping Review and Outlook", September 2021, page 27. Submitted as the Notifying Party's reply to RFI 67.

¹⁴⁰⁹ Clarksons Research, "Shipping Review and Outlook", September 2021, page 27. Submitted as the Notifying Party's reply to RFI 67.

the year to date total to 21, with further project-related orders expected [...]”.¹⁴¹⁰ Clarksons [Research] has further reconfirmed the positive outlooks stating: “newbuild contracting picked up in 2H 2020 (47 vessels) following very subdued ordering in 1H (6), and by start March 2021 the orderbook totalled 150 ships of 22.9m cbm, equal to 24% of fleet capacity. Significant ordering related to Qatari requirements is expected in the coming years, following on from the [...] berth reservations made by Qatargas in 2020. Further orders for other projects under construction (e.g. in Nigeria and Canada) are also expected. Fleet renewal, given the major propulsion changes of the last decade and growing environmental pressures, is also likely to drive ordering (37% of fleet capacity still uses steam turbine engines).”¹⁴¹¹ In September 2021, Clarksons [Research] stated that “LNG carrier contracting has also been firm [...] with some owners choosing to exercise options at competitive newbuild prices. [...] The short-term outlook for contracting remains positive, with the first orders for Qatar’s major [...] ship requirement expected to be confirmed before end 2021. Fleet renewal requirements are also expected to increase in coming years, particularly as environmental pressures are expected to lead to an accelerated phase out of older steam turbine tonnage.”¹⁴¹²

Figure 51 LNGC fleet development



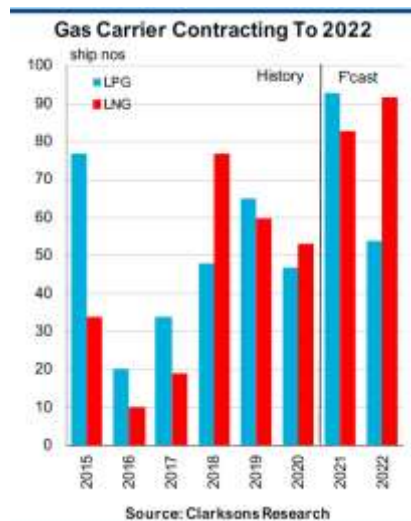
Source: Clarksons [Research] September 2021 – Figure 2.2.20

¹⁴¹⁰ Clarksons Research, “Shipping Review and Outlook”, September 2020, page 59. Submitted as the Notifying Party’s reply to RFI 53.

¹⁴¹¹ Clarksons Research, “Shipping Review and Outlook”, March 2021, page 59. Submitted as the Notifying Party’s reply to RFI 63.

¹⁴¹² Clarksons Research, “Shipping Review and Outlook”, September 2021, page 62. Submitted as the Notifying Party’s reply to RFI 67.

Figure 52 LNGCs contracting forecast (short-term)



Source: Clarksons [Research] “The Newbuilding Market 2021-2033 – Forecast Report, September 2021” – Page 24

- (825) With respect to FSRUs, Clarksons [Research] considered in September 2020 that “[...] project-driven requirements may still support short term contracting while trends in global energy consumption and growing flexibility in the LNG sector may offer long term support”.¹⁴¹³ It then confirmed in March 2021 that “[...] there remains significant growth potential [...]. Future demand may also stem from companies using FSRUs in ‘LNG-to-power’ projects to offer countries a quickly-available electricity supply.”¹⁴¹⁴ In September 2021, Clarksons [Research] confirmed that “FSRUs now account for 12% of import capacity and 26% of capacity under construction, demonstrating the growth of the sector, though momentum has slowed in recent years and some projects have experienced setbacks [...]. Still, the long-term outlook for the sector appears positive with clear growth potential [...]”.¹⁴¹⁵
- (826) More specifically, while (L)LNGC demand projections in March 2020 were slightly revised downwards from Q3 and Q4 of 2019 to reflect increased risk to project timelines from the recent record low LNG price environment and disruption from the COVID-19 outbreak, projects in the US, Qatar, Russia and Mozambique amongst others were expected to progress and drive firm growth in LNG trade over the 2020s, all of them potentially set to lead to newbuild orders.¹⁴¹⁶ Clarksons [Research]

¹⁴¹³ Clarksons Research, “Shipping Review and Outlook”, September 2020, page 59. Submitted as the Notifying Party’s reply to RFI 53.

¹⁴¹⁴ Clarksons Research, “Shipping Review and Outlook”, March 2021, page 59. Submitted as the Notifying Party’s reply to RFI 63. Clarksons [Research] indicates a shift in focus away from newbuilds towards conversions of older steam turbine units. As explained in Section 7.4.1.9 of the SO (e.g paragraph 767 and ff) second-hand conventional LLNGCs may, in theory, if converted, exert a very limited competitive constraint on the large FSRUs segment. However, for the reasons explained in the same Section of the SO, conversions from second hand conventional LLNGCs do not exert meaningful competitive constraint on the market for new build large FSRUs.

¹⁴¹⁵ Clarksons Research, “Shipping Review and Outlook”, September 2021, page 62. Submitted as the Notifying Party’s reply to RFI 67.

¹⁴¹⁶ The Notifying Party’s reply to follow up to question 2 of RFI 36 – Clarksons [Research] Spring 2020. See also The Notifying Party’s submission on the impact of current crisis on shipbuilding industry dated 17 April 2020, Annex 1 – Clarksons [Research] – “The Newbuilding Market 2020-2032 – Forecast Report, March 2020”, page 24, 26-28.

confirmed in September 2020 that projects in the US, Qatar, Russia and Mozambique, amongst others, were expected to progress and drive firm growth in LNG trade over the 2020s, all of them potentially set to lead to newbuild orders : *“[i]n 2021, total LNG carrier ordering is projected to slow slightly to 46 units [...]. A range of LNG export projects are expected to underpin orders in the short-term, including projects in Mozambique, Russia, Canada, and Qatar [...].”*¹⁴¹⁷ Clarksons further confirmed in March 2021 that: *“The short-term outlook for LNG carrier contracting remains positive, with outstanding requirements for a number of projects currently under construction, including in Canada and Nigeria. Around 90-100 orders are also expected to be finalised for Qatari requirements, including for the North Field Expansion, the Golden Pass project in the US and replacement of some existing Qatari tonnage, although there remains uncertainty over the precise order confirmation time-line, with contracts likely to be placed in batches over coming years. Newbuild interest is also expected from growing demand for replacement of older steam turbine tonnage, with concerns over the potential impacts of the EEXP”.*¹⁴¹⁸ Clarksons [Research] further confirmed in September 2021 that *“[i]n the LNG carrier sector, firm ordering in the year so far is likely to be supported by further activity, with 83 orders projected in the full year. Following recent slot reservation agreements, Qatari interests could potentially begin firming up a large number of orders in Q4 2021. Requirements for other projects including Arctic 2 and Nigeria T7 may also generate contracting”.*¹⁴¹⁹

- (827) In September 2020, Clarksons [Research] considered that in the long term, notwithstanding the COVID-19 pandemic, the outlook for the LNGCs sector remains positive. In particular, Clarksons [Research] noted that *“[t]he outlook for LNG carrier contracting remains positive into the long term, with an average of 66 vessels projected to be ordered in 2020-30, 42 of which in the large size sector. The contracting projection is lower overall than six months ago, with the Covid-19 pandemic having had a major impact on the global energy market [...]. However, the contracting projection in the medium-term period is similar to six months ago, with more advanced projects in Qatar, Russia, Mozambique and others still expected to progress [...]. Overall, LNG carrier contracting is expected to continue to be supported by the growing share of gas in the global energy mix.”*¹⁴²⁰ Clarksons [Research] confirmed the above in March 2021, as follows: *“The outlook for LNG carrier contracting remains positive into the long-term, with an average of 62 vessels projected to be ordered p.a. in 2021-31, 40 of which in the large size sector. The contracting projection for large LNG carriers is similar overall to six months ago, with marginally lower demand side projections (amid greater clarity over project timelines following the significant disruption from Covid-19 on the project sanctioning environment in 2020) largely offset by expectations for faster fleet renewal, with pressure from environmental regulations on steam turbine tonnage in particular expected to increase in coming years. Overall, LNG carrier contracting is*

¹⁴¹⁷ The Notifying Party reply to RFI 53 – Clarksons [Research] – “The Newbuilding Market 2020-2032 – Forecast Report, September 2020”, page 28.

¹⁴¹⁸ The Notifying Party reply to RFI 63 – Clarksons [Research] – “The Newbuilding Market 2021-2033 – Forecast Report, March 2021”, page 28.

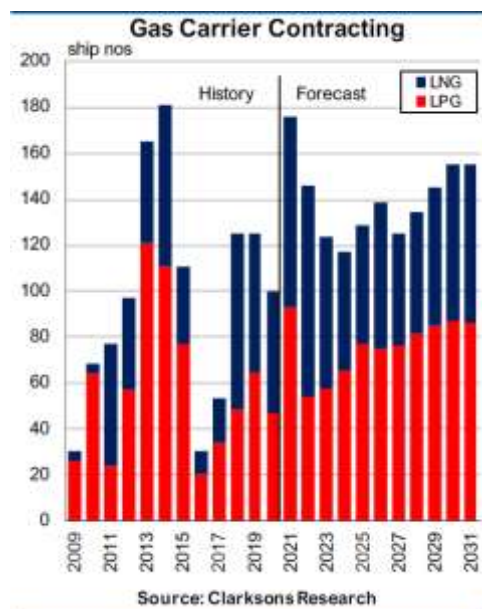
¹⁴¹⁹ The Notifying Party reply to RFI 67 – Clarksons [Research] – “The Newbuilding Market 2021-2033 – Forecast Report, March 2021”, page 22.

¹⁴²⁰ The Notifying Party reply to RFI 53 – Clarksons [Research] – “The Newbuilding Market 2020-2032 – Forecast Report, September 2020”, page 34.

expected to continue to be supported by the growing share of gas in the global energy mix”.¹⁴²¹

- (828) As shown in **Figure 53** below, Clarksons [Research] further confirmed the above in September 2021 as follows: “LNG carrier ordering averages 64 ships p.a. in 2021-31, 47 of which in the large size sector. Expectations for large LNG carrier ordering are higher than six months ago, largely reflecting expectations for a faster phase-out of older steam turbine tonnage”.¹⁴²²

Figure 53 LNGCs contracting forecast (long-term)



Source: Clarksons [Research] “The Newbuilding Market 2021-2033 – Forecast Report, September 2021” – Page 28

- (829) Third, other public sources also confirmed that orders were already expected to pick up again: “[...] South Korean shipbuilders are expecting the orders for newbuild liquefied natural gas carriers. Hyundai Heavy group of shipyards and Samsung Heavy are expected to book orders for LNG carriers to serve the Mozambique LNG project, before the end of the year. Citing Samsung Securities analyst, Yonhap reports the orders for new LNG vessels are showing signs of recovery in the second half of the year due to the Mozambique project as well as new developments in Russia”.¹⁴²³ [...] .¹⁴²⁴ [...] .¹⁴²⁵

- (830) Fourth, in terms of the expected demand for LLNGCs, **Table 34** below presents the latest available forecast estimates of Clarksons (September 2021) and MSI (Q3 2021). Clarksons revised its estimate upwards with respect to its past three forecasts to an average of 52 new vessels ordered every year in the period 2021-2025.¹⁴²⁶ As regards the more pessimistic scenario from the data provider MSI, MSI increased its estimates, compared its past three forecasts, to an average of 35 orders per year. The

¹⁴²¹ The Notifying Party reply to RFI 63 – Clarksons [Research] – “The Newbuilding Market 2021-2033 – Forecast Report, March 2021”, page 34.

¹⁴²² The Notifying Party reply to RFI 67 – Clarksons [Research] – “The Newbuilding Market 2021-2033 – Forecast Report, September 2021”, page 26.

¹⁴²³ “DSME nets \$1.7 bln LNG carriers order”, Offshore Energy dated 14 October 2020. [DOC ID: 4125]

¹⁴²⁴ [...] information memorandum for investors dated April 2020, slide 7. [DOC ID: 4128]

¹⁴²⁵ [...] information memorandum for investors dated April 2020, slide 28. [DOC ID: 4128]. See also, in the same document, slide 38. [DOC ID: 4128]

¹⁴²⁶ The average vessel size used to compute the forecasts is the one of LLNGCs contracted in 2016-2020.

Commission notes that the demand forecast from Clarksons for 2021-2025 would represent an increase of about 14 vessels per year as compared to the average level of orders over the 2016-2020 period. The more pessimistic scenario, from MSI, corresponds to a slightly lower level of orders as in 2016-2020. As regards forecasts for 2026-2030, Clarksons estimates a yearly average of 38 vessels, while MSI an average of [...] vessels. Moreover, the Commission notes that Clarksons forecasts a peak in LLNGC demand during the period 2021-2025. As of 2026-2030, Clarksons forecasts that LLNGC demand will remain in line with the average orders in 2016-2020, whereas MSI estimates a decrease.¹⁴²⁷

Table 34 LLNGCs historical and projected demand

	deliveries	deliveries	orders	orders
	2015-2019	2016-2020	2015-2019	2016-2020
Demand (# vessels)	36	37	33 ¹⁴²⁸	38

	orders Clarksons	orders MSI	orders Clarksons	orders MSI
	forecast 2021-2025	forecast 2021-2025	forecast 2026-2030	forecast 2026-2030
Demand (# vessels)	52	35	38	21

Source: Commission's computation on the basis of Clarksons' vessels data submitted by the Notifying Party in response to RFI 67, Clarksons and MSI order forecasts submitted on 14 October 2021.

(831) Moreover, in addition to Clarksons' and MSI's forecasts, the positive outlook of the LLNGCs market is further confirmed by looking at the current orderbook and by putting in perspective the new orders that are appearing in the market. **Table 35** below shows the current orderbook for the shipbuilders active in LLNGCs.¹⁴²⁹ Year 2021 will see the shipyards busy in delivering a record number of [...] LLNGC. In addition, [...] LLNGCs are already expected to be delivered in 2022.

Table 35 LLNGCs annual deliveries and current orderbook

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HHI	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
DSME	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
SHI	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
CSSC Hudong	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Others	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...] ¹⁴³⁰	[...]	[...]
Total	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]

Source: Commission's calculations based on Clarksons data submitted by the Notifying Party in response to RFI 67, AnnexQ38.

(832) In its email to the Commission of 28 January 2021, the Notifying Party claimed that the fact that [...] did not exercised [...] options with HHI (and that [...] allegedly did so also with DSME, SHI and CSSC (Hudong)), would show that the LLNGC market

¹⁴²⁷ The Notifying Party's reply to RFI 53, Clarksons forecasts.

¹⁴²⁸ In the previous version of the Clarksons data in response to RFI 49, two more vessels were recorded as ordered in 2019. Thus, according to the updated version of the data 32,6 vessels were ordered in 2015 - 2019 whereas in the previous version of the data used in the SO, the average was 33.

¹⁴²⁹ [...].

¹⁴³⁰ [...].

and related upstream projects would be delayed due to market uncertainty and Covid-19.¹⁴³¹ The Commission does not find that the facts set out below support the Notifying Party's claims. On the contrary, the Commission considers that there are sizeable orders coming to the market in the medium and long term. Among those, two are particularly important.

- (833) First, [...] confirmed to the Commission in March 2021 that, although [...] had not exercised any options at the time, [...] intended to start doing so as soon as practicable.¹⁴³² In this context, [...] confirmed that [...] would have to select ship owners in a competitive process that had yet to be completed.¹⁴³³ [Customer] then informed the Commission that [...] has exercised, so far, a total of [...] options for [...] membrane conventional LLNGCs: [...] with CSSC (Hudong), [...] and [...] with SHI.¹⁴³⁴ [...] confirmed that “[...] [...] intends to continue exercising purchase options under the SSAs as soon as practicable [...]].”¹⁴³⁵ [...] also informed the Commission that no ship owner has been selected or shortlisted yet and that [...] is still in the process of selecting ship owners by way of competitive tendering.¹⁴³⁶ The Commission notes that, given that, as explained in **Section 7.1** and **Section 8.3.6**, EEA customers account for about 50% of LLNGCs orders, it cannot be excluded that a significant portion of the selected shipowners will be based in Europe. This is corroborated by public sources: in one recent press article, it is stated that there has been a “[...] release of a tender for ship owners to bid on [...] charter agreement in the history of the industry. The tender, which was issued to a [...] group of LNG ship owners, will select world-class ship owners for the long-term time charter of carriers tied to the aggressive expansion of LNG output by [...] which will nearly double production by 2027.”¹⁴³⁷ [...] confirmed [...] has reserved additional capacity for [...] membrane conventional LLNGCs at CSSC (Hudong), [...] membrane conventional LLNGCs at HHI, DSME and SHI, for a total of more than [...] additional slots for deliveries over/from the 2024-2027 period.¹⁴³⁸ Second, [...] ¹⁴³⁹ [...] and SHI-Zvezda¹⁴⁴⁰ for the delivery of [...] ice-breaking (Arc7) LLNGCs. If [...]’s order from HHI, DSME, SHI, and CSSC were to fully materialise they would account, together with the [...] ice-breaking (Arc7) LLNGCs ordered by [...], for a total of more than [...] LLNGCs. Assuming an average level of deliveries of over [...] LLNGCs per year these [...] orders alone would represent more than [...] years of demand for the LLNGC shipbuilding market. In addition, the following (firm and

1431 The Notifying Party's email to the case team “Updates on developments in the LLNGC market” dated 28 January 2021.

1432 See [...] reply to question 2(b) of RFI 4 to [...] dated 3 March 2021. [DOC ID: 4895]

1433 See [...] reply to question 2(c) of RFI 4 to [...] dated 3 March 2021. [DOC ID: 4895]

1434 [...] reply to question 1(a), (b), (c) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 4895]

1435 [...] reply to question 2(b) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 4895] See also minutes of the conference call with [...] dated 19 October 2021, paragraph 5. [DOC ID: 5896]

1436 [...] reply to question 3 of RFI 5 to [...] dated 11 October 2021. [DOC ID: 4895]; minutes of the conference call with [...] dated 19 October 2021, paragraph 4. [DOC ID: 5896].

1437 [...].

1438 See [...] reply to question 2, 2(a) 2(c), 2(d) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 4895]

1439 The Notifying Party's reply to question 1 of RFI 49, Annex Q1a – revised. See also the Notifying Party's reply to RFI 55 and RFI 56. In the Notifying Party's reply to question 5 of RFI 56, the Notifying Party explains that [...]. See also the Notifying party's reply to RFI 58. See also the Notifying Party's reply to question 15 of RFI 67, Annex Q.15.

1440 [...]’s reply to question 6 of the Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]; [...] reply to question 2 of the Commission RFI to [...] dated 8 September 2020. [DOC ID: 4022]. See also the Notifying Party's reply to RFI 55, RFI 56 and RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15.

option) orders should also be taken into account, all happening in the context of ongoing tenders.¹⁴⁴¹

– For DSME: [...].¹⁴⁴²

– For HHI: [...].¹⁴⁴³

– For CSSC: [...].¹⁴⁴⁴

(834) In terms of 2020 orders,¹⁴⁴⁵ the Commission notes that HHI [...], SHI [...]¹⁴⁴⁶, SHI-Zvezda [...].¹⁴⁴⁷ CSSC appears to have won [...].¹⁴⁴⁸ DSME won, [...],¹⁴⁴⁹ [...].¹⁴⁵⁰ In total, orders for [...] LLNGCs¹⁴⁵¹ were placed in the course of 2020.¹⁴⁵²

(835) In terms of 2021 orders, for the first nine months,¹⁴⁵³ HHI won [...]. DSME won [...]. SHI won [...].¹⁴⁵⁴ [...] ¹⁴⁵⁵ [...] ¹⁴⁵⁶ In total, orders for [...] LLNGCs were placed in the course of 2021 (up to 30 September 2021).¹⁴⁵⁷

(836) Fifth, the above evidence of sizeable orders coming to the market in spite of the COVID-19 pandemic, is also supported by the results of the market investigation carried out in Summer 2020 where all customers that expressed an opinion stated that since the beginning of 2020 they have not cancelled any firm orders of LLNGCs due to COVID-19.¹⁴⁵⁸ By the time they responded to the market investigation, nearly all

¹⁴⁴¹ The Notifying Party's reply to RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15.

¹⁴⁴² The Notifying Party's reply to RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15.

¹⁴⁴³ The Notifying Party's reply to RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15..

¹⁴⁴⁴ [...] reply to question 3 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]. In its reply to question 13 of RFI 67, the Notifying Party submits that CSC (Hudong) these options have been exercised by [...] in June 2021 and that these vessels are not recorded in Clarksons yet. As the purpose of this Section is to show that the LLNGC market present and future outlook is positive, even if the Notifying party were correct, the Commission's assessment would not change.

¹⁴⁴⁵ The Notifying Party's reply to RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15..

¹⁴⁴⁶ The Notifying Party's reply to RFI 58. See also the Notifying Party's Reply to question 15 of RFI 67, Annex Q.15..

¹⁴⁴⁷ The Notifying Party's reply to RFI 58. See also the Notifying Party's Reply to question 15 of RFI 67, Annex Q.15..

¹⁴⁴⁸ [...] reply to question 2 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]; The Notifying Party's reply to RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15..

¹⁴⁴⁹ The Notifying Party's reply to question 15 (a) of RFI 46; the Notifying Party's reply to RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15..

¹⁴⁵⁰ See updated version of Annex Q.15 to RFI 67, submitted by the Notifying Party in an email to the case team of 19 November 2021.

¹⁴⁵¹ The Notifying Party's reply to question 16 of RFI 67, Annex Q.16 and to question 38 of RFI 67, Annex Q.38.

¹⁴⁵² The Notifying Party's reply to RFI 59, Annex Q2. See also the Notifying Party's reply to question 16 of RFI 67, Annex Q.16 and to question 38 of RFI 67, Annex Q.38.

¹⁴⁵³ The Notifying Party's reply to question 15 of RFI 67, Annex Q.15.

¹⁴⁵⁴ Unknown whether firm or options.

¹⁴⁵⁵ Unknown whether firm or options.

¹⁴⁵⁶ The Notifying Party's reply to RFI 58. See also the Notifying party's Reply to question 15 of RFI 67, Annex Q.15.

¹⁴⁵⁷ The Notifying Party's reply to question 16 of RFI 67, Annex Q.16 and to question 38 of RFI 67, Annex Q.38.

¹⁴⁵⁸ Replies to questions 1 and 6 of Questionnaire Q11 to Customers. [DOC ID 3835]; [...] is not counted in as none of its orders could qualify as firm orders, at the time of the market investigation carried out in

customers that expressed an opinion explicitly stated that since the beginning of 2020 they have not asked any shipbuilder to delay any firm orders of conventional LLNGC due to COVID-19.¹⁴⁵⁹ None of the customers that expressed an opinion explicitly stated that since the beginning of 2020 they have asked shipbuilders to delay any firm orders of large FSRUs due to COVID-19.¹⁴⁶⁰ Moreover, nearly all customers that expressed an opinion equally stated that, since the beginning of 2020, they have not cancelled any options on orders for conventional LLNGCs due to COVID-19.¹⁴⁶¹ One of these customers stated that “[t]he Covid-19 impact together with somewhat difficult market conditions have caused issues across the industry and indirect challenges to most if not all major projects but it is not accurate to say that any option which has not been exercised is due directly to Covid-19”.¹⁴⁶² The same customer clarified that it “[...] currently does not expect such delays to be significant and confirms its intention to go ahead with the orders”.¹⁴⁶³ None of the customers that expressed an opinion stated that, since the beginning of 2020, they have cancelled options on orders for large FSRUs due to COVID-19.¹⁴⁶⁴ A majority of customers that have expressed an opinion also stated that, since the beginning of 2020, they have not asked any shipbuilder to extend any options of conventional LLNGCs due to COVID-19.¹⁴⁶⁵ None of the customers that have expressed an opinion stated that, since the beginning of 2020, they have asked any shipbuilder to extend any options of large FSRUs due to COVID-19.¹⁴⁶⁶ Nearly all customers that expressed an opinion further stated that, since the beginning of 2020, they have not experienced the cancellation of any LLNGC tenders in which they were involved, due to COVID-19.¹⁴⁶⁷ In terms of pre- vs post-COVID-19 projected demand, only four customers expressed a meaningful opinion: of these [...] customers, only one anticipates a decrease in its projected demand for conventional LLNGCs until 2022. [...] customers estimate an increase in terms of their projected demand for conventional LLNGCs for 2020, while the last customer left foresees no change.¹⁴⁶⁸ For large FSRUs, one customer estimates an increase in its projected demand until 2022, [...] customers foresee no changes and one customer foresees a decrease.¹⁴⁶⁹

- (837) Sixth, customers’ feedback is also confirmed by the Parties’ [...] competitor, which explicitly stated that [...] have not experienced any cancellations or delays of LLNGCs orders.¹⁴⁷⁰ In particular, [...].¹⁴⁷¹ [...].¹⁴⁷²

Summer 2020 on the alleged impact of COVID: see [...] reply to question 1 of RFI to [...] dated 28 July 2020. [DOC ID: 3922]

¹⁴⁵⁹ Replies to question 2 of Questionnaire Q11 to Customers. [DOC ID: 3835] [...] reply to question 15 of Commission RFI to [...] dated 28 July 2020. [DOC ID: 3922]

¹⁴⁶⁰ Replies to question 7 of Questionnaire Q11 to Customers. [DOC ID: 3835]

¹⁴⁶¹ Replies to question 3 of Questionnaire Q11 to Customers. [DOC ID: 3835] [...] reply to question 15 of Commission RFI to [...] dated 28 July 2020. [DOC ID 3922]

¹⁴⁶² [...] reply to question 15a of Commission RFI to [...] dated 28 July 2020. [DOC ID 3922]

¹⁴⁶³ Agreed non-confidential minutes of the call with [...] dated 16 July 2020, paragraph 8. [DOC ID: 4101]

¹⁴⁶⁴ Replies to question 8 of Questionnaire Q11 to Customers. [DOC ID: 3835]

¹⁴⁶⁵ Replies to question 4 of Questionnaire Q11 to Customers. [DOC ID: 3835] [...] reply to question 15 of Commission RFI to [...] dated 28 July 2020 [DOC ID 3922]

¹⁴⁶⁶ Replies to question 9 of Questionnaire Q11 to Customers. [DOC ID: 3835]

¹⁴⁶⁷ Replies to questions 5 and 10 of Questionnaire Q11 to Customers. [DOC ID: 3835].

¹⁴⁶⁸ Replies to question 11 of Questionnaire Q11 to Customers. [DOC ID: 3835].

¹⁴⁶⁹ Replies to question 11 of Questionnaire Q11 to Customers. [DOC ID: 3835].

¹⁴⁷⁰ [...]. [DOC ID: 3686] [...] reply to question 23 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁴⁷¹ [...].

¹⁴⁷² Minutes of a conference call with [...] held on 14 August 2020, paragraph 13. [DOC ID: 4034]

- (838) Seventh, as explained in this Section the Commission considers that the market situation has not significantly changed since the market investigation of Summer 2020 given the number of orders recorded in 2020 and the increasing market demand for LLNGCs recorded in 2021, as described above in this Section and as also shown in **Section 8.3.1** and **Section 8.3.7**.
- (839) Eighth, certain internal documents submitted by the Notifying Party [...].¹⁴⁷³ [...].¹⁴⁷⁴ Moreover, an internal document from the business unit of DSME on global economic forecast indicates that already in the short-term LLNGCs outlook [...].¹⁴⁷⁵
- (840) Ninth, the positive outlook of LLNGC demand from Korean shipbuilders, including the Parties, is confirmed by public sources. One article reports that: “*South Korean shipbuilders have won orders one after another in recent months after suffering from a dismal performance in the first half of this year. Expectations are growing that they will continue to win more liquefied natural gas carrier orders in the latter half despite the pandemic. [...] KSOE signed contracts with ship owners [...] for four 174,000 cubic meter LNG carriers [...]. KSOE said discussions were also underway on the other LNG carriers, including for LNG projects in Qatar and Mozambique. [...] The increase in LNG demand will be steep in the future, due to global eco-friendly policies. As Chinese shipbuilders frequently show technical defects or fail to meet delivery schedules on time, Korean shipbuilders’ positions in the LNG carrier market are expected to become stronger*”.¹⁴⁷⁶ Another article refers to “*the stellar performance*” of Korean shipbuilders in July 2020 “[...] largely due to the LNG ship order won by the Hyundai Heavy Industries Group”, which “[...] signed a 1 trillion won deal to build four LNG carriers for shipowners in Europe and Bermuda. KSOE is expected to sign another contract sometime this month to build two more such vessels. [...] Analysts expect overall demand to improve in the second half as Korean shipyards are awaiting LNG vessel orders, including those from Qatar, Mozambique and Russia.”¹⁴⁷⁷ Another article indicates that “[...] [t]he global shipbuilding industry entering a super-cycle for the first time in more than a decade has been enjoying an order boom. The demand for high value-added vessels such as liquefied natural gas (LNG) carriers in which HHI has competitive edge is expected to increase in the second half. [...]”.¹⁴⁷⁸ In another article, it is stated this is the case despite the recent heavy steel price increase: “[f]acing losses due to rising steel prices, all of South Korea’s “Big Three” shipbuilders are expected to raise prices in a drive to improve margins. Demand is strong, orderbooks are filling fast, and it appears to be an opportune time to prioritize the bottom line.”¹⁴⁷⁹

¹⁴⁷³ The Notifying Party’s reply to questions 4 and 5 of RFI 45.

¹⁴⁷⁴ The Notifying Party’s reply to questions 4 and 5 of RFI 45.

¹⁴⁷⁵ The Notifying Party’s reply to question 5 of RFI 45, Annex 5.2.1, “Global Economic Forecast” pages 1, 4-5.

¹⁴⁷⁶ “Korean shipbuilders win consecutive orders despite coronavirus pandemic”, The Korea Herald/Asia News Network, dated 4 August 2020. [DOC ID: 3847]

¹⁴⁷⁷ “Korean shipyards retake global top spot in July with pricey LNG vessels, Korean Investors, dated 11 August 2020. [DOC ID: 3848]

¹⁴⁷⁸ “HHI’s employee share allotment oversubscribed, raising hope for successful debut”, pulse News Korea dated 1 September 2021. DOC ID: 5738.

¹⁴⁷⁹ “Report: With full orderbooks, Korean Shipbuilders Plan to raise Prices”, The Maritime Executive dated 3 August 2021. DOC ID: 5735.

- (841) Tenth, such ongoing positive trend is also confirmed by other public sources in which it is reported that the Parties have overachieved their 2021 order targets already in the third quarter of 2021, while SHI was close to it.¹⁴⁸⁰
- (842) Eleventh, [...]¹⁴⁸¹
- (843) Twelfth, the Commission considers that there is also a positive market outlook for Arc7 LLNGCs. Indeed, contrary to what was argued by the Notifying Party,¹⁴⁸² the facts below confirm (i) that customers, HHI, DSME and SHI have an interest in ice-breaking LLNGCs (Arc7) and (ii) the positive market outlook for these vessels demand for the following reasons.
- (844) First, as explained in **Section 8.3.8.3 (B) c)**, both HHI and DSME bid for the [...], showing an interest in and capability of both HHI and DSME to [...]. Moreover, that HHI (and not only DSME)¹⁴⁸³ participated in tenders for Arc7 LLNGCs in recent years (therefore showing HHI's interest and HHI's capability of building Arc7 LLNGCs) is also confirmed by information provided by the Notifying Party.¹⁴⁸⁴ In any event, the Commission notes that [...] ¹⁴⁸⁵ [...] ¹⁴⁸⁶ [...] ¹⁴⁸⁷ [...], ¹⁴⁸⁸ [...].¹⁴⁸⁹
- (845) Second, the demand for Arc7 LLNGCs has been increasing in the past two years. Indeed, [...] ordered [...] in 2019.¹⁴⁹⁰¹⁴⁹¹ Subsequently, [...] ordered [...] more Arc7 LLNGCs from [...] in 2020.¹⁴⁹² Moreover, as previously explained, [...] ordered [...]

¹⁴⁸⁰ S. Korea's top 3 shipyards overachieve annual order target, Pulse News Korea, dated 24 September 2021. DOC ID: 5789; See also "Shipbuilders have fat order books for 2021", Korea JoongAng Daily dated 20 September 2021. DOC ID: 5782; See also "DSME Attains Annual Order Goal", Business Korea dated 15 September 2021. DOC ID: 5788.

¹⁴⁸¹ [...].

¹⁴⁸² [...].

¹⁴⁸³ Contrary to what argued by the Notifying Party in its reply to question 11 of RFI 67, [...]’s alleged participation in an Arc7 LLNGC tender does not show, for the reasons outlined in **Section 8.3.4.2** that [...] is capable of building these vessels.

¹⁴⁸⁴ The Notifying Party's reply to question 3 of RFI 49. See also the Notifying Party's reply to question 10 of RFI 67.

¹⁴⁸⁵ The Notifying Party's reply to RFI 59, Annex Q3v1. See also the Notifying Party's reply to question 26 of RFI 67, Annex Q.26.1.

¹⁴⁸⁶ The Notifying Party's reply to RFI 59, Annex Q3v1. See also the Notifying Party's reply to question 26 of RFI 67, Annex Q.26.1.

¹⁴⁸⁷ The Notifying Party's reply to RFI 62.

¹⁴⁸⁸ Internal email containing comments on HHIH's Oslo office report on an Arc7 bid of 17 February 2020.

¹⁴⁸⁹ The Notifying Party's reply to question 7 of RFI 45, Annex Q 7.1.30, page 2.

¹⁴⁹⁰ Contrary to what argued by the Notifying Party in its reply to question 11 of RFI 67, even if the [...] Arc7 LLNGCs would no longer be deployed to that region (which remains to be seen), this would not invalidate the Commission's assessment on the fact that demand for Arc7 LLNGCs has been increasing in the past two years. Moreover, the Commission notes that and that this would not invalidate the Commission's assessment that these orders confirm the positive market outlook for these vessels demand either. Indeed, as acknowledged by the Notifying party itself, these vessels may be deployed to other LNG projects. The Commission notes that, contrary to what argued by the Notifying Party, there is no evidence that such alleged re-deployment would translate into a decrease of Arc7 LLNGCs demand.

¹⁴⁹¹ [...] reply to question 1 of Commission RFI to [...] dated 11 September 2020. [DOC ID: 4047] See also the Notifying Party's reply to question 5 of RFI 46, Annex Q5 (updated). See also the Notifying Party's reply to RFI 59, Annex Q2. Clarksons database submitted by the Notifying Party in response to RFI 59, [...]. See also the Notifying Party's reply to question 16 of RFI 67, Annex Q.16.

¹⁴⁹² [...] reply to question 2 of Commission RFI to [...] dated 11 September 2020. [DOC ID: 4047] Clarksons database submitted by the Notifying Party in response to RFI 59, [...]. See also the Notifying Party's reply to question 16 of RFI 67, Annex Q.16.

more Arc7 LLNGCs from [...] in 2020.¹⁴⁹³ Moreover, contrary to what argued by the Notifying Party,¹⁴⁹⁴ there is no evidence that the alleged delay of the [...] and [...] project may entail the conversion of these LNG projects to non-LNG production facilities as well as there is no evidence that this would necessarily entail a decrease in Arc7 LLNGCs demand.

- (846) Third, as explained in **Section 8.3.3**, public sources and internal documents of the Parties seem to confirm that demand for Arc7 LLNGCs is likely to stay positive or even to increase in the future. This is also confirmed even by more recent public sources and seems to be due to the increasing importance of the Northern Route and of a new generation of Arc7 technology. In Rosatom’s press release, it is stated that “[...] *[i]n the period from 2023 to 2025, [...] plans to commission 18 new icebreaking gas carriers [...]*”.¹⁴⁹⁵ In the same press release, it is also stated that “[...] *[t]he Northern Sea Route can and must become Russia's most important transport artery, cutting the sea route from Europe to Asia by more than a third. In 2020, almost 33 million tons of cargo were transported along the Northern Sea Route, including more than 18 million tons of liquefied natural gas. Over the past five years, freight traffic has increased almost five fold. But the potential of the Northern Sea Route is much greater. In accordance with the decree of the President of the Russian Federation, the traffic along the Northern Sea Route must increase to 80 million tons a year by 2024. This task can be achieved by increasing the period of Arctic navigation [...]*”.¹⁴⁹⁶ In an article from the specialised press, it is stated that “[b]y 2030 *[Novatek] aims to rely on a fleet of up to 50 vessels to ship its LNG*”.¹⁴⁹⁷ In the same article, it is stated that “[...] *50 Arc7 tankers [are] scheduled to sail in 2030 all year round on the [Northern Sale Route] [...]*”.¹⁴⁹⁸ This is also confirmed, contrary to what is argued by the Notifying Party,¹⁴⁹⁹ by an internal document of DSME [...].¹⁵⁰⁰ [...].¹⁵⁰¹ [...].¹⁵⁰² [...].¹⁵⁰³
- (847) Moreover, Arc7 LLNGC technology is evolving towards the second generation Arc7 LLNGCs, which will have powerful engines and an optimised hull shape allowing for significant fuel consumption savings.¹⁵⁰⁴ As explained by another public source,

¹⁴⁹³ [...] reply to question 6 of the Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053] See also the Notifying Party’s reply to RFI 55, RFI 56 RFI 58. Clarksons database submitted by the Notifying Party in response to RFI 59, [...]. See also the Notifying Party’s reply to question 16 of RFI 67, Annex Q.16.

¹⁴⁹⁴ The Notifying Party’s reply to question 11 of RFI 67.

¹⁴⁹⁵ Rosatom’s press release “Arctic gas carrier completes experimental voyage along Northern Sea Route” dated 18 February 2021. [DOC ID: 5079]

¹⁴⁹⁶ Rosatom’s press release “Arctic gas carrier completes experimental voyage along Northern Sea Route” dated 18 February 2021. [DOC ID: 5079]

¹⁴⁹⁷ “A New Dawn for Arctic Shipping – Winter Transits on the Northern Sea Route” dated 19 January 2021, page 6. [DOC ID: 5080]

¹⁴⁹⁸ “A New Dawn for Arctic Shipping – Winter Transits on the Northern Sea Route” dated 19 January 2021, page 9. [DOC ID: 5080]

¹⁴⁹⁹ Slide 15 of presentation of Expert deep dive session on 8 March 2021. See also the Notifying Party’s reply to RFI 67, Table 1, footnote 6.

¹⁵⁰⁰ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.76, slide 4.

¹⁵⁰¹ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.76, slide 9. See also The Notifying Party’s reply to question 7 of RFI 67, Annex Q 7.2.9, page 7 of 25 March 2020.

¹⁵⁰² The Notifying Party’s reply to question 7 of RFI 67, Annex Q 7.2.9, page 7.

¹⁵⁰³ High North News, “Novatek To Order Up To 42 New Arc7 LNG Carriers Totaling \$12bn” dated 27 January 2020. [DOC ID: 2990];

¹⁵⁰⁴ “A New Dawn for Arctic Shipping – Winter Transits on the Northern Sea Route” dated 19 January 2021, page 6,7. [DOC ID: 5080].

throughout the development phase of this second generation Arc7 LLNGC technology, the “[...] *concept design was evaluated, improved, and finalised together with DSME [...] to ensure that the new icebreaking LNG carriers are the most efficient solution for transporting natural gas year-round on the Northern Sea Route.*”¹⁵⁰⁵

- (848) Fourth, as explained in **Section 8.3.8.3 (B) c)**, SHI-Zvezda is unlikely to be able to meet entire Russian or entire Arc7 LLNGC demand.
- (849) Indeed, if, on the one hand, SHI-Zvezda’s purely theoretical capacity is limited to [...] LLNGCs a year, SHI-Zvezda has not delivered any LLNGCs yet. Interestingly, the first scheduled deliveries for the [...].¹⁵⁰⁶ Thus, in case of risks of delays (or any other risk), it would be safe to assume that the Russian government would not hesitate, as it already did, to authorise Russian customers to buy directly from South Korea, as Russian customers used to do and have done also in 2020. As clearly stated by [...], “[...] [*customers usually prefer HHI, DSME or SHI when it comes to ordering large LNG carriers [...]*”.¹⁵⁰⁷ This means that, even if SHI-Zvezda was considered as non-Korean (quod non),¹⁵⁰⁸ all or part of Russian demand could directly get back to South Korean shipbuilders, including DSME (and potentially HHIH). This is also confirmed by an internal document of DSME, [...].¹⁵⁰⁹ In any event, as explained in **Section 8.3.8.3 (B) c)** and **Section 8.3.1**, Zvezda is fully dependent on SHI’s know how and technology. This means that ordering from SHI-Zvezda means de facto ordering from South Koreans, in this case from SHI.
- (850) Moreover, the Commission does not exclude that also non-Russian customers will place orders for Arc7 LLNGCs ([...]).

8.3.6.3. Conclusions

- (851) The Commission considers that the evidence referred to in the present **Section 8.3.6** confirms that the current and future outlook of demand for LLNGCs remain positive in spite of the COVID-19 pandemic. For the reasons set out above, the Commission considers that post-Transaction the Parties will not be constrained by a low or decreasing level of demand in the LLNGC market and that this, combined with the Commission’s findings presented in **Section 8.3.2**, **Section 8.3.4** and **Section 8.3.8** will allow the Parties to act to an appreciable extent independently in the LLNGC market post-Transaction.
- (852) The evidence referred to in the present **Section 8.3.6** is also relevant in the context of **Section 8.2** and, in particular, of **Section 8.2.2**. It confirms the Commission’s finding that for the purpose of the assessment of the Transaction the relevant counterfactual in the absence of the Transaction is a situation where there is head to head competition between the Parties in the LLNGC market. The Commission also considers that the evidence presented in this Section confirms its finding that, absent

¹⁵⁰⁵ “DSME to build Six Second-Generation Arc7 LNG Carriers” dated 28 October 2020, page 2. [DOC ID: 5081].

¹⁵⁰⁶ Clarksons database, provided in response to RFI 67, Annex Q38.

¹⁵⁰⁷ Minutes of the call with [...] dated 26 February 2020, paragraph 10.

¹⁵⁰⁸ SHI-Zvezda’s LLNGC capacity is purely theoretical and, SHI-Zvezda has never built any LLNGCs, consistently with the approach taken in **Section 8.3.7.2 (B)**, it has not been counted within SHI’s capacity.

¹⁵⁰⁹ The Notifying Party’s reply to question 7 of RFI 67, Annex Q 7.2.9, page 7. See also the Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.26, slide 9 of 23 July 2020.

the Transaction, DSME would likely continue to exercise an effective competitive pressure in the market for LLNGCs.

8.3.7. *Supply/demand balance*

- (853) In this Section, the Commission sets out its assessment of the supply and demand balance in the worldwide LLNGC market. After analyzing the supply and demand balance in a range of realistic demand scenarios and multiple capacity estimates for the Parties' competitors, the Commission finds that the capacity of the Parties' competitors is not sufficient to effectively constrain the Parties post-Transaction. Therefore, the Commission concludes that the capacity of the Parties' competitors is not sufficient to constrain the merged entity in such a way as to avoid the creation of a dominant position by the merged entity as a result of the Transaction.
- (854) The Notifying Party claims that, in the shipbuilding industry, capacity is the main driver of competition and in this context a key question in assessing the possible effect of the Transaction is the extent to which remaining competitors can serve additional demand should the merged entity attempt to increase prices. In this context, the Notifying Party claims that the Parties' competitors post-Transaction will have sufficient capacity to serve all the demand for each vessel type/class, therefore the merged entity would not be pivotal and would not have any ability to increase prices. Further, even in those instances where some ability could be established, the merged entity would not have the incentive to reduce output as such a strategy would not be profitable.
- (855) The Commission notes that the argumentations proposed by the Notifying Party in relation to the role of capacity to dispel anticompetitive effects of the Transaction implicitly make some assumptions on the mode of competition that characterizes the shipbuilding industry. These underlying assumptions can be summarized as follows. First, products are considered homogenous; second, firms compete with each other on price; third, customers will instantly switch all their demand to the firm offering the lowest price, and firms are able to supply them up to the point where they reach their capacity constraints; fourth, each shipbuilder has a fixed level of production that is known by its competitors; and fifth, as competitors' orderbooks fill up, the competitors do not raise their prices. However, as explained in **Section 8.3.2.2 (A)**, the Commission considers that the market for LLNGCs is characterized by some distinctive features that reduce the role that capacity plays in driving competition outcomes.
- (856) Of particular relevance in this context is that LLNGCs are not homogenous products but rather differentiated. As explained in **Section 7.1.1** customers do not consider all shipbuilders as equally valid alternatives in terms of all relevant parameters of competition. This is because vessels are neither identical in terms of technical or technological specifications nor of similar quality. Thus, ordering from a different shipbuilder (or even moving all demand away from the merged entity should customers experience a deterioration in the commercial terms) would not be an option because each order is project specific, because it would be too costly (due to customers' own or their charterers' commercial preferences), or because customers are not active in a market that requires them to be guided by security of supply considerations.
- (857) As a result, deviations from the above assumptions on the mode of competition imply that the role of capacity of the Parties' competitors is less important than depicted by the Notifying Party. In turn, this calls into question the conclusions that can be reached from the application of the analysis proposed by the Notifying Party.

For example due to product differentiation customers may be willing to order only from a very limited set of shipbuilders. Product differentiation, as explained in **Section 7.1.1.2**, relates to the LLNGC type or use a quality dimension but also to different technical/technological solutions that each shipbuilder may offer and on which customers may have different preferences. This means that the capacity held by shipbuilders that are not considered as an alternative would not play a sufficient or a significant role in determining the competitive outcomes.

- (858) In addition, competitors' capacity may not be entirely available at any given point in time when an order is made, for example if some capacity has already been booked by previous orders. Likewise, shipbuilders may not know which level of capacity the other shipbuilders have available when competing for an order. The Commission notes that the Notifying Party admits that knowledge about the balance between demand/capacity is often not readily available when it says that: [...].¹⁵¹⁰ Indeed, if competitors only "slowly" obtain information on the supply/demand balance it means that competitive outcomes may very well deviate from the mechanism described by the Notifying Party. Similarly, (unobserved) variations in the level of spare capacity may also imply that some shipbuilders may not bid for some orders or may bid less aggressively or offer a longer delivery time. These factors may also determine the competitive outcome and reduce the role that capacity plays as a driver of competition outcomes.
- (859) As a result, an analysis of the balance between expected demand and competitors' capacity would not be able on its own to conclusively exclude whether there will be scope for raising prices after the Transaction.

8.3.7.1. The Notifying Party's proposed methodology to measure capacity and spare capacity

- (860) The Notifying Party submitted a detailed analysis assessing the impact of the Transaction on the balance between supply and demand in the shipbuilding industry overall and specifically in the LLNGC market.¹⁵¹¹ This analysis proposes a methodology to estimate the shipbuilding capacity of the Parties and their competitors. The resulting capacity estimates are then compared to certain scenarios of demand levels to then compute an index, called residual supply index (RSI), whereby a ratio is computed between the capacity of the Parties' competitors and expected demand.¹⁵¹²
- (861) In this Section, the Commission presents the Notifying Party's proposed methodology and formulates some critical observations. These observations should then be considered when interpreting the results of the capacity estimates and when assessing the balance between supply and demand, also by means of the proposed RSI analysis.
- (A) The methodology originally proposed by the Notifying Party
- (862) As a preliminary remark, the Commission considers that the comparison of overall supply and demand is not in itself determinative to discard possible competition concerns in the LLNGCs market, where products are not homogenous. The

¹⁵¹⁰ Response to the SO paragraph 974.

¹⁵¹¹ Form CO, paragraphs 856-950; Form CO, Annex CS g.46 submission of 3 December 2019.

¹⁵¹² This ratio is typically computed to measure market power in markets where capacity is a relevant factor driving competition among firms. A ratio above one indicates that the capacity in the hands of the rivals is enough to supply all the market demand. A ratio below one conversely indicates that the capacity of the analysed party (or parties) is pivotal to satisfy the entire demand indicating the presence of some degree of market power.

Commission considers that capacity, while informative, is only one among various factors relevant to the assessment of the dynamics of competition in the LLNGCs market. It is necessary also to take the differentiation of the products offered by different suppliers into account. As a hypothetical example, it would not be correct to dismiss concerns on the grounds that a competitor has ample spare capacity if said competitor is only producing a type of vessel which is not considered a close substitute by an important share of customers.

- (863) In the current case, and in particular in light of the high combined market shares and the structural change in the market that the Transaction would bring, it would not be appropriate to dismiss concerns solely on the unfounded basis that for the immediate future, the demand would temporarily fall below capacity. In any event, the Commission considers that even if the LLNGCs market were to be characterised by features of price competition in homogeneous goods as argued by the Notifying Party (*quod non*), then also under this extreme and theoretical hypothesis the Transaction would still increase significantly the market power of the merged entity and its ability to increase prices.
- (864) In the methodology proposed by the Notifying Party, the first step of the estimation of capacity consists in identifying the capable shipyards, that is, those shipyards that have the capabilities to build a particular vessel type of a certain size. Capable shipyards are defined as those shipyards that (i) since 2004 have received orders for vessels of the type and size belonging to the relevant class or (ii) since 2004 have built vessels of that size (even if of different type) and another shipyard of the same group has the experience of building the same type of vessel (even if not the same size). Shipyards that did not receive orders nor delivered vessels (in any vessel class) in the past three years are considered “inactive” and discarded from the analysis.
- (865) In the second step, the methodology estimates the *Base Capacity* of the capable shipyards. The *Base Capacity* is determined according to the observed maximum annual output, measured in CGT, since 1999 of each shipyard in the relevant size categories (or categories with higher size requirements) even if not of the same vessel types.¹⁵¹³
- (866) Certain assumptions are made by the Notifying Party in step two. First, it assumes that shipyards do not reduce their capacity over the considered years and that, even if they mothball it, they can reactivate it quickly.¹⁵¹⁴ Further, the Notifying Party claims that the maximum output observed in a single year is a conservative estimate of the shipyard’s current capacity because capacity cannot be less than the observed output and may even be underestimated because it cannot be excluded that even in the year of maximum output the shipyard did not fully employ its capacity.
- (867) The second main assumption made by the Notifying Party in step two is that capacity is fungible between types of vessels once controlling for size. This means that the capacity used to build a vessel of a certain size and type can be used to build any other vessel type of the same or smaller size. For example, if a shipyard has built small LNGCs (so it allegedly has the necessary know-how under condition (i) or (ii)

¹⁵¹³ The assumption being that due to supply substitution, a shipyard can produce different vessel types and sizes. In particular, if a shipyard uses its capacity to produce vessels that are of a bigger size than the considered class it is assumed that this capacity could have also been used to produce the vessels in the considered class. If capacity is used to build vessels of a smaller size than this, capacity has been conservatively excluded by the Notifying Party.

¹⁵¹⁴ The RSI analysis excludes only yards that have been totally inactive. If a yard had reduced its capacity, for example by laying off personnel or by dismantling docks and equipment this is not accounted for.

above to build this type of vessel) and a very large bulker, it means that it would also have the capacity to build an LNGC of the size of a very large bulker. Consequently, the capacity employed to build very large bulkers in the past could be theoretically allocated to build LLNGCs whereas this transfer of capacity may not actually take place.

- (868) The third step estimates *Balanced Capacity* for each type of vessel. This is the capacity that a shipyard could dedicate to the construction of the different vessels within a size category taking into consideration that a shipyard normally produces a mix of vessels and would likely keep producing a mix of these vessels also in the future. For each capable shipyard, an average *Typical Employed Capacity* is calculated for each vessel type on the basis of average output for the years 2004-2018. Then the *Typical Shipyard Spare Capacity* is calculated by deducting the aggregated (across all vessel class) *Typical Employed Capacity* of a shipyard from its *Base Capacity*. The *Balanced Capacity* for a vessel type is the sum of the vessel type *Typical Employed Capacity* and the *Typical Shipyard Spare Capacity*.
- (869) The above steps estimate capacity with a historical perspective taking into consideration past capacity utilization. In addition, the Notifying Party also proposes to estimate available capacity taking into consideration that the future demand mix may differ from the past. Under this scenario a further step is added where the *Expected Balanced Capacity* of each shipyard is calculated. For each vessel type, a ratio is calculated between the average annual total output for the years 2004-2018 and the average annual expected output for 2020-2029 based on the forecasts of three industry analysts (Clarksons, IHS Markit and MSI). Applying these ratios to the shipyards historical *Typical Employed Capacity* provides a forecast of future production or *Expected Typical Output*. The *Expected Typical Spare Capacity* of each shipyard is calculated by deducting the Expected Typical Output from the Basic Capacity. The Expected Balanced Capacity for each vessel type in the affected markets is then calculated by adding its *Expected Typical Output* to the *Expected Typical Spare Capacity*.
- (870) In the Response to the Article 6(1)(c) decision, Response to the SOand responses to the First and Second Letters of Facts, the Notifying Party presented some further capacity scenarios changing the following assumptions: assigning track record at the vessel class level; looking back at 10 (instead of 15 years); excluding certain shipyards; and measuring capacity in number of vessels rather than CGT.
- (B) The Commission's view on capacity estimates
- (871) The Commission acknowledges the complexity of computing the capacity of shipbuilders given their multi-product nature. This complexity is particularly significant when assessing capacity at the level of the different vessel types. At the same time, the Commission considers that capacity is not fully fungible across different vessel types and that the assessment of capacity may therefore vary across different markets, especially when it comes to LLNGCs. The Commission is also of the view that shipbuilders have an understanding of their capacity and consider their capacity when making business decisions and for these reasons capacity also plays a role in the competitive dynamics that characterize each shipbuilding market.
- (872) As a result, while it is informative for the competitive assessment to consider the level of capacity of shipyards as measured by the available methodologies, this assessment should also acknowledge the uncertainty around these capacity estimates and complement such estimates with other evidence collected as part of the market investigation.

- (873) Specifically, on the Notifying Party’s proposed methodology to estimate capacity, the Commission formulates the following remarks.
- (874) First, the Commission considers that shipyards’ capabilities to build specialised type of vessels should be assessed on a (much) shorter time frame than the one originally proposed by the Notifying Party (going back to 2004). The large majority of LLNGCs customers confirmed in response to the Commission’s market investigation that when deciding from which shipbuilder to order, they would consider when was the last time the shipbuilder in question had built vessels of the type and size they are looking to order.¹⁵¹⁵ In turn, a large majority of respondents said that they would not consider a shipbuilder who did not build the relevant type and size of vessels for a period of, e.g., 10 years or would have significant reservations in doing so.¹⁵¹⁶ One customer explained that *“10 years out of action is a lot considering the pace at which technology is changing. Furthermore the yard needs to develop certain skill sets and processes that may not be as effective in the first vessels being produced. We have seen that even shorter periods of reduced or not LNGC building activity has a negative impact to the built quality”*.¹⁵¹⁷
- (875) Further, the Commission considers that the assessment of capacity should not only entail a mechanical exercise by which shipbuilders are considered capable of building certain vessels if they were able to do so in the past. Indeed, the assessment of capacity should also consider which shipbuilders are currently active or are expected to be active in the market in question. For these reasons, the selection of capable shipyards should be complemented with the information collected during the market investigation as to include additional shipbuilders that historically have not been active or exclude shipbuilders that were active historically but have in the meantime exited or are not targeting the markets in question anymore, such as the Japanese shipbuilders in the present case.
- (876) Second, shipbuilding capabilities and track record should be assessed at the level of individual shipyards. Shipbuilders explained that their shipyards specialise in different types of vessels according to the available facilities and in order to increase efficiency through scale and experience.¹⁵¹⁸ Shipbuilders also explained that although it is not impossible for shipbuilders to transfer construction of vessel types to other shipyards in their group, it is very complex. One respondent said that *“such production transferring may relate with all aspects from infrastructures to managing systems”*.¹⁵¹⁹ Respondents explained that different shipyards within the same group may not have the necessary equipment or facilities to build the same vessels types and that transfers mean reduced efficiency and increased costs of construction.¹⁵²⁰ One respondent explained that such transfer *“is not impossible but not very efficient from a perspective of workers experience and facility lay-out a certain yard is best suited; switching would lead to inefficiencies and increased costs”*.¹⁵²¹ Another respondent stated that *“it is not impossible to transfer production of certain types of ships to another yard, but it implies loss of scale merit, loss of experience curve*

¹⁵¹⁵ Replies to question 13 of Questionnaire Q7 to Customers. [DOC ID: 3240] Replies to questions 27 and 72 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁵¹⁶ Replies to question 15 of Questionnaire Q7 to Customers. [DOC ID: 3240] Replies to questions 28 and 73 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁵¹⁷ Replies to question 28.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁵¹⁸ Replies to question 11 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵¹⁹ Reply of [...], to question 11 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵²⁰ Replies to questions 12 and 13 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵²¹ Reply of [...], to question 12 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

effect and loss (or diminishing of) close cooperation relationship with some outsource suppliers".¹⁵²² A stakeholder explained that *"the manufacturing know-how is often developed at a specific yard and may not be easily implemented elsewhere."*¹⁵²³ Consequently, the Commission considers that capacity in other shipyards of the same shipbuilders cannot be considered as readily available for the construction of vessels types that a given shipyard has not built before.

8.3.7.2. Assessment of capacity in the LLNGC market

(877) The Commission finds that under the most plausible scenario, the remaining competitors have insufficient capacity to constrain the merged entity. In particular, competitors have insufficient capacity to absorb the entire demand of the market and the merged entity would thus be pivotal for a large share of demand. This assessment requires certain assumptions about the capacity of competitors and the future development of demand. The Commission has considered a range of alternative assumptions and finds that the results are robust in the sense that even if one considered extreme and unlikely assumptions, the merged entity would still be pivotal.

(A) The Notifying Party's views

(878) In the Response to the Article 6(1)(c) decision and the corresponding Annex G.8, the Notifying Party argues that the market for LLNGCs would be characterised by a supply and demand imbalance with supply exceeding demand. Further, the Notifying Party argues that due to the high degree of supply side substitutability in the shipbuilding market, shipbuilders not currently building LLNGCs could use the same capacity to build LLNGCs further increasing such an imbalance.¹⁵²⁴ Moreover, the Notifying Party argues that the overcapacity would be a structural long-term feature of the LLNGCs market and that the market for LLNGCs would continue to be characterised by overcapacity in the future years for the following reasons. First, expectation that the market for LLNGCs will grow in the next five years would not be shared by all third-party industry experts such as MSI or IHS, which both predict a decrease in demand in the next five years (while Clarksons would predict an increase only in 2024).¹⁵²⁵ Second, demand in upstream market for LNG production would not be expected to increase significantly and any new demand resulting from the construction of new LNG plants in the upstream market would be covered by the existing LNGCs and the vessels to be built in the coming years.¹⁵²⁶ Third, the Commission's Article 6(1)(c) decision would have ignored capacity expansion in terms of both already-active LLNGC shipbuilders and new entrants.¹⁵²⁷ Fourth, there would be no bottlenecks in the building process of LLNGCs.¹⁵²⁸ Fifth, the RSI analysis would show that the Transaction will not impact capacity in the LLNGCs market.¹⁵²⁹

(879) In the Response to the SO and the corresponding Annex C.25, the Notifying Party contests the Commission's findings that supply and demand in the market for LLNGCs are balanced. They argue that, first, the Commission's finding that supply

¹⁵²² Reply of [...] to question 12 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵²³ Minutes of a meeting with the [...] dated 1 October 2019, paragraph 8. [DOC ID: 3201]

¹⁵²⁴ Response to the Article 6(1)(c) decision, paragraphs 384-386.

¹⁵²⁵ Response to the Article 6(1)(c) decision, paragraphs 389-390; 399-402.

¹⁵²⁶ Response to the Article 6(1)(c) decision, paragraphs 394-396.

¹⁵²⁷ Response to the Article 6(1)(c) decision, paragraphs 403-406.

¹⁵²⁸ Response to the Article 6(1)(c) decision, paragraphs 407-408.

¹⁵²⁹ Response to the Article 6(1)(c) decision, paragraphs 409-421.

and demand are balanced would not be consistent with the market investigation and would be contradicted by market evidence.¹⁵³⁰ More specifically, the Commission's finding that capacity is not as fungible as the Notifying Party claims would be based on a flawed market investigation and is contradicted by market evidence.¹⁵³¹ Furthermore, they claim the Commission's finding that supply and demand are balanced would be further contradicted by third-party industry-reports.¹⁵³² Second, the Commission's finding that the market for LLNGCs will not be characterised by overcapacity in the future would be contradicted by the revised demand forecasts over the 2020-2024 period and the significant uncertainties surrounding demand projections beyond 2025.¹⁵³³ Third, the Parties claim that the Commission's findings that the Parties would become pivotal and control large part of LLNGC market post-Transaction is based on a capacity analysis not in line with the prevailing characteristics of the LLNGC market, particularly because it concludes that the combined capacity of SHI and CSSC would only be sufficient to cover a limited fraction of the total demand for LLNGCs in the future.¹⁵³⁴ Fourth, the Commission's findings that the Parties, post-Transaction, would have the incentives to raise prices is not supported by an economic analysis.¹⁵³⁵ Fifth, the RSI analysis conducted under the appropriate analytical framework would corroborate the finding that the Transaction will not give the Parties the ability to reduce output in order to raise prices as competitors would have sufficient capacity.¹⁵³⁶ Sixth, the Commission would have ignored that customers are not concerned about the impact of the Transaction on capacity and that for this reason and all the above ones the Commission would have failed to establish that the combination of the Parties' respective capacities would give rise to the creation of a dominant position.¹⁵³⁷

- (880) In the Response to the First Letter of Facts, the Notifying Party submits its own corrected pivotality (RSI) calculations, which take into account alternative assumptions. In particular, CSSC's capacity is estimated at [...] (based on historical output) to [...] LLNGCs, while SHI's capacity at [...] (based on the Parties' estimates to preserve the past production mix)¹⁵³⁸ to [...] LLNGCs. The RSI analysis shows that the Parties would not be pivotal post-Transaction to meet the demand for the following reasons. First, a large majority of customers would not be concerned by the expected impact of the Transaction on capacity and slot availability.¹⁵³⁹ Second, the Commission would have incorrectly equated concentrated and reserved capacity to limited or decreased capacity.¹⁵⁴⁰ Third, the Commission would have incorrectly characterised the fungibility of capacity as limited.¹⁵⁴¹ Fourth, the Commission's assessment of supply and demand balance would not be probative.¹⁵⁴² Fifth, the Notifying Party maintains that, in any event, the Commission's assessment would be

¹⁵³⁰ Response to the SO, paragraphs 485-529.

¹⁵³¹ Response to the SO, paragraphs 509-521.

¹⁵³² Response to the SO, paragraphs 522-529.

¹⁵³³ Response to the SO, paragraphs 530-567.

¹⁵³⁴ Response to the SO, paragraphs 568-604.

¹⁵³⁵ Response to the SO, paragraphs 605-616 and Annex C.25, section 4.

¹⁵³⁶ Response to the SO, paragraphs 617-628.

¹⁵³⁷ Response to the SO, paragraphs 629-636.

¹⁵³⁸ **Sections 8.3.4.1 and 8.3.4.2** above discuss in detail the LLNGC capacity of SHI and CSSC.

¹⁵³⁹ Response to the First Letter of Facts, paragraph 118.

¹⁵⁴⁰ Response to the First Letter of Facts, paragraphs 119-122.

¹⁵⁴¹ Response to the First Letter of Facts, paragraphs 123-127.

¹⁵⁴² Response to the First Letter of Facts, paragraphs 150-158.

flawed, as the Parties would have, post-Transaction, no incentive to engage in a strategy that exploits any alleged limited pivotality.¹⁵⁴³

- (881) In the Response to the Second Letter of Facts, in which the Commission had presented the RSI analysis described below, the Notifying Party again submits its own updated RSI analysis, which is based on a different set assumptions regarding both supply and demand forecasts.¹⁵⁴⁴ On the supply side, they assume SHI's capacity is [...] LLNGCs, and CSSC's is [...]. Additionally, they include scenarios that include the capacity of Japanese shipyards. On the demand side they look at forecasts from 2022 to 2026, and assess historical demand using the years 2016-2021. They also consider cases where they remove [...] ships that they attribute to Russian captive demand.¹⁵⁴⁵ The Notifying Party also removes additional ships from their supply estimates and demand forecasted by industry experts Clarksons and MSI as they argue demand from the [...] has already played out.¹⁵⁴⁶
- (882) In addition to the reworked RSI analysis, the Notifying Party voices criticisms on the Commission's supply/demand balance analysis. First, it claims that the commission fails to provide a clear model illustrating the Parties' incentives to raise prices.¹⁵⁴⁷ It additionally calculated the minimum required price increase (MRPI) for a supply reduction strategy to be profitable. Second, it claims that the Commission gives differential treatment to SHI's and CSSC's capacity feedback.¹⁵⁴⁸ Third, it claims that the Clarksons demand forecast is too optimistic.¹⁵⁴⁹ Fourth, it applies a capacity estimation methodology similar to the one applied by the Commission retroactively to earlier periods. When comparing these capacity estimates to the demand in the subsequent five years (using realized orders for years up until 2021, instead of the demand forecasts from the respective times) the Notifying Party shows that both Parties individually would have been pivotal in the past. This, the Notifying Party claims, contradicts the low margins that the Parties realized during those years, invalidating the Commission's methodology.¹⁵⁵⁰
- (B) The Commission's assessment
- (883) The Commission sets out below its assessment of the current and expected balance between supply and demand in the market for LLNGCs and its implication for the competitive assessment. The Commission's assessment and conclusions are based on the evidence collected during the market investigation as well as on its quantitative analysis. However, at the outset, as explained in **Sections 7.1.1, 8.3.2, 8.3.4 and 8.3.8**, the Commission recalls that LLNGCs are not homogenous but differentiated products. The Commission therefore considers that capacity, which, besides being rather balanced, is not as fungible as portrayed by Notifying Party in the LLNGC market, is only one among various factors relevant to the assessment of the dynamics of competition in the LLNGCs market.
- (884) [...].¹⁵⁵¹ [...].¹⁵⁵² [...].¹⁵⁵³

¹⁵⁴³ Response to the first Letter of Facts, paragraphs 159-161.

¹⁵⁴⁴ Response to the Second Letter of Facts, Tables 5-8

¹⁵⁴⁵ Response to the Second Letter of Facts, paragraph 156

¹⁵⁴⁶ Response to the Second Letter of Facts, paragraph 156

¹⁵⁴⁷ Response to the Second Letter of Facts, paragraph 14-16

¹⁵⁴⁸ Response to the Second Letter of Facts, Table 3

¹⁵⁴⁹ Response to the Second Letter of Facts, paragraph 151

¹⁵⁵⁰ Response to the Second Letter of Facts, paragraph 42

¹⁵⁵¹ Response to the Second Letter of Facts, paragraph 175.

¹⁵⁵² [...].

- a) *The outcome of the market investigation and the Commission’s analysis of the interplay between supply and demand*
- (885) The Commission’s market investigation results do not confirm the Notifying Party’s claim that there is ample spare capacity in the LLNGC market, at least to the level of magnitude presented by the Notifying Party as sufficient to exclude the creation of a dominant position by the merged entity. It also does not confirm that capacity is as fungible across vessels types as portrayed by the Notifying Party for the following reasons.
- (886) First, the majority of customers¹⁵⁵⁴ that expressed a meaningful opinion during the market investigation indicate that supply and demand is currently balanced or that is likely to become balanced very soon.¹⁵⁵⁵ For example, a customer stated “*the current supply/demand balance is fairly even between shipbuilders and shipowners [...]*”.¹⁵⁵⁶ This appears to be even more relevant for LLNGCs. For example, a customer stated that “[...] *demand for berths for LNGCs of 160,000 cbm and larger is roughly equal to supply and the market is currently balanced*”.¹⁵⁵⁷
- (887) Second, the Commission notes that even if there were overcapacity (quod non), supply and demand would become balanced if demand were to increase or if capacity were to decrease.
- (888) In that regard, firstly, as explained in **Section 8.3.6** and contrary to what argued by the Notifying Party,¹⁵⁵⁸ demand forecasts have remained relatively consistent, becoming slightly more optimistic over time. In addition, LLNGC demand is likely to remain positive and even to increase in the near future, despite the COVID-19 pandemic. More specifically, one of the Parties’ competitors stated [...].¹⁵⁵⁹ In this context, in response to RFI 53, the Notifying Party provided the Q3 2020 forecasts related to the contracting of LNGCs further updated on 29 March 2021 with the Q1/2021 forecasts. The Notifying Party provided the data for the Q3/2021 forecasts in response to RFI 67. In the SO,¹⁵⁶⁰ the Commission used Clarksons’ forecasts to estimate the likely demand for LLNGCs for the period 2020-2024.¹⁵⁶¹ As shown in **Table 36**, these forecasts have been revised upwards by Clarksons both in Q3/2020 and in Q1/2021. In addition, the average expected orders in the periods 2021-2025 and 2022-2026 were revised upwards in Q3/2020 but subsequently re-estimated at the Q1/2020 level. The demand estimates have been revised upwards again in the Q3/2021 forecasts for the periods 2021-2025 and 2022-2026. This indicates that the

¹⁵⁵³ [...].

¹⁵⁵⁴ Contrary to what argued by the Notifying Party at paragraph 177 of its Response to the Second Letter of Facts, the Commission’s counting of customers’ reply is correct. The Commission also notes that the Notifying Party’s claim that customers would not be well placed to assess supply/demand balance is immaterial. Indeed, as apparent from this Section, the Commission has investigated both sides of the market (demand and supply) and probed the outcome with third-party’s data provided by the Notifying Party and Commission’s calculations on the basis of third-party-data provided by the Notifying Party.

¹⁵⁵⁵ Replies to question 63 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁵⁶ Replies to question 63 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁵⁷ Replies to question 63 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁵⁸ Response to the SO, paragraphs 537-549.

¹⁵⁵⁹ Minutes of a conference call with [...] held on 14 August 2020, paragraph 13. [DOC ID: 4034]

¹⁵⁶⁰ SO, Section 7.4.1.3.b.iv).

¹⁵⁶¹ Since the Clarksons’ forecast concerns the LNGC class of +40,000m³, the forecast for the size higher than 145,000m³ (LLNGCs) has been computed considering the proportion of the vessels above 145,000m³. among the vessels above 40,000m³ contracted since 2015.

outlook for LLNGC demand remains strong, even when looking at the most up-to-date forecasts.

Table 36 Variation in average annual demand for LNG carriers 40 000m³, Clarksons estimates (contracting)

CGT million	average 2020-2024	average 2021-2025	average 2022-2026
Q1 2020 estimates	3.8	3.9	3.9
Q3 2020 estimates	4.6	4.3	4.3
Q1 2021 estimates	4.1	3.9	3.8
Q3 2021 estimates		4.6	4.1
difference Q3 2021-Q1 2020		0.7	0.2

Source: Commission computation on the basis of Clarksons data submitted on 29 March 2021 and in response to RFI 67, 53 and 17.

(889) [...].

Table 37 Variation in average annual demand for LNG carriers 5+ Dwt, MSI estimates (contracting)

CGT million	average 2020-2024	average 2021-2025	average 2022-2026
Q1 2020 estimates	2.7	2.9	2.9
Q3 2020 estimates	3.0	2.9	2.9
Q1 2021 estimates	2.8	2.6	2.6
Q3 2021 estimates	3.4	3.2	3.0
difference Q3 2021-Q1 2020	0.7	0.3	0.1

Source: Commission computation on the basis of MSI data submitted on 29 March 2021 and in response to RFI 67, 53 and 17.

(890) In that regard, the positive forecast for LLNGCs demand is confirmed by the market investigation results, which indicate that a majority of customers that expressed an opinion expect demand for LNGCs to increase in the next 5 years.¹⁵⁶² On this point, a customer of LLNGCs stated “the current order book of about [...] vessels has about [...] vessels open without a charter. The expected growth in the LNG production side will be sufficient to absorb these vessels. After that the new projects (greenfield or expansion) currently under development will be coming to market looking for vessels

¹⁵⁶² Replies to questions 64 and 71 of Questionnaire Q3 to Customers. [DOC ID: 3236]

*in the late 2022-2024 time frame. This will create demand for about another [...] ships over that period. At some point, the existing older LNG vessels, which are now both small and with inefficient power plants, will be up for replacement. This will add to the figures above as these older vessels come off their contracts and are replaced with new modern tonnage. [...] [T]he replacement ratio is likely to be about 1.6 new ships to replace 2 old vessels”.*¹⁵⁶³

- (891) Similarly, a majority of shipbuilders that expressed an opinion during the market investigation on how the demand for LLNGCs would have evolved in 5 years consider that demand for LLNGCs will either stay the same or increase in the next 5 years.¹⁵⁶⁴ One of the Parties’ competitors stated that [...].¹⁵⁶⁵ This was also confirmed by the [...]: “[...] capacity is becoming tight and there might even be a shortage in capacity. [...] LNG demand growth stems from structural energy mix changes (as opposed to cyclical as is the case for some other markets). It is linked to the fact that LNG is the winner of the energy market thanks to the shift towards greener economy”.¹⁵⁶⁶
- (892) Third, as also evident by the finding in **Sections 8.3.1** and **8.3.2**, namely that the average number of bidders in each multilateral tender has decreased over time, the Commission considers that the competitive landscape has now changed (as there used to be more shipbuilders active in the market),¹⁵⁶⁷ and that, as a consequence, capacity is, to a significant extent, going to be more and more concentrated in the hands of HHIH, DSME and SHI. This is further supported by the market investigation, which showed that there is a reduction in the number of shipbuilders that are expected to offer LLNGCs in the future years. In particular, the market investigation showed that several Japanese shipbuilders have de-facto withdrawn from the market. This development is then likely to impact the supply/demand balance as it reduces the number of LLNGCs that could potentially meet the demand. Indeed, [...], which has reserved slots for construction of more than [...] LLNGCs¹⁵⁶⁸ for delivery over/from the [...] period stated that “[...] ship orders tend to come in waves, and when there is a lack of orders for a few months, some industry observers may argue that there is excess capacity. However, it is difficult to deny the fact that the commercially competitive capacity is concentrated in the hands of the big 3 Korean shipbuilders. In [...]’ view, overcapacity in the LNG shipbuilding market is much less of a concern than overconcentration. Even if there are arguably periods of excess capacity, this does not mitigate [...] concerns about supplier market power caused by a further concentration of shipbuilding capacity [...]”.¹⁵⁶⁹ Further, as explained in more detail in **Section 8.3.8**, there was no entry in the market for LLNGCs in the past 10 years, with the only exception being JMU (which has now exited the market) and SHI-Zvezda, although SHI-Zvezda is totally dependent on SHI’s know-how and technology, it is not yet proven that SHI-Zvezda will be capable of delivering a LLNGC and in any case its production capacity is likely to be dedicated to serve captive Russian demand.

¹⁵⁶³ Replies to question 64 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁶⁴ Replies to question 134 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁵⁶⁵ Minutes of the call with [...] dated 14 August 2020, paragraph 13. [DOC ID: 4034].

¹⁵⁶⁶ Minutes of the meeting with [...] dated 1 October 2019, paragraph 10. [DOC ID: 3201]

¹⁵⁶⁷ **Sections 8.3.4** and **8.3.8** of this decision.

¹⁵⁶⁸ Minutes of the call with [...] dated 16 July 2020, paragraph 3. [DOC ID: 4101] See also [...] reply to question 2(c) of RFI 4 to [...] dated 3 March 2021. [DOC ID: 4895] See also [...] reply to questions 1 and 2(c) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 4895]

¹⁵⁶⁹ [...] reply to question 2 of Commission RFI to [...] dated 28 July 2020 [DOC ID: 3922]

- (893) Fourth, as explained in **Sections 8.3.6** and **8.3.4.2**, the Commission notes that, in this context, a substantial part of LLNGC capacity is going to be booked at each of HHHI, DSME, SHI and CSSC (Hudong) by, amongst others, [...]’s sizeable reservation of options for more than [...] LLNGCs with HHI, DSME, SHI and CSSC.¹⁵⁷⁰ [...] of HHI, DSME and SHI and close to [...] % of CSSC’s LLNGC capacity for deliveries over/from the [...].¹⁵⁷¹ This statement has been subsequently confirmed by [...].¹⁵⁷² The Commission considers that each of these four shipbuilders obtained the number of options it actually bid for as a function of its actual capacity. This is confirmed by [...], which explained: “[c]ustomer’s procurement process is such that when a final bid is submitted by a tenderer, customer either accepts the entire bid, does not award to that tenderer or asks the tender to re-submit a better bid if it can. The process does not generally allow [...] to award a contract for only part of or more than what was actually offered [...]. In this case, the final bids (number of slots) offered by the shipbuilders based on their own value considerations met [...] requirements and were therefore accepted”.¹⁵⁷³
- (894) Fifth, in the context of strong demand and few suppliers, the Commission notes that in recent press articles, it is reported that HHI and DSME have overachieved their 2021 order targets already at the end of the third quarter of 2021, while SHI was close to it. In particular, with respect to HHI: “KSOE secured [...] 125.9% of the full-year USD 16.75bn target (119.1% of shipbuilding target achieved). [...] [T]he order backlog grew to USD 33.08bn (end-August), including USD 28.27bn for shipbuilding and USD 1.83bn for offshore. Based on the company’s revenue guidance, KSOE has secured 2.5 years of work. [...]”.¹⁵⁷⁴ With respect to DSME, in a recent article it is stated that: “[DSME] has recently won 1 trillion won (\$850.8 million) worth contracts to build four LNG carriers. With the addition, DSME has bagged a total of \$8 billion orders for 46 vessels, also overachieving its yearly target of \$7.7 billion. This is the first time since 2014 the shipbuilder has met its yearly order target. Its order backlog amounts to \$22.2 billion, which equates to two years’ worth of production”.¹⁵⁷⁵ With respect to SHI, in recent articles it is stated that “[...] Samsung Heavy Industries has clinched a total of \$7.8 billion orders, or 86 percent of its annual target of \$9.1 billion. The company is expected to achieve the target as early as next month [...]”.¹⁵⁷⁶ In another recent article, it is stated that backlog will increase with the [...] order: “[t]he three Korean shipbuilding companies have secured two

¹⁵⁷⁰ Minutes of the call with [...] dated 16 July 2020, paragraph 3. [DOC ID: 4101] See also [...] reply to question 2(c) of RFI 4 to [...] dated 3 March 2021. [DOC ID: 4895] See also [...] reply to questions 1 and 2(c) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 5974]

¹⁵⁷¹ [...] reply to question 7a of Commission RFI to [...] dated 28 July 2020. [DOC ID: 3922]

¹⁵⁷² Minutes of the call with [...] dated 19 October 2021, paragraph 6. [DOC ID : 5896]

¹⁵⁷³ Minutes of the call with [...] dated 16 July 2020, paragraph 9. [DOC ID: 4101] [...] reply to question 6 of Commission RFI to [...] dated 28 July 2020. [DOC ID: 3922]

¹⁵⁷⁴ “KSOE: Annual Order target Exceeded”, Business Korea, dated 27 September 2021. [DOC ID: 5787]

¹⁵⁷⁵ “S. Korea’s top 3 shipyards overachieve annual order target”, Pulse News Korea, dated 24 September 2021. [DOC ID: 5789] See also “Shipbuilders have fat order books for 2021”, Korea Joongang Daily dated 20 September 2021. DOC ID: 5782; See also “DSME Attains Annual Order Goal”, Business Korea dated 15 September 2021. [DOC ID: 5788]

¹⁵⁷⁶ “S. Korea’s top 3 shipyards overachieve annual order target,” Pulse News Korea, dated 24 September 2021 [DOC ID: 5789] See also “Shipbuilders have fat order books for 2021”, Korea Joongang Daily dated 20 September 2021 [DOC ID: 5782]

*years' worth of work. Their order backlog is expected to increase to five years of work thanks to the Qatar project".*¹⁵⁷⁷

- (895) Sixth, as regards the Notifying Party's claims that the prices of LLNGCs have been falling and that this fact would constitute evidence of overcapacity, the Commission notes that the same statements reported by the Notifying Party in the Response to the SO¹⁵⁷⁸ indicate both overcapacity and a fierce competition among shipbuilders in the past 5-6 years¹⁵⁷⁹ as factors that drove down the LLNGCs prices. Simply on the basis of this feedback, it cannot be assumed, as done by the Notifying Party, that a reduction of competition would not lead to a price increase. Indeed if competition in the past led to lower prices, a reduction in competition, keeping constant the level of capacity, could also be associated to a price increase.
- (896) Seventh, the Commission notes that, when it comes to LLNGCs, capacity is not as fungible as argued by the Notifying Party, contrary to what was reiterated by the Notifying Party in its Response to the Second Letter of Facts.¹⁵⁸⁰ Indeed, know-how, project management and technology are amongst the factors that play a significant role in LLNGCs shipbuilding. The market investigation results indicated that customers consider the following factors as the bottlenecks defining the amount of time required for building LNGCs: slots availability, quay, availability of specialised equipment and of engines or gas compressors, construction of the containment system, availability of labour force, project management skills are crucial factors and bottlenecks in LLNGC shipbuilding.¹⁵⁸¹ That LLNGC capacity is affected by LLNGC-specific factors is also confirmed for example with respect to workforce, by [...], which states that "[...] even today, the merging parties continue to reduce workforce [...]. [...]. This clear, larger trend toward destroying productive capacity in Korea further squeezes global capacity. [...]."¹⁵⁸² Recent press articles also confirm that the Parties as well as SHI have continued cutting workforce despite the ongoing positive trend in demand.¹⁵⁸³ That capacity depends on a number of inputs that go into LNGCs production and that some inputs are limited was also confirmed by [...].¹⁵⁸⁴ In its Response to the Second Letter of Facts,¹⁵⁸⁵ the Notifying Party claims that as a consequence of the fact that the Parties [...]. The Commission considers that this argument is immaterial. Indeed, as explained in this Section and in **Section 8.3.8**, LLNGC shipbuilding requires shipbuilders to have a set of specific capabilities including skilled workers and engineers, which, as explained in **Section 8.3.8** are, in any event, scarce. The market investigation also indicated that the most important bottleneck in relation to LLNGCs shipbuilding is the quay.¹⁵⁸⁶ One of the Parties' competitors explained that "[t]he building capacity bottlenecks for LLNGCs are production equipment and production site. The capacity of building LLNGCs relies on the coordination of available space at wharf/dock."¹⁵⁸⁷ [...] explains that

¹⁵⁷⁷ "Details of Qatar's LNG Carrier project Expected to Come Out in October", Hellenic Shipping News, dated 29 September 2021. [DOC ID: 5781]

¹⁵⁷⁸ Response to the SO, paragraph 508.

¹⁵⁷⁹ Response to the SO, paragraph 508.

¹⁵⁸⁰ Response to the Second Letter of Facts, paragraph 178.

¹⁵⁸¹ Replies to question 69 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁸² [...] observations on the SO, page 8. [DOC ID: 3851].

¹⁵⁸³ "Korea's top 3 shipyards enjoying heyday unready to expand workforce", Pulse News Korea dated 25 August 2021. [DOC ID: 5785]

¹⁵⁸⁴ Minutes of the meeting with [...] dated 1 October 2019, paragraph 11. [DOC ID: 3201]

¹⁵⁸⁵ Response to the Second Letter of Facts, paragraph 178.

¹⁵⁸⁶ Replies to questions 81, 81.1 and 81.2 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵⁸⁷ [...] reply to question 10 of the Commission's RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

*“[...] the main capacity bottlenecks consist in scale (size of dry dock, cranes, warehouses) but also in the capacity to handle cryogenic equipment (e.g. compressors, reliquefaction units), LNG cargo tank installation, engines and skilled workers/engineers that are needed to properly handle them [...].”*¹⁵⁸⁸

- (897) Eighth, although the market investigation results indicate that all customers that expressed an opinion except for [...], have not experienced a situation in which an LNGC’s shipbuilder was not able to offer a suitable slot for an order,¹⁵⁸⁹ one of those [...] customers stated that *“the unavailability is common across all yards at certain times due to competitive delivery slots, existing orders and/or lead time is too short for procuring equipment/machinery and other commercial factors”*.¹⁵⁹⁰ Those [...] customers replied that in such a situation they would either approach another shipbuilder or try to negotiate the next available delivery slot subject to their client’s acceptance.¹⁵⁹¹ Further, the Commission notes that while, in the past, there may have been less risk of limited capacity (as there used to be more shipbuilders active in the market), as is explained in **Sections 8.3.1, 8.3.4, and 8.3.8** below, the competitive landscape has changed. As clarified by a customer that has reserved slots of construction of more than [...] LLNGCs,¹⁵⁹² *“[...] ship orders tend to come in waves, and when there is a lack of orders for a few months, some industry observers may argue that there is excess capacity. However, it is difficult to deny the fact that the commercially competitive capacity is concentrated in the hands of the big 3 Korean shipbuilders. In [...]’ view, overcapacity in the LNG shipbuilding market is much less of a concern than overconcentration. Even if there are arguably periods of excess capacity, this does not mitigate [...] concerns about supplier market power caused by a further concentration of shipbuilding capacity [...].”*¹⁵⁹³
- (898) Ninth, a majority of shipbuilders that expressed an opinion during the market investigation clarified that they currently do not have any spare capacity at yards that are used to build large vessels.¹⁵⁹⁴ For example, one of the [...] LLNGCs shipbuilders stated that *“[c]onsidering to keep skilled workers, we have to minimise such spare, therefore currently we have no spare capacity”*.¹⁵⁹⁵ Similarly, one LLNGCs competitor stated that [...].¹⁵⁹⁶
- (899) Tenth, during the market investigation a majority of shipbuilders indicated that there are no yards within their group that have never built large vessels which could be used if there was no availability at large vessels yards.¹⁵⁹⁷
- (900) Eleventh, a majority of shipbuilders indicated that expanding capacity is not easy.¹⁵⁹⁸ For example, one shipbuilder singled out by the Notifying Party as imminent market entrant clarified that *“it is not easy to expand capacity”*¹⁵⁹⁹ and the Commission notes that it is not even a GTT licensee (as explained in **Section 8.3.8.3**, becoming a

¹⁵⁸⁸ Minutes of the call with [...] dated 22 July 2020, paragraph 17. [DOC ID: 4032]

¹⁵⁸⁹ Replies to question 70 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁹⁰ Replies to question 70 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁹¹ Replies to question 70.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁵⁹² Minutes of the call with [...] dated 16 July 2020, paragraph 3. [DOC ID: 4032] See also [...]’s reply to questions 1 and 2(c) of RFI 5 to [...] of 11 October 2021. [DOC ID: 5974]

¹⁵⁹³ [...] reply to question 2 of RFI 28 July 2020 to [...] dated 28 July 2020 [DOC ID: 3922]

¹⁵⁹⁴ Replies to question 15 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵⁹⁵ Replies to question 15 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵⁹⁶ Replies to question 15 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵⁹⁷ Replies to question 14 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵⁹⁸ Replies to question 18 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁵⁹⁹ Replies to question 18 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

GTT licensee is not an easy process and may take from a minimum of 18 months to two years). One of the Parties' competitors clarified that [...]¹⁶⁰⁰. Another shipbuilder clarifies that capacity is not only about having a large shipyard with facilities as to expand capacity "[...] we have to employ/acquire workforce, expanding capacity is not easy for us"¹⁶⁰¹. Nearly all shipbuilders that expressed an opinion could either not provide a concrete estimate of the cost and the time required to expand the existing docks or building new docks either because it will depend very much on the shipyard or because governmental approval is required or because expanding is not in their plan or just too expensive to be considered.¹⁶⁰² One shipbuilder stated that it would take 2 years and USD [...], while one of the [...] shipbuilders more than EUR [...] and more than 5 years.¹⁶⁰³ Nearly all shipbuilders that expressed an opinion could not give a concrete estimate of the cost and time required to acquire other elements of infrastructure and equipment for the same reasons as above.¹⁶⁰⁴ One shipbuilder stated that it would take 1 year and USD [...], while one [...] shipbuilder more than 5 years and EUR [...].¹⁶⁰⁵ Nearly all shipbuilders that expressed an opinion stated that they could not estimate cost and time to recruit or outsource labour for similar reasons as per above.¹⁶⁰⁶ One of the [...] shipbuilders stated that it would take more than EUR [...] and more than 2-3 years.¹⁶⁰⁷ Furthermore, as explained by [...], shipbuilders prefer to build a mix of vessel types in their facilities.¹⁶⁰⁸

(901) More specifically, the Commission notes that, as discussed in more detail in **Section 8.3.4.2**, CSSC's LLNGC capacity expansion plans or SHI's theoretical LLNGC capacity expansion plans are not likely to be of such magnitude as to enable these shipbuilders to exert, post-Transaction, a sufficient degree of competitive constraint on the Parties in the next five years. This is regardless of whether such LLNGC capacity expansion consists of structural or product mix changes. As explained in **Section 8.3.8**, any other capacity expansion plan of any other shipbuilder is even less likely to exert, post-Transaction, any sort of meaningful competitive constraint on the Parties in the LLNGC market in the near future.

(902) In conclusions, the Commission considers that there is no ample spare capacity in the LLNGC market, at least to the level of magnitude sufficient to exclude the creation of a dominant position by the merged entity as presented by the Notifying Party, and that capacity is not as fungible as portrayed by the Notifying Party.

b) Overview of yards with LLNGC production capability

(903) In order to estimate capacity for the LLNGC market, it is necessary to first identify all of the shipyards that actively participate in this market. In this Section, the Commission uses historical delivery data and the latest participation in tenders, together with other evidence from the market investigation, to define the set of capable shipbuilders to be considered in the capacity assessment. A preliminary

¹⁶⁰⁰ Replies to question 18 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰¹ Replies to question 18 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰² Replies to question 18.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰³ Replies to question 18.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰⁴ Replies to question 18.2 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰⁵ Replies to question 18.2 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰⁶ Replies to question 18.3 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰⁷ Replies to question 18.3 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
¹⁶⁰⁸ Minutes of the meeting with [...] dated 1 October 2019, paragraph 12. [DOC ID: 3201]

overview on these shipyards aggregate capacity is given in order to provide a sense of each shipbuilder's general size.

- (904) According to the registration data submitted by the Notifying Party, it is possible to identify 13 different shipyards that built LLNGCs in the past ten years (2010-2019).¹⁶⁰⁹ These shipyards belong to ten different groups as three shipbuilders have built LLNGCs in multiple yards (HHI, CSSC Hudong and Imabari). **Table 38** below lists these shipyards.
- (905) The Commission clarifies that of the CSSC group only the affiliate Hudong Zhonghua Shipbuilding Co Ltd (CSSC Hudong) has the capabilities to build LLNGCs. In particular, the shipbuilder CSSC Hudong carries out the construction of LLNGCs almost exclusively at its main Shanghai Hudong shipyard and there are only [...] deliveries registered at its other shipyard Shanghai Jiangnan-Changxing Shipbuilding Co Ltd (CSSC Hudong SCS).¹⁶¹⁰ Both yards are considered in the capacity analysis. There is indeed no evidence that other affiliates of the CSSC group have carried out building of LLNGCs. This is also confirmed by [...]’s reply to the Commission’s request for information, as [...] confirmed that only [...] Hudong has the capability and capacity to build LLNGCs.^{1611 1612}
- (906) The Commission notes that for the purposes of this analysis, it has excluded the Russian shipyard Zvezda Shipbuilding from the list of shipyards in **Table 38** and **Table 39** below. Based on the information available, SHI-Zvezda has currently secured orders for [...] LLNGCs in 2019 and another [...] in [...].¹⁶¹³ However, SHI-Zvezda’s capabilities are uncertain as it has never delivered any LLNGCs yet and thus has no track record. In addition, and importantly, for the reasons explained in **Section 8.3.8.3 (B) c)**, the Commission understands that Zvezda LLNGCs capability is only associated to its joint construction scheme with SHI, meaning that it is not independent from a technological point of view. Further, even from a commercial perspective, [...].¹⁶¹⁴ It would also be questionable to what extent Zvezda would be able to win orders in the open market given its absence of track record. As a result, Zvezda cannot be considered as commercially active and contesting demand for LLNGCs originating from non-Russian customers. On this basis, the Commission does not take into account Zvezda Shipbuilding in its baseline capacity assessment.¹⁶¹⁵

¹⁶⁰⁹ Including 2020 and 2021 would not change this finding as there is no new entrant in the LLNGCs market.

¹⁶¹⁰ The Notifying Party reply to RFI 67, Clarksons database Annex Q38.

¹⁶¹¹ [...] reply to the Commission RFI of 30 May 2020 [DOC ID 3323] See also **Section 8.3.4.2 (B)**, in particular **Section 8.3.4.2 (B) b)**.

¹⁶¹² In its submission of 20 May 2020 (“Supplementary explanations based on empirical evidence regarding supply capacity in the large LNG carrier market”), the Notifying Party claims that also Jiangnan Shipyard (Group) Co Ltd is capable of building LLNGCs as it has [...] LLNGCs on order. However, the Commission understands that these are carriers of below 90,000m³ (as reported in the Clarksons database submitted by the Notifying Party), therefore do not fall within the Commission’s definition of LLNGCs market.

¹⁶¹³ The Notifying Party reply to RFI 67, Clarksons database Annex Q38. In this dataset the indicated builder for the 2019 order is SHI-Zvezda and for the 2020 order “Zvezda Shipbuilding Complex”.

¹⁶¹⁴ As discussed in **Section 8.3.8.3(B) c)**.

¹⁶¹⁵ However, for consistency, when the Commission compares LLNGCs capacity and demand it removes the part of demand that is expected to be related to Russian orders from the demand estimation.

Table 38 LLNGCs deliveries and shipyard aggregate capacity across all vessel types

[...]

Source: Commission's computation on the basis of Clarksons' vessels data submitted by the Notifying Party responsive to RFI 67.

- (907) The second column of **Table 38** reports the year in which the individual shipyard delivered its last LLNGC. If the year is beyond 2021, it means that the shipyard has at least one LLNGC in its orderbook in September 2021. On the contrary, if the year is equal or lower than 2020 it means that the shipyard was not able to secure other orders for LLNGCs and it has currently delivered all the LLNGCs it had on order.
- (908) Looking at the date of the last LLNGC delivered, the Commission finds that the Japanese shipyard Imabari Hiroshima and the South Korean shipyard Hanjin delivered the last LLNGCs in year [...]. The last LLNGC delivered by Imabari Hiroshima was ordered in November [...]. The last LLNGC delivered by Hanjin was ordered in [...]. On this basis, noting that these shipyards' last order is dated more [...], the Commission does not consider them to be currently active and able to contest the current demand for LLNGCs. Further, there is no evidence that these shipyards could come back to contest demand for LLNGCs given that Hanjin shipyard (part of Hanjin Heavy industries Co Ltd) is currently up for sale after years of financial distress and with no clear future.¹⁶¹⁶ In addition, the other shipyard of Imabari (Saijo) delivered its last LLNGCs in [...].¹⁶¹⁷ Overall, as explained in **Section 8.3.8.3 (C) xxvii**), the Commission also excludes that the LLNGCs market will be the focus of the new joint venture between Imabari and JMU.¹⁶¹⁸
- (909) Likewise, the Commission also considers that the South Korean shipyard STX, is not currently competing for LLNGCs orders and is not expected to re-enter the market in the near future. STX has a limited track record of [...] and delivered these [...]. The last contract to build a LLNGC was won in [...]. In addition, STX is also in financial distress and undergoing a severe restructuring plan. This evidence clearly indicates that STX is not anymore competing for LLNGCs.
- (910) The Commission also notes [Parties' tender data]. This confirms that STX, Hanjin and Imabari do not compete in the market for LLNGCs.
- (911) Aside from the first group of shipyards that have since long time exited the LLNGCs market, there is a group of shipyards that delivered their last LLNGCs [...] and have no other order in their orderbook. These shipyards are the following Japanese firms: KHI, JMU and MHI. They all delivered their last LLNGC [...] and the last time a Japanese firm signed a contract for this type of carriers was in [...] got their last order.¹⁶¹⁹ Of these Japanese yards, only MHI and KHI have a more established track record in terms of LLNGCs built as during the past [...] years, namely the period [...], they delivered respectively [...] (**Table 38** last column). In terms of tender participation, [...].¹⁶²⁰
- (912) In the period of January 2016 up to September 2021, a total of [...] LLNGCs vessels were contracted. No Japanese firm was able to win any of these contracts, whereas

¹⁶¹⁶ See: Creditors to sell Hanjin Heavy Industries & Construction [DOC ID: 3262]

¹⁶¹⁷ As discussed in **Section 8.3.4.3**.

¹⁶¹⁸ See: <https://www.offshore-energy.biz/japans-two-shipbuilding-giants-to-form-jv-in-october/> [DOC ID: 3267]

¹⁶¹⁹ Clarksons' vessels data provided by the Notifying Party RFI 67, Annex Q38.

¹⁶²⁰ [...].

[...] contracts were won by the three Korean shipbuilders HHI, DSME and SHI. Only [...] were won by CSSC's Hudong and the last [...] were won by SHI-Zvezda.¹⁶²¹ Additionally, as shown in **Table 38**, the Japanese delivered their last LLNGCs in [...]. On this basis of all of these facts, and also for the reasons discussed in **Section 8.3.4.3**, the Commission does not consider that the Japanese shipbuilders can be considered active or likely to re-enter the LLNGCs market and therefore are excluded from the assessment of the balance between supply and demand for future orders.¹⁶²²

- (913) In their historical replication of the Commission's analysis submitted in Response to the Second Letter of Facts, the Notifying Party excludes all shipyards that had not won a contract in three years (including the year in question) from the competitive analysis. The Commission feels that this is a misrepresentation of their views on capability. As mentioned in the previous paragraph, the Commission views any shipyards currently producing a LLNGC as possibly active; therefore, it considers shipyards with deliveries in 2019 relevant for the supply and demand balance in 2019. Therefore, the Notifying Party errs in their historical application of the Commission's methodology.
- (914) The Notifying Party's submission of 20 May 2020¹⁶²³ claims that another shipbuilder active in LLNGCs is the joint venture between Imabari and MHI. The Commission understand that these orders are already attributed either to Imabari or to MHI in the Clarksons database. Further, none of Imabari, MHI, or their joint venture appear to be competing as discussed above (and in **Section 8.3.4.3**) and, therefore, are not considered as competitors. In particular the Commission also notes that [...] expressed the view that for [...] to regain interest in the LLNGCs market the price would have to increase and the increase would need to be "*extremely high*".¹⁶²⁴ For this reason, the Commission considers unlikely that [...] would start competing in the LLNGCs market even after a 5-10% price increase. Given that [...] is the Japanese shipbuilder with the best track record in LLNGCs the same would likely apply also to the other Japanese shipbuilders.
- (915) Among the shipbuilders that currently have orders for LLNGCs in their orderbook, DSME is the one that has the single largest shipyard in terms of base capacity when base capacity is computed pursuant to the method proposed by the Notifying Party, that is considering the maximum level of annual output in terms of CGT across all vessels types produced in that shipyard. This is in line with their methodology presented in **Section 8.3.7.2 (A)** above. Looking at the yearly levels of production from 2010 to the end of 2021, on the basis of this metric, DSME's base capacity is estimated to be [...] (**Table 38** third column). On average during the past six years, 2016-2021, DSME used [...] of this capacity ([...]) to build LLNGCs (**Table 38** fourth column) and another [...] CGT was used to build other non-LLNGCs vessels (**Table 38** fifth column). HHI has the second largest shipyard, HHI's Ulsan, with an estimated base capacity of [...] of which about [...]. The other shipyard of HHI, Hyundai Samho, has a capacity of [...] and on average about [...] have been used on

¹⁶²¹ Clarksons'vessels data provided by the Notifying Party RFI 67, Annex Q38.

¹⁶²² Nevertheless, as clarified in the following, the Commission still considers on a conservative basis a scenario in which [...] is considered to compete in the LLNGCs market.

¹⁶²³ The Notifying Party submission "Supplementary explanations based on empirical evidence regarding supply capacity in the large LNG carrier market" of 20 May 2020.

¹⁶²⁴ [...] reply to question 3 of Commission RFI 2 to [...] dated 23 April 2020. [DOC ID: 2943]

an annual basis to build LLNGCs ([...] CGT for non-LLNGCs vessels). In total, the capacity of HHI at the group level amounts to [...] in the past five years and [...].

- (916) SHI has an estimated total capacity at its shipyard for [...] of which [...] have been used annually on average to build LLNGCs in the past [...] years and almost [...] have been used to build non-LLNGCs vessels.
- (917) CSSC Hudong has an estimated capacity of [...], its average output of LLNGCs amounted to [...] and the output of non-LLNGCs vessels amounted to [...]. The other yard of CSSC Hudong SCS only delivered [...] in the past [...] years and has a capacity of about [...] of which only [...] have been devoted annually on average to LLNGCs in the past [...] years.
- (918) On the basis of the average output measured in terms of CGT, DSME is the shipbuilder that built the highest amount of LLNGCs on average in the past six years ([...] CGT). It is followed by HHI ([...] CGT in aggregate), SHI ([...] CGT) and finally CSSC Hudong with [...] CGT (in aggregate). Further, DSME and SHI are the shipyards that dedicated most of their output to LLNGCs with respectively [50-60]% and [40-50]% in terms of share on total output in terms of CGT. CSSC Hudong follows with a [30-40]% share. HHI's share of LLNGCs is much lower denoting its overall large size and specialisation also in several other type of vessels.
- (919) The above finding concerning the level of output in terms of CGT are also confirmed when looking at the level of output in terms of the number of vessels delivered. DSME delivered [...] LLNGCs in the period 2016-2021 with an average of [...] per year. HHI, in aggregate, delivered [...] LLNGCs with an average of [...] per year. SHI delivered [...] vessels with an average of [...] per year. Finally, CSSC Hudong (including SCS) delivered a total of [...] LLNGCs, an average of [...] LLNGCs per year.
- (920) The relatively recent market developments related to large orders of LLNGCs, like the slot reservation for more than [...] LLNGCs made by [...],¹⁶²⁵ exclusively allotted to only four shipbuilders (DSME, HHI, CSSC, SHI) substantiate the finding that these four are the relevant competitors actively competing in the market for LLNGCs.
- (921) The Notifying Party in the Response to the SO remarked that the Commission approach unjustifiably excludes a number of viable competitors in the market for LLNGCs thereby underestimating the overall capacity in the market. Further, the Notifying Party argues that the Commission should consider the possible expansion plans of SHI and CSSC.
- (922) The Commission considers that both claims are unsubstantiated. With regard to the Japanese shipyards it first refers to its arguments in **paragraph (912)** above. The Notifying Party has failed to provide any compelling evidence that the Japanese shipbuilders, or even other alleged new entrants, are effectively competing with the Parties and that these shipbuilders could constraint the merged entity from increasing prices post-merger. Additionally, for what concerns Japanese shipbuilder the Commission explains in **Section 8.3.4.3** why these shipbuilders would not exert a competitive constraint on the merged entity. For what concerns possible new entrants, the Commission explains in **Section 8.3.8** why entry is not likely to happen in the LLNGCs market.

¹⁶²⁵ See [...]’s reply to questions 1 and 2(c) of RFI 5 to [...] dated 11 October 2021. [DOC ID; 5974]

- (923) [...].¹⁶²⁶ [...].
- (924) In conclusion, concerning the assessment of capabilities to build LLNGCs, the Commission considers that there are only two active shipbuilders that have the capabilities, track record and capacity to compete in the market for LLNGCs with the Parties, namely SHI and, to an insufficient extent, CSSC (Hudong).
- c) *Estimation of LLNGCs capacity*
- (925) There is no shipyard that builds exclusively LLNGCs. As shown in the preceding Section and specifically in **Table 38** all shipyards build LLNGCs together with other vessels, although some shipyards, like DSME and CSSC Hudong are more specialised in the building of LLNGCs.
- (926) For this reason, there does not exist a readily available metric to estimate the capacity of each shipyard to build only LLNGCs. The Notifying Party proposes to estimate this capacity looking at the difference between the maximum output capacity of the shipyards, across all vessel types, and the level of output that on average is allocated to the building of other vessel types. This Section follows this approach and estimates the capacity for LLNGCs under two scenarios¹⁶²⁷. The first scenario assumes that there is no restriction of size and that all the capacity of the shipyard can be allocated to build carriers of the size of LLNGCs. The second scenario removes from the total capacity the capacity that was used to build smaller vessels under the assumption that this capacity cannot be allocated to build LLNGCs.¹⁶²⁸ The two scenarios can then provide a range of capacity estimates with the first scenario being the upper bound and the second scenario the lower bound.
- (927) As described, the capacity estimates are adjusted for the shipyards normal product mix using average non-LLNGC outputs calculated over a six year timespan (2016-2021). However, firms can spread their product mix unevenly throughout the observed period. Additionally, LLNGCs usually take more than one year to produce. This can cause the factual maximum deliveries for LLNGCs in one year to be larger than the stricter capacity estimate based on project timing. However, for additional robustness, the Commission adjusts the capacity estimate obtained under the method described in the previous paragraph to the maximum yearly deliveries in case this number exceeds the estimate. Since firms take more than one year to build a LLNGC and often spread their product mix and delivery dates unevenly throughout time, and since buyers may delay their contract time for strategic reasons, the Commission finds a time span of at least five years more indicative when evaluating supply and demand balance.
- (928) To gauge an understanding on the accuracy of these capacity estimates it is then possible to compare the estimates with the internal assessment of capacity made by DSME in its normal course of business when it assessed its own and the capacity of its main competitors, notably HHI and SHI, to build LLNGCs.¹⁶²⁹

¹⁶²⁶ The likely competitive constraint exerted by CSSC is also considered in **Section 8.3.4.2**.

¹⁶²⁷ The Commission considers the period 2010 to present to calculate maximum output.

¹⁶²⁸ This correction is done as follows. First, the minimum length of a LLNGCs is estimated on the basis of the registration data submitted by the Notifying Party. Then, for each shipyard, all the vessels with a length below this minimum size are dropped for the purpose of the capacity estimation.

¹⁶²⁹ Exhibit 43, Table 16, of the study submitted by DSME on 30 January 2020.

- (929) The Commission notes that the Notifying Party in its submission estimates capacity in terms of CGT.¹⁶³⁰ On the contrary, [...].¹⁶³¹ For this reason the Commission considers it more appropriate to measure and assess the capacity situation in terms of number of LLNGCs. Hence, this latter approach is chosen as to be consistent with [...].¹⁶³²

Table 39 Estimated capacity for LLNGCs

[...]

Source: Commission's computation on the basis of Clarksons' vessels data submitted by the Notifying Party in response to RFI 67 and study submitted by DSME on 30 January 2020 ("first DSME study").

- (930) **Table 39** presents the Commission's capacity estimates for LLNGCs. The second column presents the capacity estimates under the scenario of no size restriction and the third column presents the scenario in which capacity is estimated assuming that the capacity to build smaller vessels cannot be allocated to build LLNGCs. The fourth column presents the maximum annual level of deliveries ever achieved by that shipyard since 2010 (including expected deliveries for 2021). This metric can be used to benchmark the estimated capacity figures. The fifth column presents DSME's own assessment of LLNGCs capacity for itself and its main competitors namely HHI and SHI. Although these figures are limited to only three shipbuilders, they can in any case provide a useful benchmark on the accuracy of the estimation method adopted by the Commission. Finally, for completeness, the capacity estimates are provided for all shipbuilders that delivered an LLNGC since 2010. However, for the reasons explained in the previous Section only SHI and, to an insufficient extent, CSSC Hudong are considered relevant competitors to the Parties for the purpose of establishing current LLNGC capacity available in the market.
- (931) Starting with DSME with no size restriction the capacity is estimated to [...] LLNGCs. With size restriction the estimate increases at [...] LLNGCs.¹⁶³³ Both these estimates are consistent with the two benchmarks that are provided. Indeed, the maximum number of LLNGCs that DSME was able to deliver in a single year amounts to [...] carriers and DSME's own estimate of its capacity amounts to [...] carriers.
- (932) The capacity of HHI's Hyundai Samho is estimated to be [...] carriers under no size restriction and [...] carriers with size restriction. The maximum annual delivery reached by this yard has been of [...] carriers in a given year. DSME's assessment estimates this shipyard's capacity to be equal to [...] carriers, increased recently to [...] following a recent capacity expansion. For the main shipyard of HHI, the estimated capacity amounts to [...] carriers with no size restriction and to [...] carriers with size restriction. The maximum number of carriers delivered in a year

¹⁶³⁰ Although, the Notifying Party in its submission of 20 May 2020 also estimated shipbuilding capacity in terms of number of vessels.

¹⁶³¹ Exhibit 43, Table 16, of the study submitted by DSME on 30 January 2020.

¹⁶³² See Exhibit 43, Table 16, of the study submitted by DSME on 30 January 2020 where capacity is estimated in terms of number of vessels. Given that CGT are converted in the number of vessels considering that on average a LLNGC amount to 87,308 CGT the results of the analysis do not change whether figures are compared in terms of CGT or in terms of number of vessels. In particular the same conversion factor was used for all shipbuilders and this conversion factor is estimated on the basis of the average LLNGCs ordered in the period 2015-2019. It is also possible to use a shipbuilder specific conversion factor but the results would not materially change.

¹⁶³³ [...].

amounts to [...] carriers and the DSME's assessment of HHI capacity amounts to [...] carriers increased to [...] recently after the capacity expansion.

- (933) The capacity of SHI is estimated at [...] carriers with no size restriction and [...] carriers with size restriction. The maximum delivery of LLNGCs achieved by SHI coincides with the size restriction scenario. DSME's own assessment of SHI's capacity is of [...] LLNGCs.
- (934) Concerning SHI's capacity to build LLNGCs, the Commission notes that the Notifying Party in the Response to the SO argues that SHI could build up to [...] LLNGCs per year and that the Commission's estimate significantly underestimate SHI's capacity.¹⁶³⁴ In the Response to the First Letter of Facts,¹⁶³⁵ the Notifying Party assesses SHI's capacity at [...] LLNGCs based on the [...] where the Commission notes that [...] confirmed that it could build up to [...] LLNGCs per year, [...].¹⁶³⁶ The Notifying Party also reiterates this point in their Response to the Second Letter of Facts¹⁶³⁷.
- (935) However, the Commission observes that the theoretical maximum of [...] LLNGCs argued by the Notifying Party is obtained only if it is assumed that SHI will stop building the other carriers, that are now co-built in its [...] LLNGCs capable docks. As explained in **Section 8.3.4.1**, the Commission does not consider it realistic that SHI could build [...] LLNGCs a year.
- (936) Additionally, the Commission notes that its upper bound of [...] vessels represents an increase of 20% of its maximum level of historical output. For this reason, the range of LLNGCs capacity estimates for SHI, that goes from [...] up to [...] LLNGCs is considered a plausible estimate of SHI's capacity to build LLNGCs. In its Response to the Second Letter of Facts,¹⁶³⁸ the Notifying Party claims that SHI is expected to deliver [...] LLNGCs in 2024 (based on information from Clarksons)¹⁶³⁹ or even [...] LLNGCs in 2024 (based on the Notifying Party's own estimates as indicated at paragraph 68 of its Response to the Second Letter of Facts). The Commission observes, in response to the Notifying Party's argument, that Clarksons originally had SHI delivering [...] LLNGCs in 2021, however two quarters later it became apparent that SHI would only deliver [...] LLNGCs in 2021.¹⁶⁴⁰ Hence, SHI was not able to deliver [...] LLNGCs, as it was originally expected to do. Therefore, the Commission considers that the delivery of [...] LLNGCs in 2024 is unlikely to be realistic. In addition, in response to the Notifying Party's argument, the Commission notes that LLNGCs take much longer than one year to build. Therefore, the output for one year could exceed capacity based solely on the timing of the projects. Indeed, looking at SHI expected deliveries, excluding the orders produced by SHI-Zvezda, SHI never comes close to exceeding the capacity estimate on average over a 5 year time horizon.

¹⁶³⁴ Response to the SO, paragraph 587.

¹⁶³⁵ Annex 11 of the Notifying Party's Response to the First Letter of Facts.

¹⁶³⁶ [...].

¹⁶³⁷ Response to the Second Letter of Facts, Section II.A(1)(i)1.b).

¹⁶³⁸ Response to the Second Letter of Facts, paragraph 68 and Figure 4.

¹⁶³⁹ Underlying data provided by the Notifying Party in its Response to the Second Letter of Facts, Annex SHI backlog 2021.11.24.

¹⁶⁴⁰ The Commission notes, in response to the Notifying Party's argument, that Clarksons data is regularly updated and, as it already occurred, expected deliveries have and may be revised to a lower number than what initially expected. This is even more relevant given that the 2024 expected deliveries are three years away.

- (937) The capacity of CSSC Hudong is estimated at [...] LLNGCs with no size restriction and [...] LLNGCs with size restriction. The maximum number of LLNGCs delivered by Hudong in the same year amounts to [...]. This capacity increases by [...] and [...] LLNGCs, in the two scenarios when one includes the Hudong SCS yard. This corresponds to a capacity estimate of [...] LLNGCs under both capacity estimation techniques. Specifically for CSSC the Commission notes that the above estimates exceed [...] assessment of [...] capacity to build LLNGCs, as [...] confirms that [...] currently has capacity to build no more than [...] LLNGCs and it has plan to expand capacity to build no more than [...] LLNGCs.¹⁶⁴¹ The Notifying Party claims that CSSC should be attributed a capacity of [...] LLNGCs, and uses this capacity in their most recent RSI analysis. The Commission disagrees with this approach since the Commission's capacity estimates, from the methodology which it used for all shipyards, align with the information provided to the Commission by [...].
- (938) In the Response to the Second Letter of Facts, the Notifying Party claim that the Commission is treating CSSC and SHI differently in their analysis¹⁶⁴². This is not the case, since the Commission is using the exact same methodology described at the beginning of this Section to estimate capacity for all of the shipyards, including CSSC and SHI. The Commission points out that it is the Notifying Party that is treating shipyards differently in their RSI calculations, in that it relies on balanced capacity estimates¹⁶⁴³ for all shipyards except for SHI and CSSC, for which they rely on more generous ad hoc estimates based on various sources¹⁶⁴⁴. Moreover, the Commission notes that, as opposed to [...] capacity estimates, [...] capacity estimates match with the Commission's capacity estimates of [...] (See **Sections 8.3.4.1 and 8.3.4.2**).
- (939) On the basis of the above estimates and of the comparison with the available benchmarks, it is possible to conclude that the estimation methods are producing estimates that are in line with [...]’s own view of the market and for this reason, the Commission considers them as an accurate representation of the market.
- (940) Concerning the two possible scenarios (with or without size restriction) the Commission considers that the scenario with size restriction produces estimates that are closer to [...]’s own view of the market. However, to account for a possible, albeit limited, flexibility in adapting capacity the Commission also considers that the first scenario with no size restriction can be useful to estimate an upper bound of LLNGCs capacity. The Commission considers that most likely the correct capacity would be closer to the capacity estimate with size restriction.
- (941) The Commission has also estimated the capacity of the other players that have historically been present in the market for LLNGCs to show that their capacity is in any case very limited. Nevertheless, the arguments already discussed in **Section 8.3.1.2** are valid as the Commission does not consider these shipyard to be currently active in the LLNGCs market. The theoretical capacity of the Japanese shipyards is estimated in values between [...] and [...] LLNGCs denoting their limited individual size when compared to the South Koreans shipyards. For the reasons already explained in **Section 8.3.4.3**, the Commission considers that this capacity is not

¹⁶⁴¹ [...] reply to the Commission RFI of 30 May 2020 [DOC ID: 3323].

¹⁶⁴² Response to Second Letter of Facts paragraph 142ff.

¹⁶⁴³ More specifically they use the methodology on balanced capacity described above in **Section 8.3.7.1** that uses past output and delivery data from Clarksons.

¹⁶⁴⁴ The underlying codes and calculations used by the Notifying Party for the RSI analysis presented in the Response to the Second Letter of Facts.

active anymore and does not represent a competitive constraint on the active competitors. Concerning the shipbuilder [...], the Commission also notes that its capacity estimate quantifies in [...] the number of LLNGCs that [...] could build. This estimate is consistent with [...] own information provided to the Commission as [...] indicated that [...] can build only [...] LLNGCs per year.¹⁶⁴⁵ On the contrary, the Notifying Party claims that [...] can build more than [...] LLNGCs, although it does not specify this figure.¹⁶⁴⁶

(942) The theoretical capacity of STX is estimated between [...] and [...] LLNGCs. However, STX underwent severe restructuring and most likely only a fraction of this capacity would still be active. In any case, for the reasons explained in **Section 8.3.8.3 (C) iii**), the Commission does not consider that STX could viably compete in the market for LLNGCs and therefore does not consider this capacity to exert a competitive constraint on the active shipyards. The same, for the reasons explained in **Section 8.3.8.3 (C) ii**), applies to Hanjin.

(943) The Russian shipyard SHI-Zvezda is not considered in the above analysis as it does not have a track record in commercial shipbuilding from which it is possible to estimate its capacity to build LLNGCs.¹⁶⁴⁷

(944) Therefore, the Commission considers that the capacity to build LLNGCs in the hands of the competitors is limited. Most of this capacity is held by SHI and a limited portion by CSSC Hudong. For completeness, it should be noted that other shipbuilders that in the past built LLNGCs and that are not found to be active anymore also have very limited capacity individually.

d) *Quantitative assessment of demand for LLNGCs*

(945) For the purpose of the assessment of the balance between demand and supply, the Commission will consider the estimates of the future demand discussed below and illustrated in **Table 40** in terms of average annual orders. However, ships are not a readily available product that is produced and purchased in the same year. There is indeed a relatively long time lag between the order and the delivery of vessels (in the order of at least 2-4 years) and there is also variation in this time lag across projects and tenders depending not only on the availability of slots at shipyards but also on customer preferences, timelines of LNG exploitation projects or timeline of time charter contracts. Given these specificities, the Commission considers that the balance between supply and demand is most appropriately assessed over a period of at least five years, this also to be consistent with the approach used to estimate market shares.

(946) On this basis, the Commission uses the following estimation of demand. A first scenario considers the average deliveries in terms of number of LLNGCs delivered on an annual basis over the period 2016-2020. In this scenario, the estimated demand amounts to 37 carriers per year. The second scenario considers the average level of orders in the period 2016-2020 and leads to an estimate of 38 carriers per year. Both of these estimates are backward looking as they consider the demand of the past approximately 8 years (the deliveries in the period 2016-2020 likely reflect the orders of the period 2013-2017 at least). Given that the LLNGC market is considered

¹⁶⁴⁵ Minutes of the conference call with [...] dated 26 July 2019, paragraph 19. [DOC ID: 296]

¹⁶⁴⁶ The Notifying Party submission “Supplementary explanations based on empirical evidence regarding supply capacity in the large LNG carrier market” of 20 May 2020.

¹⁶⁴⁷ The Commission considers situations that remove Russian demand served by Zvezda for a thorough analysis of the market.

to be and remain on a growth trajectory, the Commission considers that these estimates are conservative and likely to underestimate the future demand.

Table 40 LLNGCs historical and projected demand

	Deliveries	Orders	Orders Clarksons	Orders MSI	Orders Clarkson MSI
Demand (# vessels)	2016-2020	2016-2020	forecast 2021-2025	forecast 2021-2025	Avg. Forecast 2021-2025
	37	38	52	35	44

Source: Commission's computation on the basis of Clarksons' vessels data submitted by the Notifying Party in response to RFI 67, Clarksons and MSI Q3 2021 order forecasts

- (947) To account for changing demand, the Commission also considers forward-looking estimates produced by third parties in addition to historical demand outcome. The first forecast is from the September 2021 assessment made by Clarksons and submitted by the Notifying Party. Based on that report, demand estimates are 52 LLNGCs per year over the period 2021-2025¹⁶⁴⁸. The other estimate comes from MSI's forecasts from September 2021, which estimates a demand of 35 during the period 2021-2025.
- (948) In light of the above evidence and the evidence examined in **Section 8.3.6**, the Commission considers that demand for LLNGCs is currently in an upcycle phase, in spite of the Covid-19 outbreak. Indeed, as explained in **Section 8.3.6**, the Commission notes that Clarksons forecasts a peak in LLNGC demand during the period 2021-2025 and that as of 2026-2030, Clarksons forecasts that LLNGC demand will remain in line with the average orders in 2016-2020.
- (949) In response to the Notifying Party's criticism of the reliance on Clarksons, which they claim is an overly optimistic forecast, the Commission recalls the following facts. First, Clarksons is a widely used data provider in the industry and both the Notifying Party and DSME rely on Clarksons' data as shown by internal documents. Second, on the alleged over-optimistic nature of the Clarksons forecasts, the Commission notes that about 30% of the actual orders were placed in November and December in both 2018 and 2019,¹⁶⁴⁹ therefore orders before the end of the year are not fully informative. Indeed, the total number of LLNGCs forecast by Clarksons in March 2020 for 2020 was 48¹⁶⁵⁰ and ultimately 50 LLNGCs¹⁶⁵¹ were contracted by the end of 2020. Therefore, the Commission does not share the view of the Notifying Party that Clarksons' estimates are over optimistic, rather the contrary. Third, as explained in **Section 8.2.2**, while 2020 was a particular year, the post-SO market investigation and ongoing tenders and current orders show that the present as well as the future outlook on the LLNGC market remains positive in spite of the COVID-19 pandemic. Fourth, the Commission notes that it also relies on more pessimistic MSI forecasts.

¹⁶⁴⁸ Clarksons forecast used are for LNGCs >40,000m3. The Commission used the CGT forecasted and multiplies it by the average proportion of CGT that are LLNGC ships in the past 5 years to obtain the LLNGC forecast. The adjusted CGT forecast is then converted into number of ships by dividing by the average LLNGC size.

¹⁶⁴⁹ Based on Clarksons Vessel Data submitted in response to RFI 67.

¹⁶⁵⁰ Based on Clarksons forecasts submitted in response to RFI 38, the correction explained in footnote 1645 and the average vessel size of an LLNGCs contracted in 2016-2020.

¹⁶⁵¹ Based on Clarksons Vessel Data submitted in response to RFI 67 Q38.

- (950) In the Response to the Second Letter of Facts, the Notifying Party claims that it is inconsistent for the Commission to use data up to 2021 for capacity estimates yet still include 2021 in the forecast. The Commission clarifies that it has only used data on orders *delivered* up until 2021. The forecasts used are in terms of *contracted* orders. When looking at contracted orders, the last quarter of the year is typically the most prolific in terms of number of orders and can vary greatly. According to Clarksons data, the Commission notes that about 30% of the actual orders were placed in November and December in both 2018 and 2019.¹⁶⁵² Since its analysis relies on data from September 2021, the Commission does not view 2021 as complete, nor easily predictable when considering contracted orders.¹⁶⁵³ The Commission does however believe Q3 data on expected deliveries are reliable for the fourth quarter. This is because this time period represents around 10% of the building time for a ship, and the Commission finds it reasonable that ships that are in the finishing stages of their building process will finish as scheduled. Therefore, the Commission uses data on scheduled deliveries up to the end of 2021 for its analysis. Conversely, the number of contracts for future delivery of ships in the final quarter of 2021 is much more uncertain. Therefore the Commission does not use the incomplete contracting data from 2021 in its historical demand. Additionally, it finds it inappropriate to use contracting data from 2021 in yearly contracting averages, since the number of orders has not been fully realized yet.
- (951) In the Response to the Second Letter of Facts the Notifying Party further questions the validity of the Clarksons forecast, claiming again that it is overly optimistic. In paragraph 151 of this response, the Notifying Party argues that MSI's forecast appears more valid than Clarksons, since it is close in value to historical levels of demand. The Commission does not view this as a valid criticism, since past demand is not necessarily a good indicator of future demand in the LLNGC market. Additionally, the Notifying Party argues that Clarksons appears to estimate [...] orders to be placed by [...], while in 2020 [...] provided a speculative estimate of [...] to the Commission. The Commission notes, in response to the Notifying Party's argument, that the Clarksons estimate is based on current information on worldwide LNG projects, including those from [...]. Being the industry standard forecaster, the Commission does not find issue with relying on its assessment on the most current situation. Additionally and in response to the Notifying Party, argument, the Commission notes that even if one were to adjust Clarksons using the discrepancies described, it would still be above the average of the MSI and Clarksons Forecast.¹⁶⁵⁴ The analysis is also performed using the more pessimistic MSI forecast to capture and assess many possible demand scenarios. Therefore, the Commission considers that its analysis provides a comprehensive view of different possible demand scenarios.
- e) *Balance between supply and demand*
- (952) On the basis of the estimates for the available capacity and demand, it is then possible to take a view on the expected balance between demand and supply and in particular to test the hypothesis that the competitors of the Parties would be able to supply the entire demand. As explained in the beginning of this **Section 8.3.7**, contrary to the Notifying Party the Commission does not consider, that capacity is

¹⁶⁵² Based on Clarksons Vessel Data submitted in response to RFI 67 Q38.

¹⁶⁵³ The Commission relies on the most recent submission of the Clarksons Vessel data submitted in reply to RFI 67, Q38, which includes data up until the end of September 2021.

¹⁶⁵⁴ [...].

the only relevant parameter that is driving competition in the shipbuilding industry as such an assumption would imply that competition is only impacted by capacity constraints, that products are homogenous, firms compete on prices and customers would promptly switch all their purchases to the supplier offering the lowest price.

- (953) Nevertheless, the Commission presents the results of this exercise and shows that in the LLNGCs market there are strong indications that the Parties will become pivotal as a consequence of the Transaction and will have control over a significant part of the demand under several plausible assumptions for the demand development. On this basis, even under the extreme hypothesis of competition put forward by the Notifying Party the Transaction would likely increase the incentive for the Parties to reduce output and exploit the acquired market power. These results further support the finding that the Transaction would lead to the creation of a dominant position, and at the very least show that competitors' capacity would not constrain the Parties.

Table 41 Updated RSI analysis using the Q3/2021 forecasts

[...]

Source: Commission computation on the basis of Clarksons and MSI data submitted in response to RFI 67

- (954) **Table 41** presents the results of the comparison between capacity and demand. The [...] historical (deliveries and orders) and [...] forecasted (Clarksons, MSI and the average of the [...]) demand scenarios described in Section d) of this Section are compared to three different sets of capacity aggregation both under the scenario in which capacity is estimated with no size restriction (upper bound) and when capacity is estimated with size restriction (lower bound).¹⁶⁵⁵
- (955) In terms of aggregation of capacity, the analysis first considers the case where the only two competitors of the Parties are SHI and CSSC Hudong (the latter with its two shipyards). Under this scenario, the capacity of these two competitors would be able to serve only between [...] and [...] of the (future) demand depending on the specific assumptions made for the estimation of capacity and demand. As a result, the merged entity would be able to set its prices in the knowledge that [...] to [...] of the demand could only be served by them. However, the Commission considers that the capacity estimates that do not take account of size restriction are less realistic. Considering only the scenarios which take account of size restrictions the merged entity would know that between [...] and [...] of demand could only be served by them.
- (956) On a conservative basis, the Commission also presents a scenario in which the Japanese shipbuilder KHI is included among the LLNGCs competitors since in the market investigation it emerged that [...].¹⁶⁵⁶ If KHI were considered to be among the competitors of the Parties, then the range of demand that could be served by these competitors would be between [...] and [...] depending on the various assumptions about demand and size restriction. These competitors would not be able to serve the entire market, even under the most negative demand scenario and under the

¹⁶⁵⁵ Although DSME's capacity estimate with size restriction is higher than without, overall residual capacity is always higher using estimates without size restriction.

¹⁶⁵⁶ [...]. However, the Commission also notes that KHI withdrew from the tender before [...] made the final decision (see article "Korean Shipbuilders Confident of Landing Mega Order" [DOC ID: 3269]). In the Commission's view, these instances only confirm the limited if not absent competitive constraint exerted by KHI on the Parties.

assumption of no size restriction for the estimation of capacity. Under the more realistic estimates, taking into account size restriction, the merged entity would still have control over a sizeable portion of demand ([...]).

- (957) This analysis shows that the merged entity would be pivotal post-Transaction and could exert its market power obtained through this aggregation of capacity in a single entity. DSME is the one that has the highest capacity for LLNGCs among the Parties with size restriction. Therefore, it is possible to check whether absent the Transaction DSME was pivotal or could be expected to become pivotal in the future.¹⁶⁵⁷ This analysis is presented in the third row of each capacity case in **Table 41** where the ratio is computed considering the capacity of HHI, SHI and CSSC Hudong. Under this analysis, it is possible to observe that DSME was not pivotal in the period 2016-2020 under both capacity estimates, looking at both orders and deliveries. Furthermore, in that period there were also other shipbuilders active in LLNGCs (e.g. Japanese shipyards, STX) that later exited the market, hence having reduced any scope for DSME being pivotal. These shipyards stopped winning orders after [...] and delivered the last carriers in the period [...]. Looking at the future shows that DSME (and likewise also HHI) could also become pivotal individually absent the Transaction in the most optimistic scenarios for demand. Nevertheless, this result does not dispel the competitive concerns of the Commission as the Transaction would indeed significantly increase the level of pivotality of the joint entity as compared to the level of pivotality that could have been obtained by the two standalone entities.
- (958) As the Commission has excluded the shipyard SHI-Zvezda from the capacity assessment, it could be argued that the likely captive demand of this shipyard should be removed from the market supply/demand assessment. In this context, as discussed in, amongst others, **Section 8.3.8.3 (B) c)**, the Commission notes that SHI-Zvezda is fully dependent on SHI's know how and technology. Furthermore, it is meant to serve Russian demand and, in addition to not having delivered any LLNGCs yet, it is not clear whether and when it will be able to do so, even under SHI's technological assistance. Therefore, the Commission makes the following considerations. First, given SHI-Zvezda's dependence on SHI's know how and technology, ordering from SHI-Zvezda means de facto ordering from South Korea (from SHI in this case). Second, even if SHI-Zvezda were considered as non-Korean (quod non),¹⁶⁵⁸ the Commission considers that, given SHI-Zvezda's longer estimated construction time, it cannot be excluded that Russian demand will go partially (if not entirely) back to ordering directly from South Korean shipbuilders. [Parties' internal document].¹⁶⁵⁹
- (959) As an additional robustness check, the Commission presents a scenario in which it assumes that SHI-Zvezda will absorb orders for [...] LLNGCs during the next five years (that is more than [...] vessels per year).¹⁶⁶⁰ Under this extreme scenario, the Parties (**Table 42**) will still be jointly pivotal under both capacity estimation methods and under all the scenarios for demand. Even under these extreme assumptions the

¹⁶⁵⁷ If DSME was not pivotal then also HHI would not be pivotal as it has a lower capacity.

¹⁶⁵⁸ SHI-Zvezda's LLNGC capacity is purely theoretical as SHI-Zvezda has never built any LLNGCs. Therefore consistently with the approach taken in Section 7.4.1.3 of the SO, SHI-Zvezda's theoretical capacity has not been counted within SHI's capacity.

¹⁶⁵⁹ The Notifying Party's reply to question 7 of RFI 67, Annex Q 7.2.9, page 7. See also the Notifying Party's reply to question 7 of RFI 45, Annex Q7.2.26, slide 9 of 23 July 2020.

¹⁶⁶⁰ The Commission notes that this is likely to overestimate SHI-Zvezda capabilities as the HHIH's internal document "Annex Q4Zvez13.5 – HHI – updated proposal for cooperation (February 2019)" submitted in response to RFI 30 indicate in 4 LLNGCs per year the capacity of Zvezda.

Parties will still become pivotal post-merger under all forecasts. Furthermore, the Commission observes that it is highly unlikely that a new entrant like SHI-Zvezda will be able to take this high level of orders in this short period of time and a higher proportion of LLNGCs of this captive Russian demand could be open for competition. **Table 43** shows the RSI analysis considering a revised Russian captive demand of [...] LLNGCs in a five year period on average, in line with SHI-Zvezda's purely theoretical capacity estimates of [...] LLNGCs a year,¹⁶⁶¹ as shown by certain [...] of the Parties and explained at **paragraph (1048)** below. **Table 42** and **Table 43** below present the same results from the RSI analysis for LLNGCs for the period 2021-2025. In light of this, the Commission considers that, regardless of whether the estimated Russian demand (being it of [...] LLNGC or [...] LLNGCs in a five year period) is included or not in the RSI analysis, the Parties, as shown in **Tables 9 and 10** below would still be pivotal. The results illustrate the robustness of the Commission's results by showing that even if demand was [...] or [...] units lower than forecasted, the Parties would still be very pivotal given the Transaction.

Table 42 Updated RSI analysis using the Q3/2021 forecasts (alternative scenario excluding Russian captive demand of [...] LLNGCs in a five year period on average)

[...]

Source: Commission computation on the basis of Clarksons and MSI data submitted in response to RFI 67.

Table 43 Updated RSI analysis using the Q3/2021 forecasts (alternative scenario excluding Russian captive demand of [...] LLNGCs in a five year period on average)

[...]

Source: Commission computation on the basis of Clarksons and MSI data submitted in response to RFI 67.

f) The Notifying Party's most recent RSI analysis

- (960) The above calculations were presented to the Notifying Party in the Second Letter of Facts of 19 November 2021. In their reply, the Notifying Party presents a new set of RSI calculations with a new set of assumptions about capacity and demand which it argues present “*realistic assumptions*”. These include that (i) SHI has either [...] unit of capacity (ii) CSSC has [...] units of capacity; (iii) Japanese competitors may re-enter the market; (iv) [...] Russian units of demand should be excluded from the analysis as they will be absorbed by Zvezda; (v) the [...] options represent demand and supply that have already been realized and should therefore be excluded from the RSI analysis. On the basis of these new sets of assumptions, the Notifying Parties show a number of calculations where almost all of them result in a residual supply index above 1 (i.e. that competitors can absorb demand in its entirety).¹⁶⁶²
- (961) The Commission must also dismiss these calculations on similar ground as described above in that they do not represent realistic assumptions of the current and future LLNGC market. First, as explained in **Sections 8.3.4.3** and **8.3.8** as well as in **Section 8.3.7.2 (B) b)** above, the Commission reiterates that it does not view Japanese shipyards as relevant in the current and future LLNGC market.

¹⁶⁶¹ As explained in **Section 8.3.8.3(B) c)** the Commission does not consider SHI-Zvezda as either an autonomous shipbuilder or as a new entrant nor as a likely, timely and sufficient new entrant. As a consequence, SHI-Zvezda's LLNGC capacity is to be considered merely theoretical.

¹⁶⁶² Tables 5-8 of Reply to Second Letter of Facts.

(962) Second, in response to the assumptions on SHI's and CSSC's capacity, the Commission again points to the differential treatment the Notifying Party gives to these shipbuilders. They estimate capacity in a similar way to the Commission for the remaining shipyards, but cherry-pick external information to claim that SHI and CSSC should be attributed higher capacities.¹⁶⁶³ The Commission considers that a capacity estimate of [...] for CSSC is too high, as explained in **paragraph (937)** above as well as in **Section 8.3.4.2**. Additionally, the Commission explains in **Section 8.3.4.1** that SHI neither has the ability nor the incentive to build [...] LLNGCs a year while keeping its current product mix. However, as apparent from **Table 11** below, even in an extreme and hypothetical scenario where SHI would have the ability and incentive to build [...] LLNGCs a year and CSSC would build [...] LLNGCs per year, the merged entity would remain pivotal under the Clarksons forecast for 2021-2025 and the average Clarksons-MSI forecast for the 2021-2025 period. Even considering Russian captive demand as shown in **Table 42** and **Table 43** the merged entity would be pivotal under Clarksons forecast for 2021-2025 and the average Clarksons-MSI forecast for the 2021-2025 period.¹⁶⁶⁴ This exemplifies that even under extreme scenarios, with unrealistically high capacity estimates, the Parties would still become pivotal given the merger. Additionally, the outcome of the analysis shown in the tables below illustrate that even if the residual capacity of the competitor's was [...] units higher than the Commission's estimates, which constitutes an increase of around [...], the Commission would still conclude that competitors' capacity would not sufficiently constrain the Parties. This confirms the robustness of the Commission's assessment of capacity in the market and pivotality of the Parties.

Table 44 Updated RSI analysis using the Q3 2021 forecasts with SHI yearly capacity at [...] LLNGCs

[...]

Source: Commission computation on the basis of Clarksons and MSI data submitted in response to RFI 67.

Table 45 Updated RSI analysis using the Q3 2021 forecasts with [...] LLNGCs yearly to SHI and [...] LLNGCs allocated at SHI-Zvezda from 2021-2025

[...]

Source: Commission computation on the basis of Clarksons and MSI data submitted in response to RFI 67

Table 46 Updated RSI analysis using the Q3 2021 forecasts with [...] LLNGCs yearly to SHI and [...] LLNGCs allocated at SHI-Zvezda from 2021-2025

[...]

Source: Commission computation on the basis of Clarksons and MSI data submitted in response to RFI 67.

(963) Third, regarding the exclusion of the [...] options, the Commission finds fault in the Notifying Party's approach. On the demand side, they remove all of the estimated contracted orders they attribute to the [...] options, however, on the supply side they do not remove all of the capacity tied up by the options. The Commission notes that even if some options are not subsequently exercised, the shipbuilders must still keep the reserved capacity available for the possibility of a [...] order. Additionally, the

¹⁶⁶³ Calculations/Stata Code submitted by the Notifying Party in Response to the Second Letter of Facts.
¹⁶⁶⁴ In Tables 11 to 13, HHI's capacity is estimated at [...] as in the non-size restriction scenario.

Commission finds no basis to the assumption that [...] will exercise the same proportion of options at each shipbuilder, and therefore the Notifying Party's methodology appears to be underestimating the actual orders awarded to the Parties' competitors. Furthermore, it makes assumption about the number of vessels from [...] that are included in the forecasts of MSI, without having any basis for doing so. As a result, the forecasted demand from MSI in the period 2022-2026 is estimated to be between [...] and [...] vessels.¹⁶⁶⁵ These assumed forecasts appear unrealistically low when compared for instance to the fact that out of the [...] vessels ordered in the course of 2021 (up to 30 September 2021),¹⁶⁶⁶ only [...]¹⁶⁶⁷ came from [...]. CSSC and SHI together have more than [...] options with the [...] that are reserving capacity in their shipyards, which would account for a decrease in the residual capacity of more than [...] LLNGCs per year.¹⁶⁶⁸ This is significantly more than the [...] and [...] that is excluded in the Notifying Party's analysis.¹⁶⁶⁹ As a result, the Parties' competitors would be have less capacity than shown in the Notifying Party's analysis. This causes their RSI values to be inflated.

g) *Incentive to raise prices and Minimum Required Price Increase*

- (964) The Commission preliminarily notes that, it is not necessary for the finding of a significant impediment to effective competition through the creation of a dominant position to establish precisely how the merged entity will exercise its market power through the means of an economic model. The Commission further notes that the method proposed by the Notifying Party to calculate a Minimum Required Price Increase which would be necessary to implement a pivotality strategy, only addresses one of several ways in which the merged entity could exercise its market power. Nevertheless, when correcting the Notifying Party's calculation to reflect plausible assumptions, it is apparent that the Minimum Required Price Increase is not unreasonable, thus showing that the merged entity could profitably implement a pivotality strategy.
- (965) In the Response to the SO, the Notifying Party criticises the Commission for not carrying out a "*separate incentive analysis*" to establish that the merged entity would have the incentive to increase prices and to increase them materially.¹⁶⁷⁰
- (966) In the Response to the Second Letter of Facts, the Notifying Party further reiterates that the Commission has fundamentally erred by equating pivotality with market power.¹⁶⁷¹ It argues that even if the merged entity would become pivotal, the Commission must also show that the Parties have an incentive to exploit the pivotality by restricting output and/or increase prices. It further argues that it would be unfathomable for any shipbuilder to deliberately miss out on an available order. To further substantiate its claim that the merged entity would not have any incentive to take advantage of their pivotality, the Notifying Party provides an analysis on the Minimum Required Price Increase (MRPI) that would be necessary for a hypothetical pivotality strategy to be profitable¹⁶⁷². The pivotality strategy would

¹⁶⁶⁵ Which would also include any Russian captive demand.

¹⁶⁶⁶ The Notifying Party's reply to question 16 of RFI 67, Annex Q.16 and to question 38 of RFI 67, Annex Q.38.

¹⁶⁶⁷ [...] reply to question 1(a), (b), (c) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 5974]

¹⁶⁶⁸ [...] reply to question 2(a), (b), (c) of RFI 5 to [...] dated 11 October 2021. [DOC ID: 5974]

¹⁶⁶⁹ Reply to the Second Letter of Facts, Tables 5-8.

¹⁶⁷⁰ Response to the SO, page 8 and Annex B.1.-Dr. Padilla Expert Report.

¹⁶⁷¹ Reply to the Second Letter of Facts paragraph 14-16.

¹⁶⁷² Reply to the Second Letter of Facts paragraph 166.

consist of waiting until the competitors had filled up their capacity and then exercising monopoly power over the residual demand. The MRPI value represents the minimum percentage increase in price needed in order to have a higher profit serving the residual demand only, instead of selling to their predicted market share at previous margins. The Notifying Party proposes this methodology arguing that a high MRPI values should be considered a screening tool to identify instances where a firm is unlikely to have incentives to exercise pivotality and increase prices. Hence, if MRPI values are high, there should be no competition concerns even if the merged entity would become pivotal. Conversely, they argue that a low or moderate MRPI value would not warrant a clear conclusion. While such price increases may appear more plausible, it is far from certain in practice that they will be implementable.¹⁶⁷³

- (967) The Notifying Party calculates the MRPI and report them in their own RSI analyses. In their reply to the Second Letter of Facts, they also apply the methodology to the most extreme capacity scenarios of the Commission’s RSI Analysis. The calculation of the MRPI requires as input RSI values, market shares, and expected gross margins. For the market shares, the Notifying Party uses the market share of the Parties calculated in units from 2017-2021. However, for the gross margins, they use the average of the yearly averages of gross margins for HHI and DSME for the period 2012-2021. When the Notifying Party uses their own RSI values, it describes the MRPI values as unrealistically high. When the Notifying Party applies them to the most extreme capacity scenario considered by the Commission, the lowest MRPI they find is [20-30]% at which level they consider it almost certain that new entry by other shipyard would be triggered.¹⁶⁷⁴ The Notifying Party argues that this illustrates that the RSI analysis should remove competitive concerns, since the merged entity would not find it profitable to employ a pivotality strategy.
- (968) The Commission preliminarily notes that the Notifying Party is not presenting an accurate reading of the Horizontal Merger Guidelines nor an accurate interpretation of the standard of proof necessary for the finding of a Significant Impediment to Effective competition through the creation of a Dominant Position. In this case, the Commission has followed the method set out in the Horizontal Merger Guidelines and established a Significant Impediment to Effective Competition through the creation of a Dominant Position. It did so not solely on the basis of the pivotality analysis, but by establishing a number of key factors that indicate the creation of a dominant position. These include high market shares, an analysis of closeness of competition and innovation, high barriers to entry, and a lack of sufficient spare capacity of competitors etc. It is not correct to present, as the parties do, that in addition to high market shares, pivotality and low MRPI are additional “screens” that together would be necessary, albeit insufficient, in order to establish a significant impediment to effective competition through the creation of a dominant position.
- (969) More specifically, as regards the incentives to raise prices, the Horizontal Merger Guidelines stipulate that it is already possible to infer an increased incentive to raise prices and/or reduce output from the very large addition of market shares in the current case: *“The larger the increase in the sales base on which to enjoy higher margins after a price increase, the more likely it is that the merging firms will find such a price increase profitable despite the accompanying reduction in output”*.¹⁶⁷⁵

¹⁶⁷³ Annex 01 to the Reply to the Second Letter of Facts paragraph 3.8.

¹⁶⁷⁴ Annex 01 to the Reply to the Second Letter of Facts paragraph 3.15.

¹⁶⁷⁵ Horizontal Merger Guidelines paragraph 27.

- (970) As to the incentives of competitors, the Horizontal Merger Guidelines clearly state that: *“When market conditions are such that the competitors of the merging parties are unlikely to increase their supply substantially if prices increase, the merging firms may have an incentive to reduce output below the combined pre-merger levels, thereby raising market prices”*.¹⁶⁷⁶ In this respect it should be recalled that *“Non-merging firms in the same market can also benefit from the reduction of competitive pressure that results from the merger, since the merging firms' price increase may switch some demand to the rival firms, which, in turn, may find it profitable to increase their prices. The reduction in these competitive constraints could lead to significant price increases in the relevant market”*¹⁶⁷⁷
- (971) Therefore, once it is established through the analysis of pivotality that competitors would not have the ability to increase output to defeat a price increase it follows that the merged entity would have the incentive to increase prices.
- (972) While in some circumstances useful, it is not always possible, nor necessary or appropriate, for the Commission to produce a fully specified economic model which predicts exactly how the increased market power created by the merger as well as the likely reaction by competitors would manifest itself in the market in terms of reduction in output and/or increases in prices or through other forms of harm to consumers. In particular, in the context of the current case, the Commission has not found that it would be possible to adequately capture all the many complicating relevant factors that characterise the market into one economic model on the basis of the information available. These factors include inter alia that certain customers have preferences for certain suppliers (e.g. Russian and Chinese customers), suppliers are offering products of, inter alia, differentiated quality (See **Section 7.1.1**), suppliers face capacity constraints that relate both to the size of the docks, quay space and other production factors, the very limited fungibility of these production factors across ship types and many others.
- (973) In this respect, and as also admitted by the Notifying Party,¹⁶⁷⁸ the particular hypothetical pivotality strategy of only selling to the residual demand, which is the basis for the MRPI analysis, is only one way in which the market power could manifest itself. Indeed, in the Response to the SO the Notifying Party had provided in a formal presentation of a model,¹⁶⁷⁹ which in a simplified stylistic form investigate competition between capacity-constrained firms facing future demand uncertainty as well as uncertainty about the future market structure. Within the confines of this model, the authors find that incentives to increase prices in the market are indeed related to whether firms are pivotal as measured by the Residual Supply Index: *“We find that the expected average price (across the two periods) is increasing on the so-called residual supply index (or RSI) of the industry for either of the pivotal firms ... We also find that, given RSI, the expected market price is growing when the probability of future entry fall and the probability of future demand grows. Interestingly, the expected market price reacts more to changes in the likelihood of entry than in the probability of positive future demand”*. This model is a generic model, which does not provide any precise estimates of price increases relevant for the current case. However, it does confirm that even in the presence of

¹⁶⁷⁶ Horizontal Merger Guidelines paragraph 32.

¹⁶⁷⁷ Horizontal Merger Guidelines, paragraph 24.

¹⁶⁷⁸ Reply to the Second Letter of Facts, paragraph 160.

¹⁶⁷⁹ Annex 1 to [...] Expert Opinion entitled “Dynamic Bertrand-Edgeworth Competition with Uncertain Demand and Entry” dated May 18, 2021 by Cattaneo, Franchetti, Padilla and Piccolo.

uncertain demand, an increase in pivotality will lead to higher prices: “Of course, other things equal, equilibrium prices are greater when firms’ pivotality is increased”.

- (974) Nevertheless, it is apparent from the below that an MRPI analysis, if carried out on the basis of the what the Commission considers the most appropriate assumptions regarding capacity and future demand, very clearly shows that the merged entity would have increased incentives to carry out a so-called pivotality strategy.
- (975) First, the Commission notes that the MRPI analysis is very sensitive to the size of the RSI index, since the RSI will determine how much demand is left for the merged entity once all competitors have filled up their capacity.¹⁶⁸⁰ The Notifying Party in its submission ignores the Commission’s baseline scenario for the likely RSI as outlines in **Table 41** above, but produce only MRPI calculations for scenarios presented to illustrate the robustness of the concerns that inter alia assume that SHI will have capacity of at least [...] LLNGCs per year, which the Commission has shown to be unrealistic. It is thus necessary to apply the MRPI calculations to the scenario the Commission considers most likely.
- (976) Second, the Commission notes that the Parties have relied on estimates of gross margins, which appear high in light of the data available. In 2020 and 2021 average gross margins for HHI and DSME were [5-10]%¹⁶⁸¹ which is notably lower than the gross margins used by the Notifying Party in their MRPI analysis of [10-20]%. Since lower margins cause a firm to have more incentive to employ a pivotality strategy, this causes the Parties’ MRPI to be inflated. Even though it is the most recent data, one could argue, that 2020 and 2021 are unusual years. However, margins were still notably lower when considering the same period the Notifying Party used for the market share calculation; the average expected gross margins over 2017-2021 were [10-20]%¹⁶⁸².
- (977) Calculating the minimum required price increase using the 2017-2021 margins and the RSI values from the Commission’s baseline capacity scenarios produces values between [...] and [...], depending on which demand estimates are used and if capacity is calculated using size restriction. If focussing on the average forecast of Clarksons and MSI, the MRPI would be either [...] or [...] depending on whether one apply the capacity estimates with or without size restrictions. In other words, and to illustrate the results: were the merged entity to increase its prices with, say a mere [...], the calculations shows that even if this resulted in all customers only choosing the merged entity when the other competitors had no more capacity to offer (which is far from given since competitors may also respond by increasing prices), and competitors capacity was estimated without taking into account any size restriction, this would be a profitable strategy in the scenario where future demand would arise according to the average of Clarksons and MSIs forecast. Furthermore, this calculation does not even take into account that the merged entity could seek to fill the slots freed up by this strategy to produce other ships with a positive (albeit possibly lower) gross margin.
- (978) These Minimum Required Price Increases all appear very plausible in the setting of LLNGCs, a market that often experiences price fluctuations of a similar or larger

¹⁶⁸⁰ The formula for MRPI used by the Notifying Party and Commission is $MRPI = margins * (\frac{Share}{1-RSI} - 1)$.

¹⁶⁸¹ Calculated using DSME’s and HHI’s tender data submitted in response to RFI 65.

¹⁶⁸² Calculated using DSME’s and HHI’s tender data submitted in response to RFI 65.

magnitude (as discussed in **Section 8.3.9.2(B) b)**). In this respect, it should be noted that DSMEs own gross margin has fluctuated from year to year and in 2011 were significantly above [20-30]%.¹⁶⁸³ This illustrates that the MRPIs as calculated cannot be considered unrealistic nor liable to trigger new entry.

- (979) Finally, it should be noted that while the MRPI analysis does not take account of a number of complicating factors, it is misleading to portray it as a screen for excluding possible incentives to exercise market power. Firstly, because as mentioned above, there are other scenarios that could arise which would take into account the competitors incentives to increase their prices as mentioned in paragraph 24 of the Horizontal Merger Guidelines. Secondly, even if the pivotality strategy were to be implemented, it would free up capacity with the merged entity and it would not be correct to assume, as the Notifying Party's method does implicitly, that this freed up capacity could not find alternative use, inter alia by building any other vessels with a possibly lower, yet still positive gross profit.
- (980) The fact that the Transaction will provide the merged entity with the ability and incentive to increase prices and that SHI and CSSC may well have the ability and incentive to follow a potential price increase of the Parties is also supported by the market investigation. As explained by a customer, *"[a]s it happens in every industry in which track record plays a crucial role, those with the highest track record will tend to not perceive other shipbuilders as genuine rivals since international customers will tend to consider other shipbuilders as last resort. Other shipbuilders are aware of this and will tend to charge a even higher price". [...] [We] [...] [expect] the price of large LNG carriers to go up after the proposed transaction in Korea as well as in China"*.¹⁶⁸⁴ Another customer, which has recently [...], for this reason, it necessarily had to place its order from more than one shipbuilder ([...]) and above in this Section), i.e. HHI, DSME, SHI and CSSC (Hudong),¹⁶⁸⁵ stated that it is *"[...] very concerned about the proposed transaction as [it] expect[s] that prices of large conventional LNG carriers will go up as a consequence of the reduction of the number of Korean shipbuilders, which are the real competitors in large LNG carriers, from three to two"*.¹⁶⁸⁶
- (981) This is also confirmed by another customer, which stated that *"[t]he proposed transaction may create an oligopoly (reduction from three Korean market leaders in LNG carriers to two with dominant role) and quite likely have an effect on increasing prices. Usually if the price of an LNG conventional carrier is increased by one shipyard, the others will probably not undercut it but they will follow as well most likely trying to take advantage of the situation since shipyards claim that in the recent past were not able to make any good profits. This will likely be reflected in an increase in shipbuilders' margins as well."*¹⁶⁸⁷ Another customer explains that *"[...] ordering from a shipbuilder it has never ordered before is not always straightforward and mostly depends on whether [...] has already worked with a given shipbuilder in the past. Ordering from a shipbuilder from which you have never ordered before entails a certain due diligence process that needs to be carried out and, when it comes to LNG carriers, experience and track-record are important*

¹⁶⁸³ Cf. Figure 1 in Annex 01 to the Reply to the Second Letter of Facts.

¹⁶⁸⁴ Minutes of the conference call with [...] dated 26 February 2020, paragraph 14. [DOC ID: 2900]

¹⁶⁸⁵ Minutes of the conference call with [...] dated 25 February 2020, paragraph 4. [DOC ID: 2350]

¹⁶⁸⁶ Minutes of the conference call with [...] dated 25 February 2020, paragraph 16. [DOC ID: 2350]

¹⁶⁸⁷ Minutes of the conference call with [...] dated 17 February 2020, paragraphs 8-9. [DOC ID: 2958]

when deciding from which shipbuilder to place a given order.”¹⁶⁸⁸ Another customer explains that “[...] the merged entity would end up controlling roughly 60% of the market for LNG carriers and for the market for FSRUs; second, after the merger, [...] will be in a much weaker position during contract negotiations; third, after the merger, there will be only one credible alternative, i.e. Samsung; fourth, vessels price are likely to increase after the merger [...]”.¹⁶⁸⁹

(982) This is also confirmed by internal documents submitted by the Notifying Party mentioned in **Section 9.1.1** [...].¹⁶⁹⁰

(983) In light of the above, of the fact that the demand side of the market is relatively fragmented while the supply side very concentrated and of the fact that, as explained in **Section 8.3.7.2 (B) a)** demand for LLNGCs is expected to increase, the Commission considers that customers would be unlikely to defer orders in case of a post-Transaction price increase and more likely to secure a slot. This is shown by speculative orders that are made in periods of increasing demand and that are made from shipbuilders with a strong track record. This is confirmed by a customer which states [...].¹⁶⁹¹ For example, as described in one industry report referring to 2018 and 2019, which represented years with very high orders, it is stated that “[i]n the first nine months of 2019, contracting did come down from all-time high seen in 2018, with a total of 35 ships ordered, equalling 8% of the fleet. All orders were placed by established shipowners with fleets of more than ten ships. However, 16 ships were ordered by shipowners new to the LNG market. Most of these orders were placed speculatively without long-term charter contracts. [...]”.¹⁶⁹² As explained by one customer: “[...] [we] would not order on speculation (without a charterer) from CSSC or from any other shipbuilder without a solid track record. The issue with ordering on speculation is that the owner has to be certain that there is a customer base for such a vessel. [...]”.¹⁶⁹³

(984) Therefore, the Commission concludes that the Notifying Party’s arguments regarding the lack of incentives to increase prices after the Transaction are not pertinent.

Table 47 MRPI Values for the Commission’s Baseline RSI Calculations

[...]

Source: Commission computation on the basis of Clarksons and MSI data submitted in response to RFI 67, DSME and HHI tender data submitted in response to RFI 65, and Marketshare and margin data from the Notifying Party’s MRPI calculations submitted in reply to the second Letter of Facts.

(985) In response to the table above, the Notifying Party argues that one should calculate these MRPI’s based on the scenario removing [...] units of captive Russian demand.¹⁶⁹⁴ These calculations are shown in **Figure 54** below. These additional MRPI values support the same conclusions reached with the calculations above. In particular, relying on the average of Clarksons and MSI for forecasts suggests that MRPI would be in the interval between [...] and [...] depending on how margins are calculated. All of these appear wholly plausible to implement.

¹⁶⁸⁸ Minutes of the conference call with [...] dated 17 February 2020, paragraph 7. [DOC ID: 2609]
¹⁶⁸⁹ Minutes of the conference call with [...] dated 19 February 2020, paragraph 8. [DOC ID: 2486]
¹⁶⁹⁰ The Notifying Party’s 5.4 documents, “KDB-related” dated 2 August 2018, slide 14, Report related to KDB, Form CO, Annex 5.4.6.
¹⁶⁹¹ Minutes of the conference call with [...] dated 6 February 2020, paragraph 15. [DOC ID: 1730]
¹⁶⁹² [...].
¹⁶⁹³ Minutes of the conference call with [...] dated 24 February 2020, paragraph 10. [DOC ID: 2663]
¹⁶⁹⁴ Response to additional facts provided on 3 December 2021, paragraph 1.4.

Figure 54 MRPI Values calculated by the Notifying Party

[...]

Source: Notifying Party's to additional facts provided on 3 December 2021, Figure 1. The MRPI values are based on Commission RSI values found in Table 43

h) Historical RSI Analysis

- (986) In Response to the Second Letter of Facts the Notifying Party has submitted an RSI Analysis using capacity estimates calculated with a methodology similar to the Commission's to past years. For each year from 2011 to 2021 they compute shipyards' balanced capacity in an almost identical way to the Commission. First they calculate the base capacity by looking at the maximum CGT output of the shipyard in the 12 years prior to the relevant year with restriction on the size of the vessel, then they subtract the typical CGT capacity used for non-LLNGC vessels. To find the residual capacity they add up the capacity for all competitors that have received a contract within the last 3 years. For the demand side, they use actual demand outcome for years before 2021, and Clarksons' Forecast for years afterwards. Using this methodology, they show that RSI values have been notably low for HHI and DSME individually for recent years. In addition, they note that margins for both companies have been low in the years following the years where the RSI analysis calculated RSIs below one. They claim that this illustrates that the Commission's methodology is flawed, since neither DSME nor HHI exercised any market power. They show that under other capacity assumptions, HHI and DSME would not have been pivotal in the past. Applying these alternative assumptions to current data produces RSI values above one, given the transaction. Therefore, the Parties claim that there should be no competition concerns, since the capacity of competitors is large enough to serve the entire market, given capacity estimates they believe to be more realistic.
- (987) The Commission finds certain faults in the calculations done in this submission. However, first, it should be recalled that the finding of a significant impediment to effective competition in the current case does not rest on the finding of pivotality alone, but on a number of factors including closeness of competition, market shares etc. As such, the prospective pivotality after the Transaction based inter alia on market shares significantly above the level in which is an indicator of dominance can not be equated with that of each of the Parties historically. Low RSI values increases the concern for competition issues, however they cannot be seen in isolation. Although the Parties have had low individual RSI values in the past, they never have had a market share anywhere close to the one they would have after the Transaction. Therefore, historical margin outcomes cannot be used to negate the validity of the Commission's assessment.
- (988) Second, the Commission points to an incorrect assessment of which shipbuilders' capacities are included in the historical RSI Calculations. Any shipbuilder actively producing an LLNGC should be considered to be active in the market. As an example of how the Notifying Party's methodology on capability is too strict, MHI's and other shipbuilder's capacities are excluded before they delivered their last LLNGC. This means that the RSI values that the Parties calculate are significantly lower than they would be with a more realistic assessment of a shipyard's capability, since they exclude the capacity of relevant active competitors.
- (989) Third, in their calculations the Notifying Party relies on actual demand outcomes instead of forecasts from the respective years. It is very likely that HHI and DSME

have based their commercial strategies on forecasts that were different from what is subsequently realised. To illustrate, the Notifying Party's methodology suggests that in, say 2016, the parties should have increased their margins because on the grounds of "rational expectations"¹⁶⁹⁵ they should have anticipated that demand including in 2020 turned out to be rather high. As new realised orders are volatile from one year to the next, this implicit assumption is important for the results, yet not warranted. In that respect it is recalled that the Notifying Parties themselves in the course of this procedure erroneously predicted that demand for LLNGCs was expected to be negatively impacted by weaker winter gas pricing and the drop in Chinese demand and imports in light of COVID-19 developments.¹⁶⁹⁶

- (990) Fourth, the Commission would like to point out that in these historical calculations, the Notifying Party relies on the more positive Clarksons forecast and the more conservative capacity estimate with size restriction. The Commission's own RSI calculations using the same forecast and capacity assumptions produce an RSI value of [...], which is notably lower than the RSI values calculated in the Parties' historical analysis. Hence, the degree of capacity concentration in the past was not close to as extreme as what would be seen given the transaction. Therefore, market outcomes in the past are not indicative of the market power that the parties could assert given the transaction.

8.3.7.3. Conclusions

- (991) The Commission notes that, as explained in **Section 8.3.6**, the current and future market outlook of LLNGCs is positive. In this context, given that LLNGCs are not homogenous goods, capacity is only one among the various factors relevant to the assessment of the dynamics of competition in the LLNGC market, the data and the market investigation show that supply/demand is balanced and that capacity is not as fungible as presented by the Notifying Party. The RSI index examined in this Section is particularly suitable to market situations where the products in question are homogenous. As in the LLNGC market there is an important amount of product differentiation and customers have different assessments of the quality of the different suppliers, an RSI analysis would not in itself be probative as to dismiss competition concerns in the presence of very significant market shares as in the current case. While informative, the results in the current case are further exacerbated by the analysis of closeness of competition, which establishes that the three Korean suppliers (HHI, DSME and SHI) are close competitors compared to CSSC (Hudong).
- (992) Nevertheless, within these confines, the Commission has shown that when correcting the Parties' analysis of supply and demand to reflect realistic scenarios, it is most reasonable to conclude that the Parties' competitors would not have the spare capacity to constrain the Parties after the Transaction.
- (993) In this RSI analysis the Commission has considered a wide range of demand scenarios, including recent historical averages and multiple demand forecasts from different industry trusted analysts. Capacity has been estimated based on a methodology similar to the one originally proposed by the Notifying Party, to calculate two different capacity estimates for each active LLNGC shipbuilder.¹⁶⁹⁷

¹⁶⁹⁵ Annex 01 to the Reply to the Second Letter of Facts paragraph A.8.

¹⁶⁹⁶ The Notifying Party's submission of 29 April 2020 "Impact of COVID-19 on the Proposed Transaction", paragraph 2.13.

¹⁶⁹⁷ As discussed thoroughly in previous Sections, the Commission views the current active shipbuilders in the LLNGC market to be HHI, DSME, SHI, and to a non sufficient extent CSSC.

The results clearly points to the conclusion that the Parties would be pivotal in all demand scenarios for both capacity estimation methods.

- (994) In particular, these results are very robust to possible changes in both the demand and supply. **Table 42** and **Table 43** show that even if demand was [...] or [...] units lower than forecasted, the Parties would still be very pivotal after the Transaction. The outcome of the analysis shown in **Table 44** illustrates that even if the residual capacity of the competitors was [...] units higher than the Commission's estimates, an increase of around [...], competitors' capacity would still not sufficiently constrain the Parties.
- (995) Therefore, the Commission concludes that, in line with the results of the market investigation, supply and demand is balanced, and that the Parties will have control over a significant part of demand. Therefore, competitors' capacity and the supply and demand balance do not dispel the competition concerns brought forth by the aggregation that would be created by the Transaction.
- (996) The analysis of the Commission also shows that the Parties prior to the Transaction were not individually pivotal if capacity is compared with average demand of the last five years. Further, although DSME and HHI could become pivotal on a standalone basis, due to the expected increase in demand and the exit of a number of shipyards, the increase in pivotality brought about by the Transaction is sizeable and likely to significantly increase the market power of the merged entity as compared to the market power that the two separate entities would have absent the Transaction. On this basis, the Commission considers that this aggregation of capacity in the hands of the merged entity would increase the merged entity's ability and incentive to increase prices.
- (997) The Notifying Parties' argument that there would not be any incentive to exercise any market power even if the merged entity would be pivotal does not stand. Indeed, if their proposed methodology of calculating the Minimum Required Price Increase is corrected to reflect the most plausible assumptions about RSI and margins, it clearly shows that the price increases required to make a pivotality strategy profitable are not very large.
- (998) In conclusion, the Commission considers on the basis of the above analysis that under the most reasonable scenarios, the supply and demand balance is such that the Transaction is likely to strengthen significantly the market power of the merged entity and its ability and incentive to increase prices, thereby supporting the conclusion that the Transaction would lead to the creation of a dominant position.

8.3.8. *High barriers to entry and expansion*

- (999) In this Section, the Commission sets out its assessment of barriers to entry and expansion. More specifically, the Commission sets out its assessment of recent market entries and exits as well as of the extent to which entry or re-entry and expansion would be timely, likely and sufficient to counteract possible anticompetitive effects of the Transaction.

8.3.8.1. The Notifying Party's views

- (1000) In the Response to the Article 6(1)(c) decision,¹⁶⁹⁸ in the Memorandum submitted on 20 May 2020,¹⁶⁹⁹ in its submission dated 26 May 2020,¹⁷⁰⁰ in the Response to the

¹⁶⁹⁸ Response to the Article 6(1)(c) decision, paragraph 320.

SO,¹⁷⁰¹ in the Letter to DG COMP submitted on 29 June 2020¹⁷⁰², in the Response to the First Letter of Facts¹⁷⁰³ and in the Response to the Second Letter of Facts,¹⁷⁰⁴ the Notifying Party argues that there would already be a number of shipbuilders with sufficient track record capable of exerting competitive constraints post-Transaction and that barriers to entry or expansion would be sufficiently low to enable new entry or expansion. In essence, the Notifying Party submitted that the Commission mischaracterised the potential for new entry, which would constitute a real countervailing factor to any potential dominance, post-Transaction, of the Parties. Indeed, the Notifying Party argues that the Commission would have claimed that barriers to entry are very high by merely referring to the description of the construction process and by a selective use of market feedback for the following reasons.¹⁷⁰⁵

- (1001) First, the licences and the type of skills needed to build LLNGCs would not be difficult to acquire.¹⁷⁰⁶ Obtaining a GTT licence would neither be difficult nor require a long period of time. In addition, the GTT licence is accompanied by GTT's support and such licence would demonstrate intent to compete on the LLNGC market.¹⁷⁰⁷ Moreover, welding manpower and skills would not be a barrier to entry as these skills are very simple and available in the market.¹⁷⁰⁸ Indeed, welders and bonding workers would become experienced quickly as training of welders would take no more than two to three months and training of workers for bonding no more than three weeks. Their type of work would be repeated continuously and, with respect to engineering skills, GTT would independently design the LNG cargo tank and itself provide engineering services required to adapt the LNG cargo tank to the vessel. In any event, experienced workforce would be available on the market and could be dispatched from one shipyard to another within shipbuilder groups, as GTT would not require additional training or certification for the dispatched workforce.
- (1002) Second, the Notifying Party argues that technology is not a barrier to entry because it is offered by a third party and several potential entrants have already obtained a licence to use it.¹⁷⁰⁹ Moreover and more specifically, implementing the membrane tank technology could be easily obtained on the market¹⁷¹⁰ as shipbuilders would need just plywood boxes and panels, materials that are easily produced and available. This would be confirmed by [...] during the pre-notification call held with the Commission. Although it is correct that shipyards would need to be equipped with scaffolding and certain welding and bonding equipment, such facilities would not be

¹⁶⁹⁹ The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 2a. See also the Notifying Party's Letter to DG COMP dated 29 June 2020.

¹⁷⁰⁰ The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Sections 2(a) and 3(f).

¹⁷⁰¹ Response to the SO, paragraphs 637-811, 1033-1040.

¹⁷⁰² The Notifying Party's Letter to DG COMP dated 29 June 2020 and its attachment.

¹⁷⁰³ Response to the First Letter of Facts, paragraphs 175-212.

¹⁷⁰⁴ Response to the Second Letter of Facts, paragraphs 275-298.

¹⁷⁰⁵ Response to the First Letter of Facts, paragraphs 177-180.

¹⁷⁰⁶ Response to the Article 6(1)(c) decision, paragraphs 321-325; The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 2a; The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, paragraphs 2.5-2.16.

¹⁷⁰⁷ Response to the First Letter of Facts, paragraphs 181-187.

¹⁷⁰⁸ See amongst others, the Response to the First Letter of Facts, paragraphs 188-189.

¹⁷⁰⁹ Response to the First Letter of Facts, paragraphs 190-196.

¹⁷¹⁰ Response to the Article 6(1)(c) decision, paragraphs 326-327.

expensive (roughly [...] of the vessel's price and reusable) and would be available on the market. There would be no specific cranes to build LLNGCs.

- (1003) Third, track record would have a qualitative dimension rather than a quantitative dimension and track record in small LNGCs would also be relevant for LLNGCs.¹⁷¹¹ Moreover, in the Response to the First Letter of Facts, the Notifying Party argues that the Commission would have failed to examine how significant a track record has to be to enter the market. The Commission would have also failed to explain how the fact that both Parties have increased their track record since the SO was issued would pose a higher barrier to entry.¹⁷¹²
- (1004) Fourth, there would be many docks that can fit the largest LNGCs.¹⁷¹³ There would be over [...] docks longer than [...] metres in China alone, with another [...] in Korea and about [...] in Japan. There would be no fewer than 15 shipbuilders that are considered capable (including dock size) of building LLNGCs. On a more general point, the Notifying Party argues that a number of shipbuilders globally would have very large docks and heavy equipment as they are active in the largest type of vessels such as VLCCs and large containerships. Moreover, while it is true that there is equipment specific to LLNGCs, the total cost of and the lead time for the specific facility and equipment would be low.¹⁷¹⁴
- (1005) Fifth, the Commission would have overstated the barriers to entry by mischaracterising competitive parameters as barriers to entry and by overstating the difficulty of other steps required for entry. This would be especially true for commercial shipbuilders in general and those with experience in small and medium-sized LNGCs.¹⁷¹⁵ Moreover, once the correct barriers to entry would be defined and applied there would be several realistic potential entrants, whose entry would be sufficiently timely and likely.¹⁷¹⁶ Indeed, further entry both from non-LNGCs to LNGCs,¹⁷¹⁷ from small LNGCs to LLNGCs and from conventional LNGCs to FSRUs,¹⁷¹⁸ could be expected imminently.¹⁷¹⁹ There would be several shipbuilders with the necessary facilities and licences or approvals to build membrane LLNGCs¹⁷²⁰ such as CSIC (Dalian), several CSSC's yards besides Hudong and COSCO's NACKS/DACKS, SHI-Zvezda as well as players only active in small LNGCs such as Sembcorp and Keppel. The lack of track record would not prevent them from winning orders.
- (1006) Sixth, the Commission would have ignored previous examples of successful entry.¹⁷²¹ Entry statistics should be analysed in the context of the prevailing market dynamics.¹⁷²² There have been nine players entering the market in the past 10

¹⁷¹¹ The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, paragraphs 2.17-2.20.

¹⁷¹² Response to the First Letter of Facts, paragraphs 197-198.

¹⁷¹³ Response to the Article 6(1)(c) decision, paragraphs 328-329; The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 2a.

¹⁷¹⁴ Response to the First Letter of Facts, paragraphs 199-203.

¹⁷¹⁵ Response to the SO, paragraphs 640-732.

¹⁷¹⁶ Response to the SO, paragraphs 733-802.

¹⁷¹⁷ Response to the Article 6(1)(c) decision, paragraphs 146-154.

¹⁷¹⁸ The Notifying Party's submission on FSRUs dated 18 April 2020.

¹⁷¹⁹ Response to the Article 6(1)(c) decision, paragraphs 338-343.

¹⁷²⁰ See, amongst others, the Response to the First Letter of Facts, paragraphs 204-211.

¹⁷²¹ Response to the SO, paragraphs 803-811.

¹⁷²² Response to the Article 6(1)(c) decision, paragraphs 330-337.

years(not just one, namely [...]), should the Commission consider a relevant product market for equal to or above 40,000m3 LNGCs. In any event, entry should be considered at shipyard level and not at shipbuilder's level. As regards new entrants' competitiveness, delivery time would not necessarily equal the construction period as different customers have different preferences in terms of delivery time and customers would not necessarily need LNGCs quickly.

- (1007) Seventh, entry would be facilitated by cooperation agreements and know-how transfers either intra-group¹⁷²³ (as it happened in the Hyundai Samho example) or between third parties¹⁷²⁴ (as the one between SHI and Zvezda, the one between KHI and COSCO's NACKS/DACKS, the one between MHI and Imabari ("MI LNG") and the one between Mitsui and Yangzijiang (Yangzi-Mitsui)).
- (1008) Finally, there would be no indications that barriers to entry would increase following the Transaction¹⁷²⁵ as none of the potential barriers to entry mentioned in the Article 6(1)(c) decision is likely to be impacted by the Transaction. If the Parties plan to combine their R&D efforts and know-how, such efficiencies would not confer any advantage increasing barriers to entry as key technological improvements are pursued by equipment manufacturers alone or in cooperation with shipbuilders. In addition, there would be a number of competitors with a sufficient track record.

8.3.8.2. Legal framework and introduction

- (1009) When entering a market is sufficiently easy, a concentration is unlikely to pose any significant anti-competitive risk. Therefore, entry analysis constitutes an important element of the overall competitive assessment of the Transaction. For entry to be considered a sufficient competitive constraint on the merging parties, it must be shown to be likely, timely and sufficient to deter or defeat any potential anti-competitive effects of the concentration.¹⁷²⁶
- (1010) Barriers to entry are specific features of the market, which give incumbent firms advantages over potential competitors. Historical examples of entry and exit in the shipbuilding industry can provide useful examples about the size of entry barriers.¹⁷²⁷
- (1011) In the context of the Transaction and for the reasons outlined in **Section 8.3.4**, barriers to entry should also be analysed as barriers to expansion. The Commission will focus on the barriers that a shipbuilder may face when deciding to expand from vessel types other than LNGCs to LNGCs, from small LNGCs to LLNGCs and from non-membrane conventional LLNGCs into membrane LLNGCs.
- (1012) The Commission's market investigation results indicate that barriers to entry and expansion are very high in the market for LLNGCs and in the large FSRUs segment, which both require mastering a more sophisticated technology, and regardless of whether a shipbuilder is active in non-LNGCs, small LNGCs only or non-membrane LLNGCs.

¹⁷²³ Response to the Article 6(1)(c) decision, paragraphs 134-135; The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 2c. See also the Response to the First Letter of Facts, paragraph 212.

¹⁷²⁴ Response to the Article 6(1)(c) decision, paragraphs 344-346 and 136-144; The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, paragraphs 3.33-3.34.

¹⁷²⁵ Response to the Article 6(1)(c) decision, paragraphs 347-348.

¹⁷²⁶ Horizontal Merger Guidelines, paragraph 69.

¹⁷²⁷ Horizontal Merger Guidelines, paragraph 70.

(1013) Against this background, the Commission will examine below one by one the barriers to enter and expand in the market for LLNGCs. The Commission notes that at least the most relevant barriers to entry such as know-how, project management, track record, special equipment or facilities as well as delivery time and quay slots are cumulative. A new entrant (be it active in vessel types other than LNGCs or active in small LNGCs only) needs to overcome all of them to establish itself on the market. Similarly, a shipbuilder active in non-membrane conventional LLNGCs only would need to overcome all of these barriers. In its Response to the Second Letter of Fact, the Notifying Party argues that only fractions of the barriers to entry or expansions that Commission has identified would apply to those shipbuilders which, even if not active in LLNGCs, would, for example, still have sufficient project management and technology that are common across all commercial shipbuilding vessel types.¹⁷²⁸ The Commission notes that, for the reasons explained in, for example, **Section 8.3.1**, **Sections 8.3.8.3(B) and (C)**, the Notifying Party's arguments are immaterial and, even if correct (quod non) would not change the Commission's assessment.

(1014) The Commission will refer to the following entities in the following way. NACKS and DACKS, which are two Chinese yards both set up through a joint venture between KHI and COSCO, will be referred to as COSCO's NACKS and COSCO's DACKS, given that they are considered as COSCO's yards by Clarksons. Yangzi-Mitsui, a Chinese yard set up through a joint venture between Yangzijian and Mitsui, will be referred to as Yangzijian's Yangzi-Mitsui as this is considered as Yangzijian's yard by Clarksons. Zvezda will be referred to as SHI-Zvezda as Zvezda is at this stage and for the near future, totally dependent on SHI with respect to LNG technology and know-how.

8.3.8.3. The Commission's assessment

(A) Results of the market investigation

(1015) To assess barriers to entry and expansion, the Commission relied on an extensive market investigation, i.e. interviews and questionnaires to a number of market participants, all previously or currently active from the demand or the supply side in the LLNGC market. Such questionnaires contained a number of questions and sub-questions explicitly aimed at unequivocally identifying and measuring barriers to entry and expansion in the LLNGC market.¹⁷²⁹ The Commission acknowledges that few shipbuilders expressed a meaningful opinion to some of the relevant questions. However, the Commission notes that those which expressed a meaningful opinion are shipbuilders that either compete with the Parties or were indicated by the Notifying Party as capable of exerting a competitive constraint pre and post-Transaction or were singled out by the Notifying Party as potential credible new entrants.

(1016) As explained in the following Sections, the market investigation showed that entering and expanding in the market for LLNGCs is not easy due to very high barriers to entry and expansion. Such barriers to entry and expansion are: licences,

¹⁷²⁸ Response to the Second Letter of Facts, paragraph 290(a)(iii). See also Response to the Second Letter of Facts, paragraph 290(b)(i).

¹⁷²⁹ Replies to questions 55-62 of Questionnaire Q3 to Customers. [DOC ID: 3236] Replies to questions 61-65.2, 95-99.2 of Questionnaire Q8 to Customers. [DOC ID: 3241] Replies to questions 99-106 of Questionnaire Q5 to Competitors. [DOC ID: 3238] Replies to questions 48, 51-80 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

know-how/project management (especially skilled labour force), technology, track-record (both in quantitative, at least 5 (L)LLNGCs delivered on time and qualitative terms as well as no technical issues for at least 2 years since delivery), physical facilities (e.g. dock size, special equipment or facilities), delivery time and quay slots as well as financial backing.

- (1017) In paragraphs 641-670 of the Response to the SO, the Notifying Party alleges that the SO relied heavily on customers' feedback, which actually relates to parameters of competition of existing LLNGC shipbuilders rather than genuine barriers to entry/expansion. The Notifying Party further claims that the Commission's assessment is supported by customers rather than competitors' feedback.¹⁷³⁰ The Commission considers that these arguments are ill-founded in light of the following facts. First, the Commission dedicated [...] questions in the Phase I questionnaire to Competitors to barriers to entry and expansion.¹⁷³¹ In Phase II, the Commission dedicated [...] questions to barriers to entry in the questionnaire to Competitors.¹⁷³² In particular, in question 57 of the Phase II questionnaire to Competitors, the Commission asked whether there are any limitations/constraints in the access to the necessary inputs for the production of LLNGCs, which would limit the ability to produce such vessels. Second, while it is true that only [...] respondents expressed an opinion, the Commission considers that these [...] respondents are particularly representative for the following reasons. [...] and [...] are aware of the difficulties of entering and or expanding in the LLNGC market for the reasons explained in **Sections 8.3.8** and **8.3.4.3**. As regards [...] and [...]¹⁷³³, the Commission considers that the Notifying Party can hardly allege that these two shipbuilders are not representative since they were singled-out by the Notifying Party itself as potential credible entrants.
- (1018) In the Response to the First Letter of Facts,¹⁷³⁴ the Notifying Party contests the Commission's findings with respect to question 57 of the Phase II questionnaire to competitors¹⁷³⁵ because only [...] shipbuilders ([...]) responded "yes" when asked whether there are any limitations/constraints in the access to the necessary inputs for the production of LLNGCs. [...] replied "no", while [...] replied "other". Moreover, the Notifying Party argues that [...] reply would only be applicable for those shipbuilders without a GTT licence only.¹⁷³⁶ However, the Commission notes that [...] reply to question 57 of the Phase II questionnaire to competitors¹⁷³⁷ is not limited to those shipbuilders without a GTT licence as it needs to be read in a broader context. Indeed, as already explained in **8.3.8.3(C)(xv)**, [...], which has a GTT licence, stated that they cannot manufacture or install membrane LNG cargo tanks due to lack of relevant track record.¹⁷³⁸ The Commission further notes that the

¹⁷³⁰ See also The Notifying Party's Response to the First Letter of Facts, paragraphs 177-180.

¹⁷³¹ Replies to questions 99-106 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁷³² Replies to questions 51-80 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷³³ For the reasons outlined in **Sections 8.3.8.3(C) xvii)** and **xix)**, the Commission considers that neither [...] nor [...] are likely to enter the LLNGC market in a timely and sufficient manner.

¹⁷³⁴ Response to the First Letter of Facts, paragraphs 177-180.

¹⁷³⁵ Replies to question 57 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷³⁶ Response to the First Letter of Facts, paragraphs 177-180.

¹⁷³⁷ Replies to question 57 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷³⁸ In its Response to the Second Letter of Facts, paragraph 295, the Notifying Party contests the Commission's assessment of replies to question 57 of the Phase II questionnaire to competitors and argues that it is not able to comment on the Commission's justification for its assessment of [...] response "given that Section 11.5.8 [of the Second Letter of Facts] provides no further discussion on [...] stating that they cannot manufacture or install membrane LNG cargo tanks due to lack of relevant

notion of track record is closely related to know how and therefore in line with [...] reply to question 57 of the Phase II questionnaire to Competitors¹⁷³⁹, which mentions “*skilled engineers, designers and workers*” as scarce. This is consistent with what is explained in **Section 8.3.8.3(A) a)**, namely that having the GTT licence is not sufficient. With respect to [...], the Commission notes the following: if, on the one hand, [...] replied “no” to question 57 of the Phase II questionnaire to competitors,¹⁷⁴⁰ it referred to track record (again, closely related to know how and therefore in line with [...] reply to question 57 of the Phase II questionnaire to Competitors¹⁷⁴¹) in its reply to question 58 of the Phase II questionnaire to Competitors.¹⁷⁴² With respect to [...], the Commission notes that, as explained in **Section 8.3.8.3(C) xix)** it is not even a GTT licensee, with no evidence of any intention or plan to enter the market. In any event, [...] is not among those respondents which expressed a meaningful opinion in reply to question 57 of the Phase II questionnaire to competitors¹⁷⁴³ so, as explained in this Section a majority of shipbuilders that expressed a meaningful opinion indicated that there are limitations or constraints in the access to necessary inputs for the manufacturing of conventional LLNGCs, which would limit shipbuilders’ ability to manufacture such vessels.

- (1019) In question 79 of the Phase II questionnaire to Competitors, the Commission asked shipbuilders to explain how easy/difficult it is to acquire skills or equipment to build LLNGCs. Only [...] ¹⁷⁴⁴ shipbuilders expressed an opinion but the Commission nevertheless considers that these shipbuilders are representative. [...]. As regards [...] and [...], for the reasons explained above in this Section, these shipbuilders are particularly aware of the difficulties of entering and expanding on the LLNGC market. Last, [...] is also representative for the reasons explained above in this Section, as singled-out by the Notifying Party itself as a new entrant.
- (1020) In the Response to the First Letter of Facts,¹⁷⁴⁵ the Notifying Party contests the Commission’s findings with respect to question 79 of the Phase II questionnaire to competitors¹⁷⁴⁶ as in that question, the Commission would have not specifically asked what was difficult to acquire nor whether the construction of LLNGCS is more difficult than the construction of other vessel types. The Commission notes that, contrary to what is argued by the Notifying Party, the question asked shipbuilders specifically to explain how easy/difficult it is to acquire skills or equipment to build LLNGCs.¹⁷⁴⁷ Moreover, in response to and contrary to what is argued by the Notifying Party, the questionnaire did allow respondents to expand on their answers and explain (question 79.1 of Q10 to Competitors).¹⁷⁴⁸ In addition, the Commission notes that a document originating from a third party and submitted by the Notifying Party confirms that barriers to entry previously identified by the Commission are

track record”. The Commission notes, as explained in an email to the Notifying party of 7 December 2021, that this justification had already been provided to the Notifying Party in Section 9.5.13 of the First Letter of Facts.

¹⁷³⁹ Replies to question 57 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁴⁰ Replies to question 57 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁴¹ Replies to question 57 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁴² Replies to question 58 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁴³ Replies to question 57 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁴⁴ [...] shipbuilders expressed an opinion in all subquestions of question 79 except for the subquestion on dock size where [...] shipbuilders expressed an opinion.

¹⁷⁴⁵ Response to the First Letter of Facts, paragraphs 177-180.

¹⁷⁴⁶ Replies to question 79 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁴⁷ Replies to question 79 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁴⁸ Replies to question 79.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

high: [...].¹⁷⁴⁹ [...]. Therefore, this is a further confirmation that, contrary to what argued by the Notifying Party,¹⁷⁵⁰ the barriers to entry identified by the Commission as they emerged from the market investigation, are not just a “*mere description of the building process and competitive parameters*”.¹⁷⁵¹

(1021) Moreover, the Commission also notes that in its White Paper 2021, the European Chamber of Commerce in Korea expressed concerns about the Transaction also due to the high barriers to entry. In particular, it stated that “[c]onsidering the unified company will account for 60% of the LNG carrier market, which by the way is much higher than their combined market share of 21% of the global shipbuilding market, the remaining shipbuilders would not exert sufficient competitive pressure on the merged entity. Also, as these segments reside mainly in the know-how, track-record, and in some cases in mastering the relevant technology, barriers are quite high for new entrants. Therefore, a significant concern that the merger could lead to higher prices [...]”.¹⁷⁵²

(1022) [...].¹⁷⁵³ [...].¹⁷⁵⁴ [...].¹⁷⁵⁵ [...].¹⁷⁵⁶ [...],¹⁷⁵⁷ [...].

(1023) For these reasons, the Commission considers that, contrary to what is argued by the Notifying Party,¹⁷⁵⁸ there is no evidence that several existing shipbuilders/shipyards would allegedly have already overcome the barriers to entry and expansions identified by the Commission and would have the intention to enter or expand in the LLNGC market. In any event, even if this were correct (quod non), the Commission notes that, for the reasons explained in **Section 8.3.8** it would be highly unlikely that market entry of those shipbuilders/shipyards would occur in a timely and sufficient manner.

a) *Licences, know-how/project management, technology are very high barriers to entry and expansion*

(1024) On licences, know-how and technology, the market investigation showed the following facts. First, obtaining a GTT licence to be able to build and install the LNG cargo tank is not an easy process and, in any event, having a licence is not enough to be able to enter or expand in the market for LLNGCs. Second, know-how/project management and technology are crucial and not so easy to be transferred. Indeed, already at intra-group level, know-how and technology transfer may take a relatively significant amount of time. In addition and more generally, technologies such as LNG cargo containment systems and those aimed at reducing emissions as well as propulsion and compatibility with LNG terminals will be important for LLNGCs (which also indicates that innovation is a barrier to entry in itself in this market) and some shipbuilders will have an advantage with respect to those technologies. Each of these elements are discussed in detail in the following paragraphs.

¹⁷⁴⁹ [...] information memorandum for investors dated April 2020, slide 24. [DOC ID: 4128]

¹⁷⁵⁰ Response to the First Letter of Facts, paragraphs 177-180. The Notifying Party’s Response to the Second Letter of Facts, paragraph 277 and 285 and ff.

¹⁷⁵¹ Response to the First Letter of Facts, paragraphs 177-180. The Notifying Party’s Response to the Second Letter of Facts, paragraph 277 and 285 and ff.

¹⁷⁵² ECCK White Paper 2021, page 143. DOC ID: 5790.

¹⁷⁵³ HHHH’s Letter to the Commission dated 25 October 2021, paragraphs 52-55.

¹⁷⁵⁴ [...].

¹⁷⁵⁵ Response to the Second Letter of Facts, paragraph 287.

¹⁷⁵⁶ Response to the Second Letter of Facts, paragraph 288.

¹⁷⁵⁷ HHHH’s Letter to the Commission dated 25 October 2021, paragraphs 52-55.

¹⁷⁵⁸ Response to the First Letter of Facts, paragraphs 175-176.

- (1025) First, on the fact that obtaining a licence to be able to build and install the LNG cargo tank is not an easy process and contrary to what is maintained by the Notifying Party in its Response to the Second Letter of Facts,¹⁷⁵⁹ [...].¹⁷⁶⁰ In terms of process, the shipbuilder will first need to obtain a licence from GTT. For that purpose, the would-be new entrant would have to first go through a homologation process. Such homologation process was not in place at the time when the three big Korean shipbuilders started using GTT's LNG cargo tank containment system.¹⁷⁶¹ Nowadays, any would-be new entrant would have to go through such a process, through which GTT assesses the shipbuilder's ability to build the LNG cargo tank as per GTT's standards. More specifically, such process consists in building a mock-up LNG cargo tank onshore that is smaller than the real one in size. If necessary, GTT will provide the shipbuilder with an improvement plan. Only when the shipbuilder will be able to show that it complies with GTT's standards GTT will sign the licence agreement. As explained by [...], the whole process could take from a minimum of 6 months up to a maximum of two years (18 months on average) typically. It is only after this phase that starts the next challenge for a shipbuilder with no track record: getting orders¹⁷⁶² and competing with very experienced shipbuilders.¹⁷⁶³
- (1026) Second, on the fact that obtaining a licence is not an easy process and that, in any event, such licence is not sufficient to become a credible shipbuilder, [...] explains that upon the signing of the licence agreement, [...] makes available to the quality teams of the licensees a licence file including know-how (e.g. welding and bonding handbooks, materials and components technical specifications) as well as the list of patents that the shipbuilder is free to use when building and installing the technology.¹⁷⁶⁴ [...] clarified that “[...] [*s*]uch handbooks contain all the know-how information on the sensitive or critical aspects that the shipbuilder will need to be careful about during the building and installing of the cargo tank containment system, such as bonding [...] and welding [...]”.¹⁷⁶⁵ As explained in **Section 8.3.8.3(B) b)**, and contrary to what is claimed by the Notifying Party (i.e., that obtaining and having a GTT licence would be an easy process and almost automatically render a shipbuilder capable of building a membrane LLNGC)¹⁷⁶⁶ obtaining a licence for GTT's LLNGC containment system is a barrier to entry but is far from being sufficient to become a credible shipbuilder. [...] confirmed that obtaining a licence is free of charge for a shipbuilder, which explains “*why there are so many inactive GTT licensees. Royalty needs to be paid only from the moment GTT is notified for an order equipped with its technology. [...]*”.¹⁷⁶⁷ However, [...] also confirmed that obtaining a GTT licence is not sufficient to become a LLNGC supplier, as follows: “[...] GTT will send a relatively small team on-site in addition to the handbooks and other documentation [...]. Although GTT's technical assistance is crucial [...], it is not enough as it will be up to the shipbuilder's skilled workers

¹⁷⁵⁹ Response to the Second Letter of Facts, paragraph 290(a) (i).

¹⁷⁶⁰ Minutes of the conference call with [...] dated 18 July 2019. [DOC ID: 316]

¹⁷⁶¹ Minutes of the conference call with [...] dated 18 July 2019, paragraph 18. [DOC ID: 316]

¹⁷⁶² Minutes of the conference call with [...] dated 18 July 2019, paragraph 19. [DOC ID: 316]

¹⁷⁶³ Minutes of the conference call with [...] dated 28 June 2019, paragraph 31. [DOC ID: 190]

¹⁷⁶⁴ Minutes of the conference call with [...] dated 21 February 2020, paragraphs 3-4. [DOC ID: 2530]

¹⁷⁶⁵ Minutes of the conference call with [...] dated 21 February 2020, paragraph 4. [DOC ID: 2530]

¹⁷⁶⁶ The Notifying Party's Letter to DG COMP dated 29 June 2020 and its attachment. See also, the Notifying Party's Response to the First Letter of Facts, paragraphs 181-187.

¹⁷⁶⁷ Minutes of the call with [...] dated 22 July 2020, paragraph 6. [DOC ID: 4032]

and skilled engineers to actually design the LLNGC consistently with the design of the CCS, and build and install the LNG cargo tank. [...]”¹⁷⁶⁸

- (1027) Contrary to what is argued by the Notifying Party, which attempts to downplay the role of shipbuilders in the building and installation of the LNG cargo tank as well as the Parties’ capability to make design improvements to it,¹⁷⁶⁹ the need for shipbuilders to have the capabilities to design vessels and build and install LNG cargo tanks is also illustrated by the following points. First, after delivery has taken place, only LNG cargo tank defects that are design-related are of GTT’s responsibility, while all the LNG cargo tank defects that are manufacturing related will be the shipbuilders’ responsibility.¹⁷⁷⁰ Secondly, competitiveness is also a function of the shipbuilder’s ability to make design improvements to the containment system, which only the Korean shipyards have currently been able to propose to GTT.¹⁷⁷¹ Such improvements could consist in the addition or the removal of a piece in the system, or the modification of an existing item in the design as defined by GTT in its drawings, in order to simplify the design and accordingly the procurement and/or the construction process.¹⁷⁷²
- (1028) [...] explains that once the shipbuilder has received the first order, it is supposed to inform GTT.¹⁷⁷³ Then, the engineering phase starts. Such a phase consists in GTT providing all the designs and technical assistance to the shipbuilder’s quality team by sending GTT’s team on-site. In this way, GTT ensures that “*as far as the construction of the membrane technologies are concerned, (i) the quality team and yard have proper industrial processes in place to review critical phases of the construction stage and make sure that the handbooks are complied with and (ii) help the yard assess and justify, as the case may be, the acceptability of any deviations between the plans and the actual construction.*”¹⁷⁷⁴
- (1029) That having a GTT licence is not enough is also confirmed by a customer, which stated that “[...] *having a GTT licence is not enough as a shipbuilder would still need to have experienced and skilled workers for the building and installation of the cargo tank containment system. GTT will send a small GTT team on site, but the bulk of the work necessary for the building and installation of the cargo tank containment system is done by the shipbuilder.*”¹⁷⁷⁵ This is also confirmed by [...], which stated “[...] *GTT will send a relatively small team on-site in addition to the handbooks and other documentation [...]. Although GTT’s technical assistance is crucial [...], it is not enough as it will be up to the shipbuilder’s skilled workers and skilled engineers to actually design the LLNGC consistently with the design of the CCS, and build and install the LNG cargo tank. [...]*”¹⁷⁷⁶
- (1030) A number of other points also confirms this. First, as explained in **Section 8.3.4.3** and **8.3.8.3 (B)**, [...] and [...], which [...]. Second, in addition to design improvements (it is only the Korean shipyards currently proposing them and these

¹⁷⁶⁸ Minutes of the conference call with [...] dated 22 July 2020, paragraph 6 [DOC ID: 4032]

¹⁷⁶⁹ The Notifying Party’s Response to the First Letter of Facts, paragraphs 181-187.

¹⁷⁷⁰ Minutes of the conference call with [...] dated 21 February 2020, paragraph 9. [DOC ID: 2530] minutes of the conference call with [...] dated 22 July 2020, paragraphs 2-3. [DOC ID: 4032]

¹⁷⁷¹ [...] reply to question 12 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107] minutes of the conference call with [...] dated 22 July 2020, paragraphs 2-3. [DOC ID: 4032]

¹⁷⁷² Minutes of the conference call with [...] dated 22 July 2020, paragraphs 2-3. [DOC ID: 4032]

¹⁷⁷³ Minutes of the conference call with [...] dated 21 February 2020, paragraph 4. [DOC ID: 2530]

¹⁷⁷⁴ Minutes of the conference call with [...] dated 21 February 2020, paragraph 7. [DOC ID: 2530]

¹⁷⁷⁵ Minutes of the conference call with [...] dated 3 March 2020, paragraph 5. [DOC ID: 2490]

¹⁷⁷⁶ Minutes of the conference call with [...] dated 22 July 2020, paragraph 6 [DOC ID: 4032]

are not always accepted by GTT)¹⁷⁷⁷ shipbuilders with an important track record can and do implement non-design improvements to the cargo tank.¹⁷⁷⁸ After delivery has taken place, only LNG cargo tank defects that are design-related are of GTT's responsibility, while all the LNG cargo tank defects that are manufacturing related will be the shipbuilders' responsibility.¹⁷⁷⁹

- (1031) [...] licences are granted to shipbuilders to build the membrane containment system on a contractually defined shipyard. This means that if the shipbuilder wants to start building at another shipyard in addition to or as opposed to the one indicated in the licence agreement, it would, unless agreed otherwise, have to start the whole homologation process from scratch.¹⁷⁸⁰
- (1032) [...] ¹⁷⁸¹
- (1033) Third, on know-how and project management and contrary to what is argued by the Notifying Party in its Response to the Second Letter of Facts,¹⁷⁸² a majority of customers that expressed an opinion considered that know-how and/or project management is necessary to successfully enter and expand in the market for conventional LLNGCs.¹⁷⁸³ For example, one customer stated that a shipbuilder would need a “[...] *large pool of skilled labour, [...] ability to efficiently handle OEM from wide range of countries, accessibility of shipyard for high number of international stakeholders (OEMs, customers, vendors, etc.), advanced engineering expertise/technical know-how [...]*”.¹⁷⁸⁴ The same customer, which has recently placed the biggest order for conventional LLNGCs ever, further explained that starting building those vessels in-house would not be feasible as it “*currently does not have the capabilities to produce large LNG vessels ([...]) and acquiring this would require significant expansion works and such works are not feasible in the current priorities [...] in terms of construction projects. Further, [...] there are constraints related to the workforce as shipbuilding activities are labour intensive and currently the supply of labour in [...] is fairly limited. Further, to be able to build in-house, [...] would also have to attract a significant number of skilled labour force from abroad. [...]*”.¹⁷⁸⁵ Similar considerations apply to the large FSRUs segment.¹⁷⁸⁶ For example, one customer stated that to successfully enter the large FSRU segment, one shipbuilder should have a “[*t]eam with experience and a shipyard with size and abilities of Korean shipyards*”.¹⁷⁸⁷ This is also shown by the fact that, as explained in **Section 8.3.4.3** and **Section 8.3.8.3 (B)**, [...].
- (1034) Shipbuilders mentioned know-how and project management including engineering, skilled workers, manpower, design, hull construction, outfitting, welding, electrical systems, building or installation of the LNG cargo tank and of the LNG fuel tank

¹⁷⁷⁷ [...] reply to question 12 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]; minutes of the conference call with [...] dated 22 July 2020, paragraphs 2-3 [DOC ID: 4032]

¹⁷⁷⁸ Minutes of the conference call with [...] dated 21 February 2020, paragraph 14 [DOC ID: 2530] [...] reply to question 13 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

¹⁷⁷⁹ Minutes of the conference call with [...] dated 21 February 2020, paragraph 9. [DOC ID: 2530] minutes of the conference call with [...] dated 22 July 2020, paragraphs 2-3 [DOC ID: 4032]

¹⁷⁸⁰ Minutes of the conference call with [...] dated 21 February 2020, paragraph 6. [DOC ID: 2530]

¹⁷⁸¹ [...].

¹⁷⁸² Response to the Second Letter of Facts, paragraph 290(a)(ii).

¹⁷⁸³ Replies to question 61.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁷⁸⁴ Replies to question 61.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁷⁸⁵ Minutes of the conference call with [...] dated 25 February 2020, paragraph 12. [DOC ID: 2350]

¹⁷⁸⁶ Replies to question 95.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁷⁸⁷ Replies to question 95.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

together with gas handling systems as features requiring LNG-related expertise for LLNGCs.¹⁷⁸⁸ In addition, a majority of shipbuilders that expressed an opinion stated that not all shipbuilders can manufacture or install membrane LNG cargo tanks.¹⁷⁸⁹ For example, one [...] shipbuilder stated that “[i]t is difficult to new join, because market price will not cover investment and shipyard need[s] to develop a lot of work procedure, and also to develop LNG design it need[s] enough number of skilled designers”.¹⁷⁹⁰ Shipbuilders that expressed an opinion consider that skilled workforce and engineering skills rank, on a 1-10 scale, 8 on average in terms difficulties to be procured to successfully build conventional LLNGCs and large FSRUs.¹⁷⁹¹ Project management ranks 6.4 on average.¹⁷⁹² Building/installing the LNG cargo tank technology ranks 7 on average, building/installing the fuel tank 7.4 on average, installing gas handling systems ranks 7.8 on average.¹⁷⁹³

(1035) [Parties’ internal documents].¹⁷⁹⁴ In an internal document of KOSHIPA submitted by the Notifying Party acknowledges that “[d]ue to the increase in the order volume of LNG carriers, nurturing a skilled workforce in cargo containment manufacturing has emerged as an urgent necessity.”¹⁷⁹⁵ The same document also shows that there has been a consistent shortage of manpower availability for LLNGC cargo tank containment system manufacturing since 2019.¹⁷⁹⁶ Contrary to what is argued by the Notifying Party,¹⁷⁹⁷ the fact that this document dates back to 2019 and that it would refer to the Korean labour market (and would therefore be irrelevant for China and Russia, which would not experience such shortage), the Commission puts forward the following points. First, such document is likely to contain reliable data on this aspect as it is prepared by KOSHIPA, likely with the input of all its members and refers to a systemic issue. Moreover, the Commission considers that it is sufficiently recent. Second, the Commission considers that the fact that such document may refer to the skilled labour market situation in Korea does not invalidate the Commission’s findings in this respect. Indeed, as the three leading competitors in the LLNGC market are Korean (CSSC does not and is unlikely to exert a sufficient or significant competitive constraint in the near future), skilled labour shortage in Korea is likely to have repercussions in the global LLNGC market. In addition, in light of the Commission’s findings on CSSC (see **Section 8.3.4.2**), the Japanese shipbuilders (see **Section 8.3.4.3**) and SHI-Zvezda (see **Section 8.3.8.3 (B) c**), the Commission considers that while, on the one hand, a shortage of skilled labour can be safely presumed in China, Russia and Japan, on the other hand, even if that were not the case, it would still not change the Commission’s assessment of CSSC, the Japanese shipbuilders and of SHI-Zvezda.

(1036) In another internal document, it is acknowledged that [...].¹⁷⁹⁸ In one of HHI’s internal documents describing a possible construction collaboration scheme with

¹⁷⁸⁸ Replies to question 48 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁸⁹ Replies to question 69 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁹⁰ Replies to question 69 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁹¹ Replies to question 79 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁹² Replies to question 79 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁹³ Replies to question 79 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁷⁹⁴ [...].

¹⁷⁹⁵ The Notifying Party’s reply to RFI 54, Annex 5.3.6 EN 107th Production Management Working Group Meeting dated August 2019, page 23.

¹⁷⁹⁶ The Notifying Party’s reply to RFI 54, Annex 5.3.6 EN 107th Production Management Working Group Meeting dated August 2019, page 23.

¹⁷⁹⁷ The Notifying Party’s Response to the First Letter of Facts, paragraphs 188-189.

¹⁷⁹⁸ [...].

Zvezda dated 27 April 2018, it is reported that a minimum of 10 years of experience together with proficiency in English is required to HHI's technical support staff such as general management, engineering support, production management, quality control staff to be sent to Zvezda.¹⁷⁹⁹ The importance of skilled technicians is also underlined by [...], as follows: “[...] many years of actual experience in welding/bonding are required to both work in LLNGC shipbuilding and to train other workers/engineers.”¹⁸⁰⁰ In addition, [...] that “[...] [w]hile NO is usually seen as more complex in terms of components used (insulation boxes are built on-site and thus you need a box factory, but only welding is necessary), MARK is often regarded as more complex in terms of implementation (particularly bonding which is a complex operation for shipyards, traditionally more familiar with welding). [...]”¹⁸⁰¹

(1037) [...] also highlighted that “[w]orkers’ skills levels are important to vessel build-quality but require both time and investment to develop. Developing gifted design engineers is not a linear process.”¹⁸⁰² In relation to invar welders¹⁸⁰³, for example, [...] explained that “depending on the individual, it takes at least 6 months to 1 year to attain base-level competency [...]. Even after considerable time and cost to develop on single invar welder, s/he still needs on-the-job training and experience, starting with easy welding tasks then moving up to jobs requiring expertise. [...] Workers develop an eye for anything imperfect [...]. Without workers paying attention to potential imperfections, one would otherwise not identify issues until the gas trials, that is, after total completion of the vessel.”¹⁸⁰⁴ Contrary to what is argued by the Notifying Party,¹⁸⁰⁵ this quote supports the view that, with respect to invar welders, [...] did not only mention that, depending on the individual, it takes at least 6 months to 1 year to attain base-level competency, but it also clarified that invar welders still need additional on the job training and experience after this first period. For this reason, contrary to what is argued by the Notifying Party,¹⁸⁰⁶ the Commission does not consider that such period of time is short and below the typical timeframe which the Commission considers as timely entry or that, as [...] observation refers to “on-the-job training and experience”, this would imply that the shipbuilder is already working on an order and be therefore a market entrant. Indeed, the Commission notes that an order does not make a timely new entrant (e.g. the order can get cancelled or the shipbuilder may, for example, incur building difficulties and take longer delivery time, deliver a vessel of lower quality or not deliver at all). In any event, even if the Notifying Party’s were correct (quod non), an order does not make of a shipbuilder a sufficient entrant capable of constraining the Parties post-Transaction.

(1038) In another internal document submitted by the Notifying Party [...].¹⁸⁰⁷ [...].¹⁸⁰⁸

¹⁷⁹⁹ The Notifying Party’s reply to question 4 of RFI 30, page 3, Annex Q4.Zvez9.6 – HHIH – Construction Collaboration Scheme.

¹⁸⁰⁰ Minutes of the call with [...] dated 22 July 2020, paragraph 18. [DOC ID: 4032]

¹⁸⁰¹ Minutes of the call with [...] dated 22 July 2020, paragraph 11. [DOC ID: 4032]

¹⁸⁰² [...] observations on the SO, page 6. [DOC ID: 3851]

¹⁸⁰³ Invar is used in the primary and secondary barriers for LLNGC NO96 cargo containment systems.

¹⁸⁰⁴ [...] observations on the SO, page 7. [DOC ID: 3851]

¹⁸⁰⁵ Response to the First Letter of Facts, paragraphs 188-189.

¹⁸⁰⁶ Response to the First Letter of Facts, paragraphs 188-189. See also Response to the Second Letter of Facts, paragraph 290 (a)(iv).

¹⁸⁰⁷ The Notifying Party’s reply to question 7, Annex Q7.1.27.

¹⁸⁰⁸ The Notifying Party’s reply to question 7, Annex Q7.1.27.

- (1039) The Commission considers that developing the necessary know-how and project management skills is also a dynamic process that requires adapting to new market and technological developments such as, e.g., the new GTT technology called NEXT1, which is expected to be commercialised [...],¹⁸⁰⁹ Such cargo tank containment system technology is a sort of hybrid between MARK and NO types.¹⁸¹⁰ Moreover, the Commission notes that as shown by the data submitted by the Notifying Party, DSME is the first shipbuilder to receive orders or demand for Arc7 “ice-breaking” LLNGC (where DSME is also to date the only shipbuilder that has delivered Arc7 LLNGCs)¹⁸¹¹ or LLNGCs equipped with air lubrication technology (where DSME was also the first one to have delivered such vessels).¹⁸¹² The Commission notes that, contrary to what argued by the Notifying Party, which confuses technology in itself with the know-how,¹⁸¹³ regardless of whether a given technology can be obtained by third parties, shipbuilders need to develop and master the relevant know-how. With respect to technological development and therefore the associated know-how and skills, the Commission explained in **Section 8.3.3**, that innovation is an important parameter of competition in the LLNGC market and the Parties (especially DSME) are both important innovators. In turn, as explained in **Section 8.3.8.3 (C)** below, know-how and project management do have an impact on LLNGC construction time.¹⁸¹⁴
- (1040) Based on the information provided by the Notifying Party, intra-group know-how and technology transfer may also take a relatively significant amount of time.¹⁸¹⁵ Indeed, by way of example, back in 1999, HHIH acquired Hyundai Samho, which was previously part of another Korean shipbuilder named Halla Heavy Industries. Hyundai Samho traditionally built bulk carriers, tankers and containerships. After the acquisition by HHIH, Hyundai Samho received its first LLNGC order on [...] 2004 and delivered its first LLNGC on [...] 2008. Moreover, the Commission found indications that know-how is often developed at a specific shipyard and may therefore not be easily exported and implemented elsewhere. As stated by [...]: “[...] part of the Korean success in this market comes from the Korean workforce and their know-how, which is difficult to export though. The manufacturing know-how is often developed at a specific yard and may not be easily implemented elsewhere. For example, [...] is a Korean owned shipyard in the [...] in [...] which completely failed and went bankrupt this year. The company was Korean, with Korean know-how, using Korean technologies and Korean supply chain. They built the yard in the [...] for lower labour costs and it failed”.¹⁸¹⁶
- (1041) However, the Commission notes that even if it were to accept the Notifying Party’s argument¹⁸¹⁷ that, in this case, delivery time may not coincide with construction time as building started in 2007 because of customer’s preferences, the Hyundai Samho example does not seem to represent a convincing example of lowered barriers to

¹⁸⁰⁹ [...] reply to question 1 of the Commission RFI 2 to [...] dated 8 February 2021. [DOC ID: 4726]

¹⁸¹⁰ [...] reply to question 1 of the Commission RFI 2 to [...] dated 8 February 2021. [DOC ID: 4726]

¹⁸¹¹ The Notifying Party’s reply to RFI 59, Annex Q4. See also the Notifying Party’s reply to question 26, Annex Q26.2.

¹⁸¹² The Notifying Party’s reply to RFI 59, Annex Q4. See also the Notifying Party’s reply to question 26, Annex Q26.3.

¹⁸¹³ Response to the First Letter of Facts, paragraphs 190-196.

¹⁸¹⁴ The Notifying Party’s reply to RFI 60. The Notifying Party’s reply to question 30 and 31 of RFI 67.

¹⁸¹⁵ Presentation to the Case Team dated 3 December 2019, pages 27 and 29; The Notifying Party’s reply to questions 1 of RFI 12; See also the Notifying party’s reply to RFI 30.

¹⁸¹⁶ Minutes of the meeting with [...] dated 1 October 2019, paragraph 8. [DOC ID: 3201]

¹⁸¹⁷ Response to the Article 6(1)(c) decision, paragraph 335.

entry for the following reasons.¹⁸¹⁸ First, [Information on HHI internal organisation].¹⁸¹⁹ [Information on HHI internal organisation].¹⁸²⁰

- (1042) With respect to extra-group know-how and technology transfer, the Commission notes that for it to be successful and to lower both the know-how and technology barriers, it should satisfy two cumulative conditions, namely (i) being technically effective, in the sense that it should technically empower a shipbuilder or a shipyard to effectively enter or expand in the market, and (ii) giving an incentive to the transferor - going beyond the mere intra-group interest of transferring know-how and technology to one of its yards - to create a credible and autonomous competitor capable of autonomously competing in the market. The Commission notes that, with the exception of the Chantiers de l'Atlantique ("CAT") know-how transfer to CSSC (Hudong),¹⁸²¹ there are no recent precedents of a successful know-how or technology transfer in the area of LLNGCs satisfying such conditions. The Commission notes that CAT's know-how transfer to CSSC (Hudong) was effective and created an autonomous competitor. However, it is also noted that despite the transfer, as established in the previous Section, after so many years, CSSC (Hudong) is still not on par with HHI, DSME and SHI in terms of quantitative and qualitative track record. The rationale behind such transfer was for CAT to *"[...] make some profit from the entry of a new player which could not be prevented anyway. Even without CAT, [CSSC (Hudong)] could have entered the market [...]. Moreover, CAT considered that the construction of LNG carriers had already mostly moved to Asia [...]"* and thus had an incentive to make such transfer as it was a lost battle.¹⁸²²
- (1043) [...].¹⁸²³ [...].¹⁸²⁴ [...]. When asked to comment on the reasons why it took several years for CSSC (Hudong) to receive its first international and its first European order, [...] explained that *"[...] it is a complicated process to master the designing rationale and construction process, it is necessary to accumulate experience and improve step by step through practice, and the limitation of manufacturing equipment, manufacturing site and other factors have also restricted the speed of development of CSSC"*.¹⁸²⁵ One of DSME's internal documents, [...].¹⁸²⁶ In turn, [...] confirmed that CSSC (Hudong) market entry was very challenging since CSSC (Hudong) *"[...] underwent severe delays in building the vessels and could not deliver until 2008. Even after delivery, technical problems continued to emerge such that in 2009, only 14 months after the first vessel was delivered, the LLNGC had to undergo lengthy repairs in Singapore."*¹⁸²⁷
- (1044) In light of the above and in addition to the considerations made in **Section 8.3.8.3 (B) c)**, the Commission considers that the SHI-Zvezda example does not represent an example of extra-group know-how and technology transfer for the following reasons.

¹⁸¹⁸ The Notifying Party's reply to question 2 of partial response to RFI 30 dated 30 March 2020.

¹⁸¹⁹ The Notifying Party's reply to RFI 30 dated 8 May 2020, Annex Q.1.1.

¹⁸²⁰ The Notifying Party's reply to RFI 30 dated 8 May 2020, Annex Q.1.1.

¹⁸²¹ [...] reply to Commission RFI to [...] dated 1 April 2020. [DOC ID: 2846]

¹⁸²² [...] reply to question 3 of Commission RFI to [...] dated 1 April 2020. [DOC ID: 2846]

¹⁸²³ Clarksons Vessel database responsive to RFI 67.

¹⁸²⁴ [...] reply to question 5 of Commission RFI to [...] dated 1 April 2020. [DOC ID: 2846]

¹⁸²⁵ [...] reply to question 9 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

¹⁸²⁶ DSME's internal documents responsive to RFI 3, "Analysis on Chinese Shipbuilding Industry and Competitors" dated 8 June 2018, page 34, (Attachment 1)+Chinese+shipbuilding industry +and+competitors+analysis+report. [DOC ID: 1837-257]

¹⁸²⁷ [...] observations on the SO, page 2. [DOC ID: 3851]

- (1045) First, [...] and [...] took part in the 2017 bid to enter into a cooperation agreement with Zvezda (“the Zvezda bid”), ultimately awarded to SHI, and for which both [...] and [...] submitted similar cooperation scheme proposals based to a large extent not on a know-how and technology transfer but rather on a joint construction scheme pursuant to which [...].¹⁸²⁸ Based on the information available, the Commission considers that there were multiple reasons why the cooperation scheme proposals consisted in a joint construction scheme: experience of and tightness in the manpower market, Korean regulatory approval hurdle, absence of track record and Zvezda’s own and its [...] concerns on Zvezda’s readiness to be able to autonomously build LLNGCs.
- (1046) With respect to experience of and tightness in the manpower market and the hurdle of obtaining Korean regulatory approval, in one of HHI’s internal documents describing a possible construction collaboration scheme dated 27 April 2018, it is reported that [...].¹⁸²⁹ [...].¹⁸³⁰ [...].¹⁸³¹ That extra-group and cross-border technology transfers can be very complicated is also emphasised by one customer that stated that “[...] [t]echnology transfers can be very complicated from a regulatory perspective as certain jurisdictions tend to discourage this”.¹⁸³²
- (1047) With respect to absence of track record, in minutes of a meeting among HHI, [...], [...] and [...], to discuss the preliminary terms of a possible cooperation scheme in the Zvezda bid context, it is reported that [...].¹⁸³³
- (1048) [Parties’ internal documents].¹⁸³⁴ ¹⁸³⁵ ¹⁸³⁶ HHI estimates Zvezda’s construction period to be [...] times longer than that of HHI and that Zvezda’s construction capacity allows only [...] LLNGCs to be constructed per year.¹⁸³⁷ In addition to a longer construction period, the specialised press reported about a Russian cabotage exemption decree allowing Novatek to transport LNG on foreign-built LLNGCs as building at Zvezda’s could cost [...] more.¹⁸³⁸ This is also confirmed by an internal document of DSME [...].¹⁸³⁹ [...].¹⁸⁴⁰ [...].¹⁸⁴¹ [...].¹⁸⁴² [...].¹⁸⁴³ [...].¹⁸⁴⁴
- (1049) Second, as explained in **Section 8.3.8.3 (B) c)**, the rationale of such cooperation scheme was never to create an autonomous competitor active on the worldwide market.

¹⁸²⁸ The Notifying Party’s draft preliminary reply to question 4 of RFI 30 dated 8 May 2020, paragraph 9. This was confirmed in the Notifying Party’s final reply to question 4 of RFI 30 dated 2 June 2020, paragraph 9

¹⁸²⁹ The Notifying Party’s reply to question 4 of RFI 30, page 3, Annex Q4.Zvez9.6 – HHIH – Construction Collaboration Scheme.

¹⁸³⁰ [...].

¹⁸³¹ [...].

¹⁸³² Minutes of the conference call with [...] dated 26 February 2020, paragraph 10. [DOC ID: 2900]

¹⁸³³ The Notifying Party’s reply to question 4 of RFI 30, Annex Q4-Zvez1.1, page 5.

¹⁸³⁴ The Notifying Party’s reply to question 4 of RFI 30, Annex Q.4Zvez21, page 3.

¹⁸³⁵ The Notifying Party’s reply to question 4 of RFI 30, Annex Q.4 Zvez13.5, pages 1-5.

¹⁸³⁶ The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.1.8, page 2.

¹⁸³⁷ The Notifying Party’s reply to question 4 of RFI 30, Annex Q.4 Zvez13.5, pages 1-5.

¹⁸³⁸ The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.1.11.

¹⁸³⁹ The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.2.39, page 3.

¹⁸⁴⁰ The Notifying Party’s reply to question 4 of RFI 30, Annex Q.4 Zvez28, pages 3-5.

¹⁸⁴¹ The Notifying Party’s reply to question 4 of RFI 30, Annex Q.4 Zvez32, pages 3-5.

¹⁸⁴² The Notifying Party’s reply to question 7, Annex Q7.1.27.

¹⁸⁴³ The Notifying Party’s reply to question 7, Annex Q7.1.27.

¹⁸⁴⁴ The Notifying Party’s reply to question 7, Annex Q7.1.27.

- (1050) In addition, the Commission found that the prior DSME-Zvezda cooperation in the area of LLNGCs, do not represent an example of successful extra-group know-how and technology transfer. Indeed, as explained by the Notifying Party itself,¹⁸⁴⁵ none of them entailed a know-how and technology transfer giving rise to any orders of LLNGCs to be built by Zvezda. As a consequence, the Commission considers that these two Zvezda examples would neither satisfy the effectiveness nor the incentive requirement.
- (1051) Finally, the Commission notes that the [...] example¹⁸⁴⁶, pursuant to which HHIH proposed to transfer LLNGC know-how to [...], an Indian shipbuilder, does not constitute an example of successful extra-group know-how and technology transfer either as such cooperation proposal was never put into effect and cannot therefore be assessed either under the technical effectiveness or under the incentive conditions. [...].¹⁸⁴⁷
- (1052) Fourth, on innovation and innovative technologies, the Commission notes, as explained in **Section 8.3.3**, that the market investigation confirmed that innovative technologies, especially if related to the LNG cargo tank containment system, reduction of fuel consumption or reduction of carbon emissions, are important in the area of LLNGCs and that those shipbuilders such as HHI and DSME, that closely and successfully compete on innovative technologies, enjoy a competitive advantage. For example and with respect to the LNG cargo tank, this is confirmed by [...], which stated that “[...] shipbuilders with an important track record in LNG carriers can and do implement non-design improvements to the cargo tank containment system and its erection process”.¹⁸⁴⁸ In addition, [...] explains that only Korean shipbuilders currently propose design improvements on GTT’s technology consisting in changes in GTT’s system (addition or removals of pieces, modification of design) with the aim of simplifying the design and the construction processes.¹⁸⁴⁹
- (1053) This is also confirmed by shipbuilders’ reply to the market investigation. A majority of shipbuilders that expressed an opinion stated that they have invested in R&D to introduce technological improvements to their LNGCs in the past 5 years such as improvements to reduce boil-off-rate, fuel efficiency, automation and the cargo tank containment system.¹⁸⁵⁰ [...].¹⁸⁵¹ A majority of shipbuilders that expressed an opinion stated that technological improvements to their LNGCs were developed either by them or in cooperation with equipment suppliers.¹⁸⁵²
- (1054) That innovation and innovative technologies represent an important barrier to entry has also been acknowledged by KSOE as reported by the press: “[s]hipbuilding has been a labor-intensive industry, but our company will transform the industry to be more dependent on new technologies. [...] [W]e need innovation to continue leading the market.[...] Some of the new technologies [that] will be crucial for the local

¹⁸⁴⁵ The Notifying Party’s reply to question 1 of RFI 28 dated 3 March 2020.

¹⁸⁴⁶ The Notifying Party’s reply to question 1 of RFI 30, paragraph 9.

¹⁸⁴⁷ The Notifying Party’s reply to question 4 of RFI 30, Annex Q.4Zvez21, page 3.

¹⁸⁴⁸ Minutes of the conference call with [...] dated 21 February 2020, paragraph 14. [DOC ID: 2530]. See also, [...] reply to question 13 of Commission RFI to [...] dated 7 May 2020 [DOC ID: 3107] and replies to question 69 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁸⁴⁹ [...] reply to question 12 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

¹⁸⁵⁰ Replies to question 71 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁸⁵¹ Replies to questions 73 and 73.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁸⁵² Replies to questions 74 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

*shipbuilding industry to survive in the future include developing eco-friendly ships and smart ships. [...]*¹⁸⁵³

- (1055) Therefore, the Commission notes that post-Transaction the already high barriers to entry and expansion may even increase. [...].¹⁸⁵⁴ [...].¹⁸⁵⁵ [...].¹⁸⁵⁶ As explained in **Section 8.3.3**, this is also explained by recent press articles showing the approval of DSME's rotor sail technology.

Figure 55 [...]

[...]

Source: The Notifying Party's 5.4 documents, "KDB-related" dated 2 August 2018, slide 14, Report related to KDB, Form CO, Annex 5.4.6.

- (1056) In its Response to the Second Letter of Facts,¹⁸⁵⁷ the Notifying Party claims that technologies do not represent a barrier to entry in the LLNGC market as CSSC (Jiangnan) would have successfully completed a technology transfer from CSSC (Hudong), including obtaining approvals for the design of LLNGC and all relevant licences and would already be quoting LLNGC prices to brokers. Moreover, the Notifying Party claims that CSSC (SCS) would have successfully entered into the LLNGC market in November 2019 following a successful intra-group technology transfer. Moreover, the Notifying Party claims that Imabari also successfully transferred MHI's technology through its JV with MHI, namely MI-LNG. With respect to the above-mentioned claims, the Commission notes the following. On CSSC (Jiangnan), the Commission refers to **Section 8.3.4.2 (B) b)** and **Section 8.3.8.3 (C) vii.a)**. On CSSC (SCS), the Commission notes that this yard is part of CSSC (Hudong) so no separate assessment is needed. On MI-LNG, the Commission refers to **Section 8.3.4.3** and **Section 8.3.8.3 (C) x)**, **Section 8.3.8.3 (C) xi)** and **Section 8.3.8.3 (C) xxvii)**.
- (1057) Moreover, the Commission notes that one of the main challenges is represented by the assembly and the installation of the LNG cargo tank containment system technology, which is very sophisticated given that such technology is supposed to keep the LNG at extremely low temperatures¹⁸⁵⁸ and, for this reason, represents half of the cost of the LNGC.¹⁸⁵⁹ That technological capacity is a challenge was also confirmed by [...].¹⁸⁶⁰ Moreover, a shipbuilder interviewed by the Commission explained that *"[i]nvestment in technology is important. Vessels' engineering in general is an important input for shipbuilders. Customers insist on the most efficient vessel in terms of fuel consumption and IMO regulations demand high environmental standards and restricts emissions. LNG vessels specifically require important*

¹⁸⁵³ "KSOE head puts focus on R&D to fight competition", Korea JoongAng Daily dated 11 June 2019. [DOC ID:3171]

¹⁸⁵⁴ The Notifying Party's 5.4 documents, "BOD Explanation Material" dated January 2019, slide 20, HHI Board Minutes explanatory materials, Form CO, Annex 5.4.19.

¹⁸⁵⁵ DSME's internal documents responsive to RFI 3, "2014 – 4Q General Business Meeting" dated 9 January 2015, slide 3, 2015 comprehensive business meeting 20150109_for meetingR1 (redacted). [DOC ID: 1837-69]

¹⁸⁵⁶ The Notifying Party's 5.4 documents, "KDB-related" dated 2 August 2018, slide 14, Report related to KDB, Form CO, Annex 5.4.6.

¹⁸⁵⁷ Response to the Second Letter of Facts, paragraph 274 and ff.

¹⁸⁵⁸ Minutes of the conference call with [...] dated 25 June 2019, paragraph 8. [DOC ID: 1329]

¹⁸⁵⁹ Minutes of the conference call with [...] dated 28 June 2019, paragraph 19. [DOC ID: 190]

¹⁸⁶⁰ "Submission to the EU EC DG COMPETITION, Views of [...] regarding proposed merger M.9343 (HHI/DSME)" dated 26 September 2019, page 18. [DOC ID: 3204]

*investment in special production tools and facilities, as well as licence fees relating to the containment system and highly skilled work force”.*¹⁸⁶¹

(1058) A majority of shipbuilders that responded to the market investigation consider that not all shipbuilders can build or install LNG cargo tanks, LNG fuel tank or LNG gas handling systems.¹⁸⁶² This appears to be due also to the fact that skilled labour force is necessary to master these technologies. A shipbuilder, referring to shipbuilders without any LNGC shipbuilding experience, explained that [...] ¹⁸⁶³ Moreover, for shipbuilder active in small LNGCs to enter the market for LLNGCs, one mentioned that “[t]here could be the some entrance barrier for small size LNG carrier builders to expand into large size LNG carriers because tank type is greatly different between type-c for smaller ships and membrane / moss type for larger ships”.¹⁸⁶⁴

b) *Track-record (qualitative and quantitative dimension) is a very high barrier to entry and expansion*

(1059) While in **Sections 8.3.4.2** and **8.3.4.3**, the Commission assessed how CSSC and Japanese shipbuilders compare with the Parties, in this Section the Commission sets out its assessment of track record with respect to market entry and expansion. One customer stated that “*it is very hard for a shipbuilder to enter this market. LNG ships demand a high standard of capability in design, construction, project management, etc. These vessels are not easily replaced and cost a lot of money so buyers will not want to risk purchasing one from shipyard that does not have a demonstrated track record in these areas.*”¹⁸⁶⁵

(1060) That track record is of the utmost importance in the market for LLNGCs is corroborated by the fact that a customer’s cost of ordering from a shipbuilder it has never ordered before is getting already now, pre-Transaction, higher and higher depending on the degree of the established relationship, let alone in case a shipbuilder has no or insignificant LLNGC track record. Nearly all customers that expressed an opinion in the market investigation consider that ordering LNGCs from a shipbuilder they did not order before would involve costs and additional time compared to ordering from a shipbuilder with which they already have an established relationship.¹⁸⁶⁶ For example, a customer explained that it would “[...] *have to negotiate and agree a specification and the terms of a shipbuilding contract rather than just repeat our last order and contract terms. We would also have to conduct an HSSE (Health, Safety, Security and Environment) audit of the yard and ensure that their safety standards are acceptable. If not, there would have to be a series of corrective actions that the yard would have to implement and a verification process to see that these are indeed implemented and ongoing. Once the contract is signed, we would need to establish a site team and become familiar with the construction practices, etc. of the new shipyard. All of this on top of making sure that the LNG ship they build will be of the design and quality standard that we require and at a price that meets our needs.*”¹⁸⁶⁷

¹⁸⁶¹ Minutes of the conference call with [...] dated 3 July 2019, paragraph 16. [DOC ID: 289]

¹⁸⁶² Replies to questions 47, 49 and 51 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁸⁶³ Replies to question 100.3 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁸⁶⁴ Replies to question 101.3 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁸⁶⁵ Replies to question 56 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁸⁶⁶ Replies to question 62 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁸⁶⁷ Replies to question 62 of Questionnaire Q3 to Customers. [DOC ID: 3236]

- (1061) As confirmed by [...] ¹⁸⁶⁸ and shown by the market investigation, track record is of the utmost importance in the market for LLNGCs for a number of reasons.
- (1062) First, track record has both a quantitative and a qualitative dimension and a shipbuilder is considered to be a credible player only after it has delivered a certain number of vessels of a certain quality.
- (1063) With respect to the quantitative dimension and contrary to and in response to what is maintained by the Notifying Party, ¹⁸⁶⁹ a majority of customers that expressed an opinion indicated that they would consider a shipbuilder to be credible in LNGCs after having built at least 5 (L)LNGCs. A customer stated “[...] *as an average we may consider that building 15-20 LNG carriers may give to the shipbuilder the necessary experience and give the owners a confidence to order new ships*”. ¹⁸⁷⁰ Another customer stated “*circa 5-10 ships [...] over a 3 year period. You would also have to see how the ships behaved in service and the results of the first significant refits*”. ¹⁸⁷¹ Therefore, contrary to what argued by the Notifying Party, ¹⁸⁷² the Commission does not fail to examine how significant a track record needs to be from a quantitative perspective. To support and expand its claim, the Notifying Party ¹⁸⁷³ claims that out of [...] customers, [...] would not agree that a track record needs to be significant. ¹⁸⁷⁴ However, the Commission notes that [...] customers expressed a meaningful opinion to this question. Of these [...], [...] provided a meaningful indication on how significant such a track record should be, i.e. between a minimum of [...] and a maximum of [...] LLNGCs.
- (1064) With respect to the qualitative dimension, a customer interviewed by the Commission explained that “[*q*]uality challenges will only increase in the future because of new environmental requirements on reduction of gas emissions and change of fuel.” ¹⁸⁷⁵ Another customer interviewed by the Commission explained that “*the three Korean shipyards consistently produce high quality LNG carriers. They have significant experience [...]. Experience is very important because LNG carriers are relatively high-tech vessels [...] and a high degree of experience is required in their construction, which Korean shipyards have managed to acquire throughout the years*”. ¹⁸⁷⁶ Moreover, with respect to LLNGCs and regardless of whether a shipbuilder has any experience in small LNGCs, that track record in LLNGCs means a full series, i.e. 4-5 vessels, was also confirmed by a classification society “[...] *customers require track record before trusting a shipbuilder with large LNG carriers. A credible track record would be a full series, e.g. 4-5.*” ¹⁸⁷⁷
- (1065) Moreover, the Commission notes that conventional LNGCs and FSRUs are differentiated goods with quality differences. A majority of customers that expressed an opinion stated that there could indeed be quality differences between conventional LNGCs built by different shipbuilders even though all certified by classification

¹⁸⁶⁸ “Submission to the EU EC DG COMPETITION, [...] regarding proposed merger M.9343 (HHI/DSME)” dated 26 September 2019, page 18. [DOC ID: 3204]

¹⁸⁶⁹ Response to the Second Letter of Facts, paragraph 290(c)(i) and(ii).

¹⁸⁷⁰ Replies to question 57 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁸⁷¹ Replies to question 57 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁸⁷² Response to the First Letter of Facts, paragraphs 197-198.

¹⁸⁷³ Response to the First Letter of Facts, paragraphs 197-198.

¹⁸⁷⁴ Replies to question 57 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁸⁷⁵ Minutes of the conference call with [...] dated 2 July 2019, paragraph 23. [DOC ID: 1328]

¹⁸⁷⁶ Minutes of the conference call with [...] dated 25 June 2019, paragraph 7. [DOC ID: 1329]

¹⁸⁷⁷ Minutes of the conference call with [...] dated 3 March 2020, paragraph 14. [DOC ID: 2473]

societies.¹⁸⁷⁸ For example, one customer explained “[...] *the role of the classification [societies] is only to verify the compliance of the constructed vessel with applicable rules but not to check the quality of the construction as the owner does*”.¹⁸⁷⁹ Another customer explained that “[c]lassification societies don’t care [about] the following [:] [(i)] [p]erformance KPs ([f]uel consumption, [b]oil-off rate, [s]hip speed) – above rule requirements, [(ii)] [n]umbers/[m]agnitudes of downtime events due to hardware problem (relating to shipyard’s/manufacture’s design and outfitting) – difficult to find during construction inspections, [(iii)] [n]umbers/[m]agnitude of [g]uarantee [c]laim [c]ards ([i]ssued from [v]essel) – operator interface issues”.¹⁸⁸⁰ Another customer stated that HHI, DSME and SHI are credible suppliers for conventional LLNGCs, with a solid track record and that it “[...] *would not consider any of those shipbuilders with a track record only in small conventional LNG carriers*.”¹⁸⁸¹ Similar considerations apply for FSRUs.¹⁸⁸²

- (1066) This is confirmed by shipbuilders’ reply to the market investigation as all of those that expressed an opinion stated that there could indeed be quality differences regardless of classification societies’ certification.¹⁸⁸³
- (1067) This is also confirmed by classification societies themselves.¹⁸⁸⁴ For example, a classification society stated that “[...] *[g]enerally, classification societies do not provide assurances regarding the operational performance of vessels outside the terms of classification and the international conventions adopted by the relevant flag Administrations. [...] In addition, even with respect to standards covered by classification societies customers may require higher quality. Contracts between ordering ship owners and the shipbuilders therefore refer to many parameters that are not covered by the assurance provided by classification societies. These differences translate to a much higher level of supervision that is exercised by ship owners compared to classification societies during construction.*”¹⁸⁸⁵ Another classification society explained that “[t]he supervision of customers during the building process is very different from the classification process of the classification societies. Customers are supervising that the vessels are built according to the specifications they ordered. These specifications are different and more performances oriented than the elements checked by classification societies.”¹⁸⁸⁶
- (1068) More specifically, customers are reluctant placing or re-placing orders from a shipbuilder/shipyard that has previously delivered a conventional LLNGC with technical problems in the two years after delivery especially if such technical problem is of a certain importance or occurs with a certain frequency. This was confirmed by a majority of customers that expressed an opinion.¹⁸⁸⁷ For example, one customer stated that in such cases ordering would be too risky as “*problems may continue and LNG is sensitive to technology [...]*”.¹⁸⁸⁸ Another customer clarified that “[i]t depends on the nature of the technical problems and whether it is a pattern.

¹⁸⁷⁸ Replies to questions 36 and 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁸⁷⁹ Replies to questions 36 and 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁸⁸⁰ Replies to questions 36 and 36.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁸⁸¹ Minutes of the conference call with [...] dated 6 February 2020, paragraph 9. [DOC ID: 2782]

¹⁸⁸² Replies to questions 81 and 81.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁸⁸³ Replies to question 26 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁸⁸⁴ Minutes of the conference call with [...] dated 9 March 2020, paragraphs 5-6. [DOC ID: 2504]

¹⁸⁸⁵ Minutes of the conference call with [...] dated 3 March 2020, paragraphs 7-8. [DOC ID: 2473]

¹⁸⁸⁶ Minutes of the conference call with [...] dated 11 March 2020, paragraph 6. [DOC ID: 2554]

¹⁸⁸⁷ Replies to questions 29.2 and 29.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁸⁸⁸ Replies to question 29.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

*Also, the manner in which the shipbuilder responds is important [...]”.*¹⁸⁸⁹ Another customer specified that “[i]n general not however final decision depends on the nature of the technical problems and [...] to [fix] it in existing vessels and make sure that will not re-occur”.¹⁸⁹⁰ Similar considerations hold true with respect to large FSRUs.¹⁸⁹¹ For example, one customer stated that “[d]ue to the complexity of the design, [the] selected shipyard and supplier need [to] have a good reference”.¹⁸⁹² Another customer clarified that it “depends on the magnitude of technical problems. One [...] evaluation points are if the [s]hipbuilder has finally solved the technical problems met on the previously delivered FSRU and adopted a necessary lesson-learn improvement of his building procedure”.¹⁸⁹³

- (1069) Second, a majority of customers that responded to the market investigation indicated that they would not order LLNGCs from a completely new shipbuilder without prior experience in shipbuilding,¹⁸⁹⁴ they would generally not order LLNGCs from a shipbuilder with experience in small LNGCs only¹⁸⁹⁵ and that, as a consequence, they would consider as a credible player a shipbuilder for LLNGCs a shipbuilder that built LNGCs equal to or larger than 100,000m³.¹⁸⁹⁶
- (1070) Third, becoming a credible shipbuilder in LNGCs is a relatively long time process. For example, a customer explained that it takes about 10 years for a shipbuilder to get the experience and reach the quality needed to become a credible player.¹⁸⁹⁷
- (1071) Fourth, having had a track record in LLNGCs in the past and not being active for a long time may not be enough to appear credible to customers. With respect to conventional LLNGCs, a majority of customers that expressed an opinion indicated that they would consider when was the last time a shipbuilder built the type and size of vessel they are looking for.¹⁸⁹⁸ For example, one customer stated that “it is crucial for such supplier to demonstrate a strong track record and reputation of quality and know-how”.¹⁸⁹⁹ Another customer stated that “[i]t is one of essential factors to evaluate whether shipbuilder maintain[s] its engineering & production capability of LNG [carriers] [...]”.¹⁹⁰⁰ Another customer stated that “[t]echnology and design know-how improves rapidly in LNG shipbuilding and [...] [r]equisite skills can diminish rapidly as well”.¹⁹⁰¹ With respect to large FSRUs, nearly all customers that expressed an opinion indicated that they would also do so.¹⁹⁰² For example, one customer explained that “[s]hipbuilder must have adequate experience for this type of vessels”.¹⁹⁰³

¹⁸⁸⁹ Replies to question 29.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁸⁹⁰ Replies to question 29.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁸⁹¹ Replies to questions 74.2 and 74.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁸⁹² Replies to question 74.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁸⁹³ Replies to questions 74.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁸⁹⁴ Replies to question 58 of Questionnaire Q3 to Customers. [DOC ID: 3236]
¹⁸⁹⁵ Replies to question 59 of Questionnaire Q3 to Customers. [DOC ID: 3236]
¹⁸⁹⁶ Replies to question 60 of Questionnaire Q3 to Customers. [DOC ID: 3236]
¹⁸⁹⁷ Minutes of the conference call with [...] dated 2 July 2019, paragraph 22. [DOC ID: 1328]
¹⁸⁹⁸ Replies to question 27 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁸⁹⁹ Replies to question 27.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰⁰ Replies to question 27.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰¹ Replies to question 27.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰² Replies to question 71 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰³ Replies to question 71.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

- (1072) More specifically, inactivity for 10 years or more may be enough to discourage customers to order LLNGCs.¹⁹⁰⁴ A majority of customers that expressed an opinion indicated that they would not consider ordering a conventional LLNGC from a shipbuilder that has not produced conventional LLNGCs for 10 years.¹⁹⁰⁵ For example, one [...] customer stated it would not consider ordering “[...] unless [it is] in close cooperation with experienced shipyards – such as [...] at Russia’s Zvezda shipyard, which has an extensive technology cooperation with Korean shipyards”.¹⁹⁰⁶ Another customer explained that “[i]n case a shipyard has not produced large scale conventional LNG carriers for [...] 10 years, it means that the experienced design and engineers, and also the experienced construction team of the cargo containment system might have been moved to another shipyard. Therefore, generally speaking, it should not be advisable to order a conventional large scale LNG carrier [from] this shipyard”.¹⁹⁰⁷ Another customer specified that in some cases even less than 10 years of inactivity would be a problem: “10 years out of action is a lot considering the pace at which technology is changing. Furthermore the yard needs to develop certain skill sets that may not be as effective in the first vessels being produced. We have seen that even shorter periods of reduced or not LNG [carriers] building inactivity has a negative impact on the built quality”.¹⁹⁰⁸ That even less than 10 years of inactivity may represent an issue is shown by the following facts. First, Imabari, which delivered its last [...] LLNGC in [...], as explained by [...], experienced serious building difficulties with that order, [...] and or [...] cancelled the 2015 [...] (see **Section 8.3.2.2 (C)**), [...]. Second, STX, which delivered its last [...] LLNGC in [...], is currently out of the market and does not appear likely to resume its activities any time soon. As explained by [...]: “[...] although theoretically it might resume its activities, to become competitive again with the other big three Korean shipbuilders in [LLNGCs] will take significant effort”.¹⁹⁰⁹ As emphasised by one classification society, “[i]t is very expensive and it may not be easy to reactivate a shipyard that was mothballed. First, it depends on whether the equipment is still there or whether it was sold off. Second, it depends whether skilled work force is available. After a while, it gets very difficult to find skilled work force.[...]”¹⁹¹⁰
- (1073) With respect to large FSRUs, a majority of customers that expressed an opinion indicated that there is a period before which they would not consider a shipbuilder as a credible competitor for the type and size of vessel they are looking for.¹⁹¹¹ For example, one customer stated that a “[s]hipbuilder must have adequate experience for this type of vessels”.¹⁹¹² A majority of customers that expressed an opinion indicated that they would either not buy a large FSRU from a shipbuilder that has not produced an FSRU of a specific size for 10 years or that they would so on certain strict conditions like having a strong and continuous orderbook in conventional LLNGCs or provided that such shipbuilder is subject to an extensive qualification programme.¹⁹¹³ For example, one customer stated that FSRUs is a “very complex

¹⁹⁰⁴ Replies to question 28 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰⁵ Replies to question 28 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰⁶ Replies to question 28 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰⁷ Replies to question 28.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰⁸ Replies to question 28.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹⁰⁹ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]
¹⁹¹⁰ Minutes of the conference call with [...], paragraph 19. [DOC ID: 2473]
¹⁹¹¹ Replies to question 72 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹¹² Replies to question 72 of Questionnaire Q8 to Customers. [DOC ID: 3241]
¹⁹¹³ Replies to questions 73 and 73.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

vessel type that requires skill and expertise".¹⁹¹⁴ Another customer stated that after 10 years of inactivity, *"they might have lost the ability/know-how"*.¹⁹¹⁵

- (1074) The above considerations are supported by shipbuilders' reply to the market investigation. All shipbuilders that expressed a meaningful opinion explained that track-record do represent an obstacle when entering the market for conventional LLNGCs in terms customers reach.¹⁹¹⁶ For example, one [...] shipbuilder stated that *"[m]any LNG carriers owners are conservative shipping companies so it is difficult for new entrants to enter the market"*.¹⁹¹⁷ A shipbuilder stated that *"[...] building small LNG carriers does not give a yard a notable advantage to start building large LNG carriers (compared to yards with no experience in building small LNG carriers). The type of cargo tank containment system is different in small LNG carriers and in large LNG carriers. Therefore, experience in building small LNG carriers may help the yard in building large LNG carriers but it does not necessarily give the yard a notable advantage in entering the market for large LNG carriers. In addition, customers typically attach great importance to the track record of the yard in building large LNG carriers and a yard which has only built small LNG carriers just cannot show said track record."*¹⁹¹⁸ Another shipbuilder [...], stated that, although it *"[...] considers that it has the right facilities (e.g. dry-docks and quays) the right equipment to build large LNG carriers and an advantage given its experience in [...] (it has knowledge of the value chain [...]), it has no track record in the manufacturing of large LNG carriers or large FSRUs. Therefore, it would be difficult for [...] to be selected by a customer for orders of large LNG carriers [...] immediately."*¹⁹¹⁹ In addition, a majority of shipbuilders that are not active in membrane LLNGCs consider that they can neither build nor install membrane LNG cargo tanks.¹⁹²⁰
- (1075) The above considerations are also confirmed by brokers.¹⁹²¹ For example, one broker stated that *"[...] a ship owner that is pursuing an order for a very large vessel is unlikely to trust a shipbuilder with no specific track record. A good yard like HHI with a long track record of building all types of complicated vessel would be trusted by most buyers to build almost anything. A less experienced yard without the same technical and design resources may not be. Also, it depends what type of ship the yard is going from and to. To go up the value chain from a simple bulker to an LNG ship would be difficult. [...]"*¹⁹²²
- (1076) [...] ¹⁹²³
- (1077) Moreover, the Commission considers that, as shown by the updated Clarksons database, both Parties have been increasing their quantitative (and thus qualitative)

¹⁹¹⁴ Replies to question 73.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹¹⁵ Replies to question 73.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹¹⁶ Replies to question 58 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁹¹⁷ Replies to question 58 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁹¹⁸ Minutes of the conference call with [...] dated 21 February 2020, paragraph 6. [DOC ID: 2614]

¹⁹¹⁹ Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 6. [DOC ID: 2780]

¹⁹²⁰ Replies to question 68 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁹²¹ Minutes of the conference call with [...] dated 4 March 2020, paragraph 11. [DOC ID: 2699]

¹⁹²² Minutes of the conference call with [...] dated 2 March 2020, paragraph 9. [DOC ID: 2657]

¹⁹²³ The Notifying party's internal documents responsive to RFI 3, HHIH's internal email correspondence from LNGC sales department dated 14 August 2018, page 3, EU_HHI_0000445-T, [DOC ID: 1836-500].

track record in LLNGCs.¹⁹²⁴ This is especially true, from both a quantitative and qualitative perspective, when it comes to Arc7 LLNGCs (for DSME)¹⁹²⁵ and LLNGCs equipped with air lubrication technology (for both Parties).¹⁹²⁶ In contrast, the Commission notes that CSSC (Hudong) has never received orders for any Arc7 LLNGCs¹⁹²⁷ or for any LLNGCs equipped with air lubrication technology.¹⁹²⁸ This is also confirmed by an internal document of DSME, [...].¹⁹²⁹

- (1078) Fifth, the market investigation showed that after-sale support is an indicator of a shipbuilder's quality and thus important for customers. For example, one customer interviewed by the Commission stated that *“post delivery services are very important; the owner may need technical support from the shipbuilder years after delivery. Customers therefore prefer working with established shipbuilders that are expected to remain in business in the long term.”*¹⁹³⁰ A majority of customers that expressed an opinion confirmed that the ability of shipbuilders to offer after sale services play an important role in their ordering decision.¹⁹³¹ For example, one customer stated that *“LNG [carriers] are high tech ships and we always need assistance from the builders to overcome technical problems”*.¹⁹³² Another customer stated that *“[a]fter sale for such a complex ship is very important. Fast warranty defects remedy is key for uninterrupted service”*.¹⁹³³
- (1079) This is also confirmed by shipbuilders' reply to the market investigation. A majority of shipbuilders that expressed an opinion considered that after sale service plays an important role in fostering the shipbuilder/shipyard's reputation.¹⁹³⁴ For example, one shipbuilder stated that *“[...] a better after sale service will form a better reputation of the shipyard. Suppliers with good after-sales service will have priority”*.¹⁹³⁵ Another shipbuilder stated that *“[a]fter sales service is important as shipbuilders provide warranties to ship owners for the vessels after delivery and shipbuilders often rely on its suppliers and contractors to back-up this warranty”*.¹⁹³⁶ A shipbuilder stated that *“[i]t is expected that the shipyard's reputation will be enhanced by promptly and flexibly responding to problems arising on service vessels [...]”*.¹⁹³⁷

¹⁹²⁴ The Notifying Party's reply to RFI 59, Annex Q1 and Q2. See also the Notifying Party's reply to questions 16, 17 and 38, annexes Q16, Q17 and Q38 of RFI 67.

¹⁹²⁵ The Notifying Party's reply to RFI 59, Annex Q3 v2. See also the Notifying Party's reply to question 26 of RFI 67, Annex Q26.2.

¹⁹²⁶ The Notifying Party's reply to RFI 59, Annex Q4. See also the Notifying Party's reply to question 26 of RFI 67, Annex Q26.3.

¹⁹²⁷ The Notifying Party's reply to RFI 59, Annex Q3 v2. See also the Notifying Party's reply to question 26 of RFI 67, Annex Q26.2.

¹⁹²⁸ The Notifying Party's reply to RFI 59, Annex Q4. . See also the Notifying Party's reply to question 26 of RFI 67, Annex Q26.3.

¹⁹²⁹ The Notifying Party's reply to question 7 of RFI 67, Annex Q 7.2.9, page 7. See also The Notifying Party's reply to question 7 of RFI 45, Annex Q7.2.76, slide 9 of 23 July 2020.

¹⁹³⁰ Minutes of the conference call with [...] dated 2 July 2019, paragraph 23. [DOC ID: 1328]

¹⁹³¹ Replies to questions 59 and 59.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹³² Replies to question 59.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹³³ Replies to question 59.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹³⁴ Replies to questions 46 and 46.1 of Q10 to Competitors. [DOC ID: 3243]

¹⁹³⁵ Replies to question 46 of Q10 to Competitors. [DOC ID: 3243]

¹⁹³⁶ Replies to question 46 of Q10 to Competitors. [DOC ID: 3243]

¹⁹³⁷ Replies to question 46.1.1 of Q10 to Competitors. [DOC ID: 3243]

- c) *Dock size, special equipment and facilities are very high barriers to entry and expansion*
- (1080) The market investigation showed that dock size, special equipment and facilities are crucial for a shipbuilder to successfully enter the market for LLNGCs.
- (1081) On dock size, a customer interviewed by the Commission explained that “*to be able to build an LNG vessel, a shipyard has to have a dry-dock which is larger than 300 meters.*”¹⁹³⁸ [...] shipbuilders stated that dock size becomes relevant especially for a shipbuilder active in small LNGCs to enter the market for LLNGCs.¹⁹³⁹
- (1082) On special equipment and facilities, [...] explains that besides the dry dock, building an LNGC requires the shipbuilder to have a shipyard with special equipment or facilities. More specifically, NO technology requires plywood boxes to be able to build the containment system, while MARK technology requires making use of panels. A shipbuilder that uses NO technology (such as DSME for example), would have to build a box factory near the dry dock. The size of such boxes is rather critical and depends on the size and specific shape of the vessel. There are many immediate adjustments to the size of the boxes during the building process and therefore it is important to have the factory nearby.¹⁹⁴⁰ One customer stated that to successfully enter the market a shipbuilder needs to “[b]uild the required facilities [...]”.¹⁹⁴¹ A customer, [...], stated that starting building those vessels in a domestic yard would not be feasible because “[...] the domestic yard [...] currently does not have the capabilities to produce large LNG vessels ([...]) and acquiring this would require significant expansion works and such works are not feasible in the current priorities of [...] in terms of construction projects. [...]”.¹⁹⁴²
- (1083) With regard to building LLNGCs, for example, a shipbuilder indicated that “[...] the main barriers would be the [...] yard facilities including crane capacities and logistics”.¹⁹⁴³ Another shipbuilder stated that entering the market it would take “[...] at least five years because, in addition to obtaining the relevant licence [...], it would need to obtain and build the special facility that would be needed to manufacture the LNG tank.”¹⁹⁴⁴ In addition, shipbuilders mentioned machinery such as cryogenic machines, facilities (especially to deal with the long outfit period) and propulsion as LNG-related equipment or facilities for LLNGCs.¹⁹⁴⁵ For example, one shipbuilder stated that “[t]he most important facilities necessary to build LNG vessels are: dock facilities and crane facilities”.¹⁹⁴⁶ Another shipbuilder, stated that “[...] before merging with [...] had the intention to try to enter the market for conventional large membrane LNG carriers with focus on domestic market, [...]. Building an LNG carrier (especially a large LNG carrier) requires an investment in specialised facilities and equipment to be able to perform welding [...], to build, install and test the membrane cargo tank containment system [...] and large [...] special quays [...] for cargo pump towers installation (the cargo pump towers have to be installed while the membrane completed, so the towers complete set (near 40m high) is lifted up

¹⁹³⁸ Minutes of the conference call with [...] dated 28 June 2019, paragraph 20. [DOC ID: 190]

¹⁹³⁹ Replies to question 101.3 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁹⁴⁰ Replies to question 61.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁴¹ Replies to question 61.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁴² Minutes of the conference call with [...] dated 25 February 2020, paragraph 12. [DOC ID: 2350]

¹⁹⁴³ Replies to question 101.3 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

¹⁹⁴⁴ Minutes of the call with [...] dated 26 July 2019, paragraph 9. [DOC ID: 296]

¹⁹⁴⁵ Replies to questions 48, 51 and 69 of Questionnaire Q10 to Competitors. [DOC ID: 3241]

¹⁹⁴⁶ Minutes of the conference call with [...] dated 21 February 2020, paragraph 7. [DOC ID: 2614]

vertically above trunk deck (abt. 35m high) firstly and then put down in cargo hold of vessel. In addition, storage facilities for special components (insulation boxes, invar or corrugated S.S. material and components etc..) are needed to build large LNG carriers”.¹⁹⁴⁷ Those shipbuilders that expressed an opinion, ranked, on a 1-10 scale, in terms of difficulty to be procured, an average of 4.4 finding the appropriate dock size.¹⁹⁴⁸

- (1084) In its Response to the Second Letter of Facts,¹⁹⁴⁹ the Notifying Party claims that [...] statement, which would exclude that HHHH, DSME and SHI have a “*dedicated work area*”, used for the construction of LLNGCs, would undermine the Commission’s assessment that specialised facilities or equipment are needed. The Commission notes that the alleged absence of a dedicated work area does not exclude that there are specialised facilities or equipment. Indeed, in response to the Notifying Party’s argument, the Commission notes that [...] states that “[...] *there are some facilities/equipment used for LLNGCs [...]*”.¹⁹⁵⁰
- (1085) As explained in **Section 8.3.7**, a majority of shipbuilders that expressed an opinion cannot provide a concrete estimate of the size and timing required to expand existing docks or building new docks and acquire other elements of infrastructure and equipment.
- (1086) Moreover, [...] has confirmed that for a shipbuilder active in small LNGCs, entering the market for LLNGCs is not just a matter of scale for it requires significant investments in adapting dry docks, lifting equipment and heavy cranes, as well as to develop and implement a specific industrial organisation.¹⁹⁵¹ It is also in this respect that the track record of shipbuilders is a particularly important parameter of competition and a very high barrier to entry and expansion in the LLNGC market,¹⁹⁵² as ultimately ship-owners and/or charterers of LLNGCs are willing to buy or use a sea-proven technology installed by an experienced shipbuilder capable of correctly constructing it.¹⁹⁵³ Indeed, contrary to what is argued by the Notifying Party, according to which a number of shipbuilders globally would already have very large docks and heavy equipment as they are active in the largest types of vessels as VLCCs and according to which, in any event, the LLNGC-specific equipment would be easy and cheap to obtain,¹⁹⁵⁴ the Commission notes that, for the reasons explained in **Section 7.2.3** and **Sections 8.3.4.2, 8.3.4.3**, if this were the case, there would have been more market entries or expansions, less market exits and therefore the LLNGC market would not be as concentrated as it is now.
- (1087) In any event, as explained in **Sections 7.1, 7.2**, small LNGCs use a different technology: only [...] of the small LNGCs delivered in the 2014-2019 period, [...] of those delivered in the 2015-2020 period and [...] of those delivered in the 2016-2021 (up to 30 September 2021) period use membrane technology.¹⁹⁵⁵ All LLNGCs ordered since 2015 include a membrane tank.¹⁹⁵⁶ In addition, as explained in **Section**

¹⁹⁴⁷ Minutes of the conference call with [...] dated 20 February 2020, paragraph 11. [DOC ID: 2889]

¹⁹⁴⁸ Replies to question 79 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁹⁴⁹ Response to the Second Letter of Facts, paragraph 290(b)(iii).

¹⁹⁵⁰ [...] reply to the Commission’s RFI to [...] dated 4 May 2021. [DOC ID: 5494]

¹⁹⁵¹ Minutes of the conference call with [...] dated 21 February 2020, paragraph 13. [DOC ID: 2530]

¹⁹⁵² Minutes of the conference call with [...] dated 21 February 2020, paragraph 13. [DOC ID: 2530]

¹⁹⁵³ Minutes of the conference call with [...] dated 21 February 2020, paragraph 13. [DOC ID: 2530]

¹⁹⁵⁴ Response to the First Letter of Facts, paragraphs 199-203.

¹⁹⁵⁵ The Notifying Party’s reply to question 22 of RFI 67, Annex Q22.

¹⁹⁵⁶ See **Section 8.3.1** and the Notifying Party’s reply to question 16 of RFI 67, Annex Q16, where it is shown that no Japanese shipbuilder received any LLNGC orders since 2016.

8.3.8.3 (C) below, dock size, special equipment and facilities in general do have an impact on LLNGC construction time.¹⁹⁵⁷

d) *Delivery time and quay slots are very high barriers to entry and expansion*

(1088) The market investigation showed that delivery time is an important factor for a successful entry and plays an important role for a shipbuilder to be able to stay in the market.¹⁹⁵⁸ A majority of customers that expressed an opinion considered that their decision to purchase a conventional LLNGC from a particular shipbuilder/shipyard take into account delivery time of the vessel.¹⁹⁵⁹ For example, one customer stated that “[i]t is one of the essential conditions to meet the project/charterer’s requirement”.¹⁹⁶⁰ Another customer stated that “[i]f an LNG liquefaction plant is due for start up on a given date it is essential that the vessel is ready for that date otherwise the whole project risks being delayed”.¹⁹⁶¹ Similar considerations apply to large FSRUs.¹⁹⁶²

(1089) More specifically, only a minority of customers that expressed an opinion stated that they would generally consider purchasing a conventional LLNGC from a shipbuilder/shipyard where that shipbuilder has previously not delivered it on time.¹⁹⁶³ Similar considerations apply for large FSRUs.¹⁹⁶⁴ Moreover, several customers indicate that they have decided not to purchase a conventional LLNGC from a particular shipbuilder/shipyard because the delivery time offered was too long.¹⁹⁶⁵ With respect to large FSRUs, customers indicate that they have never had, so far, to order from another shipbuilder because that shipbuilder has not previously delivered the large FSRU on time or because the large FSRU built by that shipbuilder had technical problems two years after delivery.¹⁹⁶⁶

(1090) In addition, the market investigation showed that dock/quay coordination is a very important factor. One customer stated that “[...] LNG carriers are special in that they need to spend a very long time floating by the quay for the installation of the containment system, especially if it is membrane containment system. The construction of a large LNG carrier requires about 28 months: 12 months of metal works in the yard, then 3 months on the dry dock and then 13 months by the quay.”¹⁹⁶⁷ This is also confirmed by some shipbuilders¹⁹⁶⁸ that ranked, on a 1-10 scale in terms of difficulties to be procured, an average of 5.4 quay slots coordination.¹⁹⁶⁹ [...].¹⁹⁷⁰

(1091) [...].¹⁹⁷¹

¹⁹⁵⁷ The Notifying Party’s reply to RFI 60. The Notifying Party’s reply to questions 30 and 31 of RFI 67.

¹⁹⁵⁸ Replies to question 61.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁵⁹ Replies to question 30 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶⁰ Replies to question 30.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶¹ Replies to question 30.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶² Replies to questions 76 and 76.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶³ Replies to questions 29.1 and 29.1.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶⁴ Replies to questions 74.1 and 74.1.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶⁵ Replies to question 31 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶⁶ Replies to questions 75 and 75.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁶⁷ Minutes of the conference call with [...] dated 10 February 2020, paragraph 19. [DOC ID: 1812]

¹⁹⁶⁸ Replies to questions 51, 81, 81.1 and 81.2 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁹⁶⁹ Replies to question 79 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

¹⁹⁷⁰ [...].

¹⁹⁷¹ DSME’s internal documents responsive to RFI 3, “Task Force’s Final Report on the Implementation of Onshore Construction of LNGC” dated 15 May 2018, page 3, 01.Report on completion of development of shore-based LNGC building techniques. [DOC ID: 1837-29]

e) *Financial backing is a very high barrier to entry and expansion*

(1092) The market investigation showed that financial backing may be an important factor for a successful entry in the market for LLNGCs.¹⁹⁷² For example, one customer stated that to successfully enter the market for LLNGCs, a shipbuilder should also secure “[s]tate support in some form or another (e.g. incentive program[me]s, subsidies, financial backing, export-credit facilitation, etc.), [...] local financial support (banks, [...] to provide refund guarantees, [...]). Shipyard balance sheet strength [...]”. Another customer stated that to successfully enter the market one what is needed is “[s]ome scale of company [that] could invest [in] infrastructure of LNG tank building. [...]”.¹⁹⁷³

(1093) Moreover, a majority of customers that expressed an opinion indicated that shipbuilders’ financial conditions are taken into account when placing an order.¹⁹⁷⁴ However, a majority of customers that expressed an opinion indicated that they have never rejected an offer from another shipbuilder because of its financial conditions (as customers would normally not invite shipbuilders that are not perceived financially strong enough to tenders) with the exception of [...], mentioned by one customer as an example of shipbuilder from which they have rejected an offer due to [...]’s financial conditions.¹⁹⁷⁵

(B) There have been no recent entries in the LLNGC market

(1094) The Commission considers that recent entry should be assessed in light of the industry dynamics and encompass the following cumulative aspects: receiving the first order and successfully delivering the first four to five vessels.

(1095) Initially, based on the data submitted by the Notifying Party¹⁹⁷⁶, the Commission analysed alleged recent entry in small LNGCs and LLNGCs in the 2014-2018, 2015-2019, 2016-2020 and 2017-2021 (up to 30 September 2021) period. Except for JMU (whose entry was not successful), SHI-Zvezda (which, for the reasons explained below, cannot be considered as a new entrant exerting competitive constraint on the Parties or as a potential new entrant) or Wison (which, for the reasons explained below cannot be considered as a new entrant exerting competitive constraint on the Parties or as a potential new entrant), all of the shipbuilders that were indicated by the Notifying Party as new entrants since 2014 received, at their best, the first order only for small LNGCs.¹⁹⁷⁷ With regard to LLNGCs, the Commission found that market entry and expansion is significantly more difficult than for small LNGCs, regardless of whether it comes from a greenfield or from a shipbuilder already active in other vessel types or in small LNGCs. This explains why customers indicated that, besides Keppel and Sembcorp (active in small LNGCs

¹⁹⁷² Replies to question 61.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁷³ Replies to question 61.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁷⁴ Replies to question 117 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁷⁵ Replies to question 120 of Questionnaire Q8 to Customers. [DOC ID: 3241]

¹⁹⁷⁶ The Notifying Party’s reply to question 42 of RFI 1, Annex Q42, Table 6; The Notifying Party’s reply to question 21 of RFI 1, Annex Q21.2 updated to the Notifying Party’s reply to question 1 of RFI 34; Clarksons database responsive to RFI 17. See also Annex Q16 to RFI 67.

¹⁹⁷⁷ Although the Commission concluded that small LNGCs (which is a very tiny market) are not part of the same market as LLNGCs and, that a majority of customers would not consider ordering LLNGCs from someone with experience in small LNGCs only, do not exert a competitive constraint on the market for LLNGCs (although more complex vessels if compared to other vessel types, they are less sophisticated than LLNGCs) it found that in most cases, for a shipbuilder to be able to deliver even its first small LNGC, it would take a relatively significant amount time considering the time between the date of the first order and the date of delivery.

and in the conversions of conventional LNGCs into FSRUs), Hanjin (first order of small LNGC received in [...] and first delivery in [...]),¹⁹⁷⁸ CSIC (Dalian) (first order for small LNGC in [...] and first delivery in [...])¹⁹⁷⁹ and CSSC (Jiangnan) (first order of small LNGC in [...] and first delivery in [...]),¹⁹⁸⁰ or SHI-Zvezda (which cannot, for the reasons outlined below, be considered as a new or potential entrant or timely, likely and sufficient entrant) there have been no new entrants in the market for LLNGCs since 2014.¹⁹⁸¹

- (1096) The Commission examined also the 2007-2019 period and found that if this period were to be taken into account, also STX (now re-named K Shipbuilding), which has now exited the market, would have to be considered as a new entrant.¹⁹⁸² [...].¹⁹⁸³ Therefore, as explained in **Section 8.3.4.3**, contrary to what is argued by the Notifying Party in paragraph 171 of the response to the First Letter of Facts, the Commission has not failed to address the relevance of MHI's withdrawal in light of MI-LNG, which, as explained in **Section 8.3.8.3**, in particular **Section 8.3.8.3 (C) x), xi) and xxvii)** is not a likely, timely and sufficient entrant in the LLNGC market.
- (1097) The Notifying Party confirmed the Commission's findings that there has been only one new entrant in the 2014-2018 period, namely JMU, a Japanese shipbuilder.¹⁹⁸⁴ However, as shown by the market share data submitted by the Notifying Party, JMU delivered its first and only conventional LLNGCs in [...] (ordered in [...]).¹⁹⁸⁵ This indicates that for a shipbuilder to be able to deliver its first LLNGC it would take a relatively significant amount of time from the date of the first order to the date of delivery. That there was no market entry in LLNGCs in the 2014-2018 period was also confirmed by a customer interviewed by the Commission, which explained that "[t]here have not been any market entry for large LNG carriers or FSRUs in the past 5 years. For smaller LNG carriers, there have been a couple of Chinese yards entering the market."¹⁹⁸⁶
- (1098) The Commission has examined in more detail the alleged market entry or expansion of each of JMU, STX and SHI-Zvezda in the market for LLNGCs and, with respect to the large FSRUs segment, of CSSC (Hudong) and Wison below.
- a) *JMU*
- (1099) With respect to JMU, the Commission notes the following considerations.

¹⁹⁷⁸ The Notifying Party's reply to question 21 of RFI 1, Annex Q21.2 updated to the Notifying Party's reply to question 1 of RFI 34. See also the Notifying Party's reply to question 13 of RFI 67, Annex Q13.

¹⁹⁷⁹ The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

¹⁹⁸⁰ The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

¹⁹⁸¹ Replies to question 55 of Questionnaire Q3 to Customers. [DOC ID: 3236]

¹⁹⁸² The Notifying Party's reply to question 1 of RFI 34, Annex Q1. See also the Notifying Party's reply to questions 1 and 2 of RFI 33.

¹⁹⁸³ The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 2c.

¹⁹⁸⁴ The Notifying Party's reply to question 42 of RFI 1, Annex Q42, Table 6. The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

¹⁹⁸⁵ The Notifying Party's reply to question 21 of RFI 1, Annex Q21.2. The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

¹⁹⁸⁶ Minutes of the conference call with [...] dated 3 July 2019, paragraph 25. [DOC ID: 300]

- (1100) First, JMU is a Japanese shipbuilder using [...] cargo tank containment system.¹⁹⁸⁷ For the reasons outlined in **Section 8.3.4.3** above, JMU was not capable of exerting a competitive constraint.
- (1101) Second, as explained in **Section 8.3.4.3** above, it received its first and last order of four conventional non-membrane LLNGCs from a Japanese customer¹⁹⁸⁸ in [...], which it delivered after a relatively significant amount of time in [...].
- (1102) [...].¹⁹⁸⁹ [Parties' internal document].¹⁹⁹⁰
- b) *STX (now re-named K Shipbuilding)*
- (1103) With respect to STX, the Commission notes the following considerations. First, STX is a South Korean shipbuilder that received its first order of LLNGCs in [...],¹⁹⁹¹ delivered in [...].¹⁹⁹² Second, STX received its last LLNGC order in [...], delivered in [...].¹⁹⁹³ Third, since then, it has exited the market.¹⁹⁹⁴ (See also **Section 8.3.8.3 (C) iii**).
- c) *SHI-Zvezda*
- (1104) With regard to SHI-Zvezda, contrary to what is argued by the Notifying Party,¹⁹⁹⁵ the Commission notes that it can neither be considered as a new credible entrant exerting a competitive constraint on the Parties nor as a potential entrant for a number of reasons.
- (1105) First, although SHI-Zvezda appears to have recently obtained its GTT licence,¹⁹⁹⁶ as explained in **Section 8.3.8.3 (A) a**), a GTT licence is not sufficient to become a credible competitor in the global LLNGC market in the absence of sophisticated know-how/technology and complex project management skills.
- (1106) Second, the business rationale for such a cooperation agreements seems to be linked to the promotion by South Korean's shipbuilders of their own companies in jurisdictions that are either discouraging or even forbidding state-owned customers to place orders from foreign shipbuilders. As explained [...]: "*[t]he partnership between Zvezda and SHI was formed as a result of competitive tender between the three Korean shipbuilders*".¹⁹⁹⁷ Contrary to what is argued by the Notifying Party in its Response to the Second Letter of Facts,¹⁹⁹⁸ which contests the Commission

¹⁹⁸⁷ According to Annex Q16 of RFI 67, [...].

¹⁹⁸⁸ The Notifying Party's reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party's reply to questions 16 and 17 of RFI 67, Annex Q16 and Q17.

¹⁹⁸⁹ Minutes of the conference call with [...] dated 18 February 2020, paragraph 7. [DOC ID: 2081]

¹⁹⁹⁰ DSME's internal documents responsive to RFI 31, "Tokyo Branch Weekly Report – Major Information Update", slide 3, 2019, Tokyo Branch_W34_2019_DSMEC-00001223, [DOC ID: 3064-35].

¹⁹⁹¹ The Notifying Party's reply to question 1 of RFI 35, Annex Q1 (followup) as an updated version of the Notifying Party's reply to question 7 of RFI 19, Annex Q7.

¹⁹⁹² Clarksons database submitted in response to RFI 17. The Notifying Party's reply to questions 16 and 17 of RFI 67, Annex Q16 and Q17.

¹⁹⁹³ Clarksons database submitted in response to RFI 17. The Notifying Party's reply to questions 16 and 17 of RFI 67, Annex Q16 and Q17.

¹⁹⁹⁴ The Notifying Party's reply to question 1 of RFI 34, Annex Q1. The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

¹⁹⁹⁵ Response to the First Letter of Facts, paragraphs 208-210.

¹⁹⁹⁶ GTT's press release "GTT and Zvezda Shipbuilding Complex sign a technical assistance and licence agreement for the construction of LNG carriers incorporating membrane tank systems" dated 2 July 2020. [DOC ID: 4095]

¹⁹⁹⁷ Minutes of the conference call with [...] dated 26 February 2020, paragraph 4. [DOC ID: 2900]

¹⁹⁹⁸ Response to the Second Letter of Facts, paragraph 298.

finding on this point and its relevance to the assessment of barriers to entry, the Commission notes that the business rationale for the SHI-Zvezda cooperation agreement confirms that SHI-Zvezda can neither be considered as a new credible entrant exerting a competitive constraint on the Parties nor as a potential entrant due to its exclusive domestic focus and dependency on SHI.

- (1107) [Parties' internal document]¹⁹⁹⁹ [Parties' internal document]²⁰⁰⁰ [Parties' internal document]²⁰⁰¹ [Parties' internal document]²⁰⁰²
- (1108) This view is also confirmed by the press. In one article about the Russian ice-breaking project, it is reported that Novatek, a Russian oil major, announced to place orders for up to 42 ice breaking LNGCs in the coming years.²⁰⁰³ [Parties' internal document]²⁰⁰⁴ However, Novatek requested an exemption from the Russian requirement to contract with the domestic Zvezda for all vessels due to growing concerns about timely delivery and [...] % higher costs and it recently received permission to order up to 10 vessels from foreign shipbuilders.²⁰⁰⁵ More specifically on timely delivery, in an internal document of DSME (internal email exchange on the Arc7 LNGC meeting with SCF report of 15 January 2020), it is reported that “[...]”²⁰⁰⁶ More specifically on the Novatek’s request to the Russian Government from the “buy Russian” obligation due to [...] % higher costs, the Commission notes that, as shown by an email exchange between HHIH’s London office and HHIH’s sales department dated 25 March 2019, HHIH was taking this issue very seriously, envisaging that part of the orders would be placed overseas.²⁰⁰⁷ In another internal document submitted by the Notifying Party (email exchange between HHIH’s gas carrier sales department and HHIH’s London office, it is further reported that “[...] *Novatek is still persuading the government with a direct overseas order plan [...]*”²⁰⁰⁸
- (1109) Third, although a shipbuilder does not necessarily need to be active outside of its domestic market to be considered as a new entrant, becoming a new credible entrant active in the worldwide market for LLNGCs takes significant time. For example, CSSC (Hudong), which, as explained in **Section 8.3.4.2**, is not yet on par with HHI, DSME or SHI, signed the first GTT licence in [...],²⁰⁰⁹ received its first order (domestic) in [...], but received its first non-domestic order for LLNGC in [...] (delivered between [...] and [...]) and the first European order in [...]

1999 The Notifying Party’s internal documents responsive to RFI 3, letter from Far Easter Shipbuilding and Ship Repair Center (“FESRC”) to HHIH dated 26 May 2016, EU_HHI_0000382. [DOC ID: 1836-334]

2000 The Notifying Party’s internal documents responsive to RFI 3, “Status of Shipbuilding Industries of Major Countries” dated 27 August 2019, page 14, EU_HHI_0000235-T. [DOC ID: 1506]

2001 DSME’s internal documents responsive to RFI 3, “Sales Meeting Chaired by Director General of Business Division (4th Quarter 2015)” dated 21 December 2015, slide 57, 2015-52nd week sales meeting materials_overseas branch(redacted). [DOC ID: 1837-71]

2002 The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.1.20, page 2.

2003 High North News, “Novatek To Order Up To 42 New Arc7 LNG Carriers Totaling \$12bn” dated 27 January 2020. [DOC ID: 2990]

2004 The Notifying Party’s reply to question 7 of RFI 67, Annex Q 7.2.9, page 7.

2005 High North News, “Novatek To Order Up To 42 New Arc7 LNG Carriers Totaling \$12bn” dated 27 January 2020. [DOC ID: 2990] The Notifying Party’s reply to question 7 of RFI 45, Annexes Q 7.1.11 and Q 7.1.13.

2006 The Notifying Party’s reply to question 7 of RFI 45, Annex Q 7.2.42, page 3.

2007 The Notifying Party’s reply to question 7 of RFI 45, Annexes Q 7.1.11 and Q 7.1.13.

2008 The Notifying Party’s reply to question 7 of RFI 45, annex Q 7.1.21, page 2.

2009 [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

delivered between [...] and [...]).²⁰¹⁰ Given its lasting dependency on SHI, the Commission remains of the view that SHI-Zvezda cannot be considered as a recent or new entrant in the LLNGC market at this point and in the near future. Generally, as shown by the Clarksons’ data, the Commission notes that experience shows how becoming a new credible entrant active in the worldwide market for LLNGCs takes significant time and efforts and entails various long-term challenges.²⁰¹¹ In that respect, when asked to comment on the reasons why it took several years for CSSC (Hudong) to receive its first international and its first European order, [...] explained that “[...] *it is a complicated process to master the designing rationale and construction process, it is necessary to accumulate experience and improve step by step through practice, and the limitation of manufacturing equipment, manufacturing site and other factors have also restricted the speed of development of [...]*”.²⁰¹² As [...] also explained, CSSC (Hudong)’s entry has been challenging in spite of the institutional support of the Chinese government, as CSSC (Hudong) “[...] *underwent severe delays in building the vessels and could not deliver until 2008. Even after delivery, technical problems continued to emerge such that in [...], only [...] months after the first vessel was delivered, the LLNGC had to undergo lengthy repairs in Singapore.*”²⁰¹³

- (1110) Fourth, SHI-Zvezda has no track record as it has never received any orders either for small LNGC or LLNGCs before [...] and has not delivered any LNGC so far. SHI-Zvezda’s first order of [...] is not only domestic but also captive as it was placed by [...] (the same is true for the [...] LLNGCs ordered by [...], from SHI-Zvezda in [...]) and thus SHI-Zvezda does not seem to be meant for seeking orders from international customers. [...], which was part of the customers which originally ordered (in [...]) from DSME the first ice-breaker LLNGC ever built stated that “[...] *Zvezda, [...] has no autonomous track-record in large LNG carriers and is currently totally dependent in terms of know-how in large LNG shipbuilding, from SHI.*”²⁰¹⁴ [...] further explains that “[...] *although it is not excluded that Zvezda may in the future be capable of autonomously building large LNG carriers, it will not be capable of doing so for a significant period of time, likely not earlier than 2024-2025 [...]*”,²⁰¹⁵ that “*the price difference with the larger shipbuilders will dictate the need for long term charter commitments by most likely Russian oil and gas majors*”²⁰¹⁶ and that, in this context, “*State owned customers tend to order from domestic state owned shipbuilders*”.²⁰¹⁷
- (1111) Fifth, SHI-Zvezda is totally dependent, from a know-how and technological perspective on SHI, with which, as explained above in this Section it entered into a cooperation agreement for the construction of ice-breaker LLNGCs. Such considerations are also confirmed by brokers. For example, one broker stated that it “[...] *is sceptical regarding Zvezda’s ability to build large LNG carriers*

²⁰¹⁰ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated); Clarksons database submitted by the Notifying Party in response to RFI 17. The Notifying Party’s reply to questions 16 and 17 of RFI 67, Annex Q16 and Q17.

²⁰¹¹ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated); Notifying Party’s reply to RFI 59, Annex Q2. Clarksons database submitted by the Notifying Party in response to RFI 59. See also the Notifying Party’s reply to questions 16, 17 and 38, annexes Q16, Q17 and Q38 of RFI 67.

²⁰¹² [...] reply to question 9 of Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]

²⁰¹³ [...] observations on the SO, page 2. [DOC ID: 3851]

²⁰¹⁴ Minutes of the conference call with [...] dated 26 February 2020, paragraph 8. [DOC ID: 2900]

²⁰¹⁵ Minutes of the conference call with [...] dated 26 February 2020, paragraph 8. [DOC ID: 2900]

²⁰¹⁶ Minutes of the conference call with [...] dated 26 February 2020, paragraph 8. [DOC ID: 2900]

²⁰¹⁷ Minutes of the conference call with [...] dated 26 February 2020, paragraph 8. [DOC ID: 2900]

*autonomously and independently from its cooperation with SHI.*²⁰¹⁸ Another broker stated that it “[...] isn’t aware of any new entrant in the market for large LNG carriers. With respect to Zvezda, it cannot be considered as a new entrant as it obtains the necessary design, technology and know-how from Korea where it entered a cooperation agreement. Such cooperation agreement is de facto a subcontracting agreement. The reason why Samsung has entered such cooperation agreement is because to be able to sell to Russian customers you have to build in Russia for political reasons.”²⁰¹⁹

(1112) [...] ²⁰²⁰ [...] ²⁰²¹ [...] ²⁰²² [...] ²⁰²³ [...] ²⁰²⁴ [...] ²⁰²⁵ [...] ²⁰²⁶ [...] ²⁰²⁷

(1113) [Parties’ internal document].²⁰²⁸ [Parties’ internal document].²⁰²⁹ [Parties’ internal document].²⁰³⁰

(1114) [Parties’ internal document].²⁰³¹

(1115) Sixth, even assuming that SHI-Zvezda manages to deliver vessels of suitable quality, as reported above and mentioned in the press, captive customers such as [...] are already concerned about delivery time.

d) *Wison*

(1116) In its response to RFI 65, the Notifying Party submits that the Parties would “[...] continue to experience competitive constraint from potential market entry [...] [as] Clarksons data reports that [...]”.²⁰³² The Commission considers that this cannot be considered as a large FSRU (and therefore as an LLNGC) as defined in **Section 7.2** for the following reasons. First, the press article referred to by the Notifying Party²⁰³³ refers to a “floating storage regasification and power generation barge” whose acronym is “FSRP” and refers to it as a “facility”. Second, this is close to the offshore facilities described as an LNG floating production storage and offloading (“FLNG or LNG-FPSO”) or as a floating storage and offloading/floating storage units (“LNG FSO/FSU”) by the Notifying Party in its reply to question 5 of the Commission’s RFI 29. Third, as acknowledged by the Notifying Party at paragraph 187 of the Form CO, FPSO are classified as offshore facilities. Fourth, Clarksons classifies these as FPSO²⁰³⁴ and consistently excludes them from the LNGCs forecast.²⁰³⁵

2018 Minutes of the conference call with [...] dated 2 March 2020, paragraph 17. [DOC ID: 2657]
2019 Minutes of the conference call with [...] dated 4 March 2020, paragraph 20. [DOC ID: 2699]
2020 Minutes of the conference call with [...] dated 15 September 2020, paragraph 12. [DOC ID: 4113]
2021 Minutes of the conference call with [...] dated 15 September 2020, paragraph 9. [DOC ID: 4113]
2022 Minutes of the conference call with [...] dated 15 September 2020, paragraph 12. [DOC ID: 4113]
2023 Minutes of the conference call with [...] dated 15 September 2020, paragraph 10. [DOC ID: 4113]
2024 [...] reply to question 1(c) of Commission RFI to [...] dated 11 September 2020. [DOC ID: 4047]
2025 [...] reply to question 1(d) of Commission RFI to [...] dated 11 September 2020. [DOC ID: 4047]
2026 [...] reply to questions 1 and 10 of Commission RFI 2 to [...] dated 3 August 2020. [DOC ID: 3686]
2027 “Samsung heavy likely to win \$3bn order to build icebreakers for Russia’s Zvezda”, Hellenic Shipping News Worldwide dated 21 September 2020. [DOC ID: 4055]
2028 The Notifying Party’s reply to question 7, Annex Q7.1.27.
2029 The Notifying Party’s reply to question 7, Annex Q7.1.27.
2030 The Notifying Party’s reply to question 7, Annex Q7.1.27.
2031 The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.24, pages 1-4.
2032 The Notifying Party’s reply to question 3 of the Commission’s RFI 65.
2033 The Notifying Party’s reply to question 3 of the Commission’s RFI 65. See “Wison says building China’s first floating LNG power project” dated 4 February 2021. [DOC ID: 5827].
2034 Clarksons database provided by the Notifying Party in reply to question 38 of RFI 67, Annex Q38.
2035 [...] reply to question 1(a) of the Commission’s RFI of 17 March 2021. [DOC ID: 5222].

(1117) In any event, even if such facility were to be classified as a large FSRU within the meaning of **Section 7.2** (quod non), Wison could not be considered as a potential new entrant in large FSRUs (and therefore in LLNGCs). Indeed, for the reasons outlined above in, for example, **Section 8.3.8.3 (B)** the Commission considers that this would not change its assessment. [...].²⁰³⁶ [...].²⁰³⁷ [...].

e) CSSC (Hudong) for large FSRUs

(1118) The Commission notes that CSSC (Hudong) received its first ever order of [...]. For this reason, the Commission acknowledged that there has been only one potential new entrant in large FSRUs, that is CSSC (Hudong). The Commission further notes that, as explained by [...].²⁰³⁸ However, the Commission notes that, based on the information available, there are some challenges: one customer stated that “[...] *it is taking them approx. one year longer than the Koreans to build an FSRU*”.²⁰³⁹ [...].²⁰⁴⁰ [...].²⁰⁴¹ [...].

(1119) Contrary to what is argued by the Notifying Party in its Response to the Second Letter of Facts,²⁰⁴² in light of the above and of the fact that CSSC (Hudong) has not delivered [...] large FSRUs, and it has not started producing large FSRUs on a regular basis²⁰⁴³ and within reasonable delivery times, it cannot be considered as a recent entrant in the large FSRUs segment, let alone exerting a sufficient competitive constraint on the Parties in large FSRUs.

f) Further considerations

(1120) The Commission’s market investigation supports the above facts and considerations also for the following reasons.

(1121) [...].²⁰⁴⁴ [...].²⁰⁴⁵ [...].²⁰⁴⁶ [...].²⁰⁴⁷ [...] ²⁰⁴⁸ [...].²⁰⁴⁹

(1122) Second, a majority of customers that expressed an opinion are not aware of any instances where a new conventional LLNGC shipbuilder entered the market based on a cooperation agreement with a customer.²⁰⁵⁰ Amongst those that said otherwise, CSSC was mentioned once, SHI-Zvezda was mentioned twice and the rest did not

²⁰³⁶ The Notifying Party’s email to the case team of 27 October 2021 containing clarifications on question 32 of RFI 67, where the Notifying Party, in reply to question 2 of such clarification request, states that “*the LNG tank type [...] is not specified in Clarksons (i.e. it is currently unknown)*”.

²⁰³⁷ The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²⁰³⁸ Minutes of the conference call with [...] dated 7 February 2020, paragraph 5. [DOC ID: 2357]

²⁰³⁹ Minutes of the conference call with [...] dated 6 February 2020, paragraph 10. [DOC ID: 2782]

²⁰⁴⁰ [...] reply to question 2 (b) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

²⁰⁴¹ [...].

²⁰⁴² Response to the Second Letter of Facts, paragraph 298(b).

²⁰⁴³ As shown by Clarksons data provided by the Notifying Party in response to Annex Q.38 of RFI 67, [...].

²⁰⁴⁴ Replies to question 62.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁰⁴⁵ The Notifying Party’s reply to question 1 of RFI 34, Annex Q1. The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²⁰⁴⁶ The Notifying Party’s reply to question 1 of RFI 34, Annex Q1. The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²⁰⁴⁷ The Notifying Party’s reply to question 1 of RFI 34, Annex Q1. The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²⁰⁴⁸ The Notifying Party’s reply to question 1 of RFI 34, Annex Q1. The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²⁰⁴⁹ Replies to questions 96 and 96.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁰⁵⁰ Replies to questions 63 and 63.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

give meaningful indications.²⁰⁵¹ However, as explained above in this Section, SHI-Zvezda cannot be considered as a new entrant exerting competition constraint on the Parties. As explained by one customer, SHI-Zvezda “[...] is attempting to enter the market by way of joint venture with Korean yards but is focussed on dedicated shipbuilding work for Russian LNG projects”.²⁰⁵² With respect to large FSRUs segment, nearly all customers do not mention any sponsored entrant in the past 10 years.²⁰⁵³

(1123) In conclusion and in light of the above, the Commission considers that there have been no recent market entries in the LLNGC market.

(C) There is no likely, timely and sufficient entry/expansion in the LLNGC market

(1124) The Commission considers that there is no likely, timely and sufficient entry in the LLNGC market. The Commission will assess shipbuilders or shipyards mentioned in the SO and other additional ones including those that were indicated by the Notifying Party as alleged imminent or potential entrants/re-entrants due to their alleged capabilities and/or alleged track record.²⁰⁵⁴

(1125) At the outset, the Commission notes that, contrary to what is claimed by the Notifying Party,²⁰⁵⁵ the shipbuilders in question do not have a relevant track record in LLNGC, either because the Notifying Party took non-membrane LLNGCs and small or medium-sized LNGCs into account or simply because the membrane LLNGCs taken into account were built several years ago by shipbuilders that then exited the market.²⁰⁵⁶

(1126) For the purpose of this Section, the Commission will also consider that a shipbuilder with a GTT licence is to be considered as an “active licensee” when it has received at least one order for an LLNGC since 2014 and when it has a track record in LLNGCs, i.e. it has built and delivered at least two membrane LLNGCs since 2014.²⁰⁵⁷ The Commission notes that [...] considers to be active licensees by several criteria: (i) shipyard design and innovation; (ii) inherent production quality (e.g. defects discovered during the construction and to be remedied before delivery); (iii) defects discovered after delivery; (iv) duration of construction; (v) annual construction capacity; (vi) GTT staff requirement per vessel; (vi) ship-owner surveyors requirement.²⁰⁵⁸ Moreover, contrary to what claimed by the Notifying Party, i.e. that having a GTT licence would almost automatically render a shipbuilder as an imminent or potential entrant,²⁰⁵⁹ [...] explains that it is free of charge for a

²⁰⁵¹ Replies to question 63.2.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁰⁵² Replies to question 62.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁰⁵³ Replies to questions 97 and 97.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁰⁵⁴ Response to the SO, paragraphs 737-802. The Notifying Party’s Letter to DG COMP dated 29 June 2020 and its attachment.

²⁰⁵⁵ The Notifying Party’s Letter to DG COMP dated 29 June 2020 and its attachment.

²⁰⁵⁶ The Notifying Party’s reply to question 9 of RFI 44, Annex Q9. See also the Notifying Party’s reply to question 10 of RFI 67, Annex Q10. On this point, see paragraph 617 of the SO: 10 years or sometimes even less of inactivity may be enough to discourage customers to order LLNGCs from an LLNGC shipbuilder.

²⁰⁵⁷ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]. The Commission notes that, as explained in paragraph 609 of the SO, having a quantitative track record in LLNGCs means having built a full series of LLNGCs (4 to 5). For the purpose of this Section, however, where the purpose is to assess [...] inactive licensees, the Commission will follow [...] definition of “track record”, which is part of [...] definition of “active licensee”.

²⁰⁵⁸ [...] reply to question 1 and Annex 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²⁰⁵⁹ The Notifying Party’s Letter to DG COMP dated 29 June 2020 and its attachment.

shipbuilder to obtain the GTT licence (see **Section 8.3.8.3 (A) a**) for more details on this): “[t]his is why there are so many inactive GTT licensees. Royalty needs to be paid only from the moment GTT is notified for an order equipped with its technology. [...]”²⁰⁶⁰

- (1127) For the purpose of this Section, the Commission considers that, given the conglomerate nature of CSSC, all of its yards act independently hence there is no spill over from one to the other.²⁰⁶¹
- (1128) More specifically, the Commission found that there is no likely, timely or sufficient credible entry/expansion in the market for LLNGCs in the next few years for the following reasons.
- (1129) First and more generally, customers interviewed by the Commission indicated that credible entry is neither likely nor timely. For example one customer stated that “*a few years ago, the Chinese proved to be extremely active and opened several shipyards in a short period of time when demand increased. They also proved to be volatile and shutdown some of these yards as quickly when demand went down. Overall, there is no big movement in the market: the market now seems saturated and it is difficult to imagine new entrants in the short term*”.²⁰⁶² Another customer interviewed by the Commission stated that “*it is difficult to identify potential new entrants. Shipbuilding is an industry with high barriers to entry, in particular for large LNG carriers. It takes up to 4-5 years for a yard to enter the LNG market. i.e. first investing in learning how to build the vessel, then find a customer that would place an order, and at least 3 more years for the ship to be built. Overall, it takes several years to become a credible LNG builder. [...]*”²⁰⁶³ Another customer interviewed by the Commission explained that it would require 5-10 years for a shipbuilder to enter the market for LLNGCs.²⁰⁶⁴
- (1130) Second, a customer interviewed by the Commission explained that it expects a reduction in the number of players in the next years. This would be because of requirements needed for a new entrant to successfully enter the market are very demanding such as proven expertise and the ability to comply with demanding environmental regulations.²⁰⁶⁵
- (1131) Third, when asked about various shipbuilders’ capability to build conventional LLNGCs, SHI-Zvezda is the one mentioned the most by customers amongst those which are not active yet, followed by Mitsui, STX , COSCO’s DACKS, Yangzijian, Damen, CMG, COSCOs NACKS.²⁰⁶⁶ With regard to the large FSRUs segment, Imabari, KHI and MHI are the ones mentioned the most amongst those which are not active yet, followed by Mitsui, JMU, STX.²⁰⁶⁷ (As explained in more detail in this Section, none of these shipbuilders can be considered as a likely, timely and sufficient entrant in the LLNGC market).

²⁰⁶⁰ Minutes of the call with [...] dated 22 July 2020, paragraph 6. [DOC ID: 4032]

²⁰⁶¹ [...]. See minutes of the conference call with [...] dated 21 February 2020, paragraphs 13. [DOC ID: 2530]

²⁰⁶² Minutes of the conference call with [...] dated 5 June 2019, paragraph 19. [DOC ID: 2876]

²⁰⁶³ Minutes of the conference call with [...] dated 3 July 2019, paragraph 26. [DOC ID: 300]

²⁰⁶⁴ Minutes of the conference call with [...] dated 28 June 2019, paragraph 31. [DOC ID: 190]

²⁰⁶⁵ Minutes of the conference call with [...] dated 2 July 2019, paragraph 22. [DOC ID: 1328]

²⁰⁶⁶ Replies to question 66 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁰⁶⁷ Replies to question 100 of Questionnaire Q8 to Customers. [DOC ID: 3241]

- (1132) Fourth, a majority of customers that expressed an opinion indicated that they are not aware of any future entry in the market for conventional LLNGCs.²⁰⁶⁸ Those few which replied otherwise mentioned Yangzijiang’s Yangzi-Mitsui, SHI-Zvezda and Chinese shipbuilders in generic terms.²⁰⁶⁹ Nearly all of those that expressed an opinion indicated that they are not aware of any future entry in the large FSRUs segment.²⁰⁷⁰ More specifically, when asked whether, based on their market intelligence, any of those or other shipbuilders is planning an entry in the market for conventional LLNGCs in the next few years, SHI-Zvezda is the one mentioned the most, followed by COSCO’s DACKS , Yangzijiang , COSCO’s NACKS and Yangzijiang’s Yangzi-Mitsui and STX, Hanjin, CIMC, CMG, Keppel and Sembcorp.²⁰⁷¹ With regard to the large FSRUs segment, COSCO’s NACKS and DACKS, MHI and KHI are mentioned only once, whilst Keppel and Sembcorp are mentioned with respect to converted large FSRUs but not for new-builds.²⁰⁷² (As explained in more detail in this Section, none of these shipbuilders can be considered as a likely, timely and sufficient entrant in the LLNGC market).
- (1133) Fifth, the above considerations are complemented by the shipbuilders’ reply to the market investigation. Although two shipbuilders ([...]) that have built or are in the process of building small conventional LNGCs would consider themselves as, at least in theory, capable of building conventional LLNGCs,²⁰⁷³ none of those active in small LNGCs that replied indicated concrete plans to enter the conventional LLNGCs market in the next five years.²⁰⁷⁴ For example, one shipbuilder active in small conventional LNGCs only stated that it “[...] is not aware of any new entrants and does not intend to enter the market for large LNG carriers [...]”.²⁰⁷⁵ Another shipbuilder that has just received its first order in small conventional LNGCs stated that [...] “[...] has currently no immediate plans to enter such markets in the next few years.[...]”.²⁰⁷⁶ Shipbuilders that expressed an opinion mentioned the following players (excluding HHI, DSME and SHI) as capable of building conventional LLNGCs: Yangzijian, CSSC (Hudong), Imabari, JMU, KHI and MHI. None was mentioned for large FSRUs.²⁰⁷⁷ With respect to large FSRUs, three shipbuilders that have never built FSRUs consider that they may be capable of doing so, however the market investigation has not revealed any concrete plans in this direction.²⁰⁷⁸
- (1134) Moreover, some shipbuilders indicate that although LNGCs could be more profitable than other vessel types,²⁰⁷⁹ a majority of shipbuilders that expressed a meaningful opinion stated that higher margins does not in practice automatically convert into market entry. Only a [...] shipbuilder gave as an example its past entry in the LLNGCs market “[...] we shifted to LNG carrier field in order to pursue profitability. But it took time to be successful in a new field”.²⁰⁸⁰ A majority of

2068 Replies to question 64.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]
2069 Replies to question 64.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]
2070 Replies to question 98.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]
2071 Replies to question 65.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]
2072 Replies to question 99.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]
2073 Replies to question 47.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
2074 Replies to questions 47.1 and 56 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
2075 Minutes of the conference call with [...] dated 21 February 2020, paragraph 8. [DOC ID: 2614]
2076 Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 6. [DOC ID: 2780]
2077 Replies to questions 23 and 24 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
2078 Replies to questions 47.2 and 66 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
2079 Replies to questions 49 of Questionnaire Q10 to Competitors. [DOC ID: 3243]
2080 Replies to questions 50 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

shipbuilders that expressed an opinion indicate that they are not aware or they do not expect any new entrant in the market for LLNGCs in the next five years.²⁰⁸¹

(1135) It follows that, contrary to what is argued by the Notifying Party,²⁰⁸² the Commission did not only take into account of [...] view to conclude that, more generally, a timely and sufficient entry or expansion is not likely and, more specifically, that none of the below-listed shipbuilder's or shipyards' entry or expansion would be timely, likely and sufficient. As explained above and below, the Commission considered the outcome of the market investigation as a whole as well as historical Clarksons data.

i) Daehan

(1136) The Commission considers that Daehan cannot be considered as a likely, timely and sufficient entrant as it has never built an LNGC²⁰⁸³ [...].²⁰⁸⁴

ii) Hanjin Heavy Industries & Construction ("HHIC")

(1137) The Commission considers that Hanjin cannot be considered as a likely, timely and sufficient entrant for the following reasons.

(1138) [...].²⁰⁸⁵ [...].

(1139) Second, based on the information available, HHIC exited the market due to financial difficulties. As explained in **Section 8.3.8.3 (A) b)**, 10 years or even less of inactivity for a shipbuilder can be sufficient to discourage a customer from ordering LLNGC from it as know how may have been lost.

(1140) [...].²⁰⁸⁶ [...].²⁰⁸⁷

(1141) Fourth, the Commission notes that the fact that HHIC's timely and sufficient entry in the LLNGC market is not likely (due to also its lack of intention to do so) is also confirmed by recent press articles. In one article, for example, it is stated that "*[s]ix years after being forced to leave the commercial newbuilding business due to financial troubles, [HHIC] announced it has won its first commercial shipbuilding contract since 2015. [...] The new order is for four 5,500 TEU containerships that are being built for an unnamed European shipping company. [...] [HHIC] said its strategy will be to focus on mid-sized vessels both in the containership segment as well as small and mid-sized LNG and LPG carriers, petrochemical carriers, and Aframax crude oil tankers. [...]*".²⁰⁸⁸

iii) STX (now re-named K-Shipbuilding)

(1142) The Commission considers that STX cannot be considered as a likely, timely and sufficient entrant for the following reasons.

²⁰⁸¹ Replies to questions 80 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²⁰⁸² Response to the First Letter of Facts, paragraphs 204-205.

²⁰⁸³ The Notifying Party's reply to question 13 of RFI 67, Annex Q13. See also the Notifying Party's reply to questions 16 and 17 of RFI 67, Annex Q16 and Q17.

²⁰⁸⁴ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²⁰⁸⁵ The Notifying Party's reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party's reply to question 16 of RFI 67, Annex Q16.

²⁰⁸⁶ [...] reply to question 1 and Annex 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²⁰⁸⁷ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²⁰⁸⁸ South Korea's Hanjin Shipyard Wins First Commercial Order in Six Years, Maritime Executive dated 5 October 2021. [DOC ID: 5817].

- (1143) [...] ²⁰⁸⁹, [...]. As recently confirmed by public sources: “[...] *STX Offshore & Shipbuilding has been struggling with management due to the continued downturn in the shipbuilding industry since the 2008 global financial crisis. After being delisted in 2014, the company got under legal management in 2016. Difficult times continued as the company had to sell assets and reduce manpower in the process of restructuring led by creditors.* [...]” ²⁰⁹⁰ [...], ²⁰⁹¹ [...]. ²⁰⁹² ²⁰⁹³
- (1144) [...]. ²⁰⁹⁴ In view of various recent press accounts, ²⁰⁹⁵ the Commission questions whether STX’s financial position has been sufficiently improved to enable it to re-enter the LLNGC market.
- (1145) Third, the Commission considers that STX is not capable of (re-)entering the LLNGC market in a timely and sufficient manner. Indeed, as explained in **Section 8.3.8.3 (A) b)**, 10 years or even fewer years of inactivity for a shipbuilder can be enough to discourage customers from ordering LLNGC from the shipbuilder in question due to loss of know-how and track record. In that respect, [...]. ²⁰⁹⁶
- (1146) [...]. ²⁰⁹⁷ [...]. ²⁰⁹⁸ [...]. ²⁰⁹⁹ [...]. ²¹⁰⁰ [...]. ²¹⁰¹
- (1147) In spite of the above elements, the Notifying Party ²¹⁰² submits that the Commission’s market investigation would show that, given STX’s past track record ([...]) and its alleged current focus on small LNGCs (which, as explained in **Section 7.2**) are different from LLNGCs), STX would still be recognised as a credible player by the market. In support of its argument, the Notifying Party refers to question 15 of Q3 to customers, ²¹⁰³ in which [...] customers ([...]) would have allegedly declared that “*STX is still recognised by customers*”. However, the Commission notes that neither the question nor the answers were on whether STX is still recognised as a credible player but on the strengths and weaknesses of each shipbuilder. As a consequence, it emerges a different scenario from the one depicted by the Notifying Party. Indeed, of these [...] customers that provided a comment on STX, [...] stated that STX’s strength is “*some experience*”, while STX’s weaknesses is financial, [...] (which has never ordered from STX) provided a positive comment but also mentioned that STX’s weakness is that STX has not been financially stable in the past five to six

²⁰⁸⁹ [...].

²⁰⁹⁰ “Gyeongnam-do and five other institutions cooperate to normalize STX Offshore & Shipbuilding”, Shipping Gazette of 9 March 2021 (Original article in Korean, translated into English by the European Commission)”. [DOC ID: 4949-4950]

²⁰⁹¹ [...] reply to Commission RFI 2 to [...] dated 8 February 2021, paragraph 21. [DOC ID: 4276]

²⁰⁹² Minutes of the call with [...] dated 11 March 2021, paragraph 7.

²⁰⁹³ [...].

²⁰⁹⁴ [...] reply to question 2 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²⁰⁹⁵ See for example “Gyeongnam-do and five other institutions cooperate to normalize STX Offshore & Shipbuilding”, Shipping Gazette of 9 March 2021 (Original article in Korean, translated into English by the European Commission)”. [DOC ID: 4949-4950].

²⁰⁹⁶ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107] [...] reply to Commission RFI to [...] dated 8 February 2021, paragraph 21. [DOC ID: 4276]

²⁰⁹⁷ The Notifying Party’s submission “ [...] update” dated 13 January 2021 and its non-confidential summary dated 18 January 2021.

²⁰⁹⁸ [...] reply to Commission RFI 2 to [...] dated 8 February 2021, paragraph 10. [DOC ID: 4276]

²⁰⁹⁹ [...] reply to Commission RFI 2 to [...] dated 8 February 2021, paragraph 12. [DOC ID: 4276]

²¹⁰⁰ [...] reply to Commission RFI 2 to [...] dated 8 February 2021, paragraphs 12, 21. [DOC ID: 4276].

²¹⁰¹ Investor briefing document dated 3 November 2020, page 3, provided as non-confidential Annex 7 to the non-confidential First Report of the Independent Advisor dated 15 December 2020.

²¹⁰² [...].

²¹⁰³ Replies to question 15 of Questionnaire Q3 to Customers. [DOC ID: 3236]

years. [...] gave a mixed opinion as if, on the one hand, it mentioned “good quality” as a strength, it also mentioned “*limited experience*” as a weakness; [...] mentioned “*slots availability*” as a strength, but “*LNG expertise*” as a weakness. The Commission therefore considers that, of these [...] customers, [...] comment can be considered fully positive.

- (1148) Fourth, the Commission considers that STX has no intention to (re-)enter the LLNGC market. [...].²¹⁰⁴ [...].²¹⁰⁵ [...].²¹⁰⁶ [...].²¹⁰⁷ [...].²¹⁰⁸ [...].²¹⁰⁹ [...].²¹¹⁰ [...].
- (1149) Fifth, the Commission considers that even if STX were capable and had the intention to (re-)enter the LLNGC market (quod non), it would not be able to compete autonomously and effectively with HHIH, DSME and SHI post-Transaction. [...].²¹¹¹ [...].²¹¹²
- (1150) Sixth, the Commission considers that, even if STX were able to compete autonomously and effectively to defeat a post-Transaction price increase (quod non), STX would lack the ability and incentive to do so. First, in terms of ability, as explained in **Section 8.3.7**, STX’s theoretical LLNGC annual capacity is very limited, [...]. The Commission considers that [...].²¹¹³ Likewise, the Commission notes that, with respect to the [...].²¹¹⁴ This is even more relevant if large FSRUs or Arc7 LLNGCs are taken into account (as explained in **Section 8.3.4.2**, these LLNGC types take longer to build). More specifically on the fact that Arc7 LLNGCs are longer to build and that this may have an impact in terms of project risk identification for even an experienced and leading shipbuilder as [...] where it is reported that an Arc7 LLNGC spends an average of [...] months at the quay and that, in case there is a need to shorten the construction period due to lack of construction time at the quay of even [...] months, then a critical management path strategy needs to be triggered.²¹¹⁵ [...].²¹¹⁶ [...].²¹¹⁷ [...].²¹¹⁸ [...].²¹¹⁹
- (1151) [Parties’ business secrets],²¹²⁰ ²¹²¹ ²¹²² ²¹²³ ²¹²⁴

²¹⁰⁴ [...].

²¹⁰⁵ [...].

²¹⁰⁶ [Parties’ business secrets].

²¹⁰⁷ [Parties’ business secrets].

²¹⁰⁸ [Parties’ business secrets].

²¹⁰⁹ [...] reply to Commission RFI to [...] dated 8 February 2021, paragraph 12. [DOC ID: 4276]

²¹¹⁰ Response to the First Letter of Facts, paragraph 207.

²¹¹¹ [...] reply to Commission RFI to [...] dated 8 February 2021, paragraph 20. [DOC ID: 4276]

²¹¹² [...] reply to Commission RFI to [...] dated 8 February 2021, paragraph 22. [DOC ID: 4276]

²¹¹³ The Notifying Party’s submission “Considerations related to STX capacity to produce LLNGCs and STX size” dated 11 December 2020, paragraph 15.

²¹¹⁴ [...].

²¹¹⁵ The Notifying Party’s reply to question 7 of RFI 45, Annex Q7.2.82.

²¹¹⁶ The Notifying Party’s submission “Considerations related to STX capacity to produce LLNGCs and STX size” dated 11 December 2020, paragraph 15.

²¹¹⁷ Response to the First Letter of Facts, paragraph 207.

²¹¹⁸ [Parties’ business secrets].

²¹¹⁹ Minutes of the conference call with [...] dated 17 February 2020, paragraphs 8-9. [DOC ID: 2958]

²¹²⁰ Response to the First Letter of Facts, paragraph 207.

²¹²¹ [Parties’ business secrets].

²¹²² Response to the First Letter of Facts, paragraph 207.

²¹²³ [Parties’ business secrets].

²¹²⁴ Response to the First Letter of Facts, paragraph 207.

iv) *Sungdong*

(1152) The Commission considers that Sungdong cannot be considered as a likely, timely and sufficient entrant. [...] ²¹²⁵ [...]. ²¹²⁶

v) *CMG (AVIC), CMG (CMHI) and CMG as a whole*

(1153) The Commission considers that neither CMG (AVIC) nor CMG (CMHI) nor CMG as a whole can be considered as a likely, timely and sufficient entrant(s). [...] ²¹²⁷ [...] ²¹²⁸ [...], ²¹²⁹ [...]. ²¹³⁰

(1154) [...], ²¹³¹ [...] ²¹³² [...].

vi) *CSIC as a whole and CSIC (Dalian)*

(1155) The Commission considers that CSIC cannot be considered as a likely, timely and sufficient entrant for the following reasons.

(1156) First, [...] ([...] received only one order for one small LNGC in [...]) ²¹³³ explained that, given that the Koreans are very strong, entering “[...] is very difficult and requires heavy investments. LNG carriers are very complex and building them requires very skilled and experienced work force that is trained specifically to build them, as building LNG requires working with special materials and equipment and since their design and technology is very different from all other vessels.” ²¹³⁴

(1157) [...]. ²¹³⁵

(1158) Third, the Notifying Party argues that in [...] Tianjin Marine and CSIC (Dalian) signed a letter of intent to build [...] LLNGCs. The Notifying Party also argues that CSIC (Dalian) received a further order for [...] LLNGCs from [...] and [...] in [...]. ²¹³⁶ The Notifying Party submitted press reports speculating that the orders were later cancelled and shifted to CSSC (Hudong) following pressure from the Chinese government due to potentially higher costs in LLNGC production at CSIC (Dalian). According to the Notifying Party, this would demonstrate that CSIC could enter the market in a timely and sufficient manner. The Commission considers to the contrary that the sequence of events points to a clear failure to deliver from CSIC (Dalian).

(1159) In the Response to the First Letter of Facts, ²¹³⁷ the Notifying Party argued that CSIC (Dalian), now part of CSSC group (“CSSC (Dalian)”), would be about to enter the LLNGC market as it would already quote LLNGC prices to brokers. At the beginning of July 2021, the Commission asked [...] whether CSSC (Dalian) was

²¹²⁵ The Notifying Party’s reply to question 13 of RFI 67, Annex Q13. See also the Notifying Party’s reply to questions 16 and 17 of RFI 67, Annex Q16 and Q17.

²¹²⁶ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹²⁷ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹²⁸ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107] The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²¹²⁹ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²¹³⁰ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹³¹ Response to the SO, paragraph 140.

²¹³² See, for example, Clarksons database provided in response to RFI 67.

²¹³³ The Notifying Party’s reply to question 1 of RFI 34, Annex Q1. The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²¹³⁴ Minutes of the conference call with [...] dated 3 July 2019, paragraph 12. [DOC ID: 2889]

²¹³⁵ Minutes of the conference call with [...] dated 21 February 2020, paragraphs 13. [DOC ID: 2530]

²¹³⁶ Response to the SO, Table 5.

²¹³⁷ The Notifying Party’s Response to the First Letter of Facts, paragraphs 101, 116, 211.

offering LLNGC price quotes to brokers. [...] stated that “[i]t is not uncommon for shipyards that are not capable and will not be capable in the foreseeable next five years to build a certain vessel type to provide informal price quotes for business exploration purposes only to intermediary agents. When this happens, such quotes do not entail any commitments or valid sales contract either”.²¹³⁸ On 21 December 2021, the Notifying Party submitted additional observations, in which it argued that Dalian has now entered the LLNGC market as, according to a press article, China Merchants Shipping, a Chinese customer, and CSSC (Dalian), would have signed a letter of intent for cooperation in the construction of [...] LLNGC. More specifically, the Notifying Party argued the following: (i) the press article would show that CSSC (Dalian) along with CSSC’s other yards is a likely potential entrant in the LLNGC market; (ii) the press article would cast doubt on the reliability of [...] feedback; (iii) the press article would illustrate that intra-group technology transfers do happen and are effective; (iv) the press article would also show that the collaboration between China Merchants Shipping and CSSC (Dalian) is aimed at building energy-saving and low-carbon LLNGCs; another press article would also show that CSSC (Dalian) and CSSC as a whole have conducted much R&D in respect of LNG ship technology and that this would have been allegedly acknowledged by classification societies and GTT. In response to the Notifying Party’s observations, the Commission notes that these observations were submitted at a very late stage in the procedure and that, in any event, they would not change the Commission’s assessment in this decision, in particular of **Section 8.3.3**, **Section 8.3.2**, **Section 8.3.4.2**, **Section 8.3.7** and **Section 8.3.8** for the following reasons: (i) [...]; (ii) neither CSSC (Dalian) nor any of the other CSSC’s yards besides CSSC (Hudong) has delivered any LLNGC so far, let alone four to five LLNGCs; (iii) as explained in **Section 8.3.8**, intra-group know-how transfer is not impossible but it entails many challenges and is likely to take a significant amount of time; (iv) even assuming that CSSC (Dalian)’s or any of the other CSSC’s yards besides CSSC (Hudong) entry were likely (quod non), the Commission notes, as explained in **Section 8.3.8**, that entry or expansion should not only be likely, but also timely and sufficient; (v) even assuming that CSSC (Dalian)’s or any of the other CSSC’s yards besides CSSC (Hudong) entry were likely, timely and sufficient (quod non), the Commission notes that, for the reasons explained in **Section 8.3.4.2** and in this section, customers are likely to be domestic; (vi) even assuming that those [...] LLNGCs (orders) were to be added up to CSSC’s LLNGC capacity as estimated in **Section 8.3.4.2** and **Section 8.3.7** (quod non), there would be no material impact on the Commission’s assessment in **Section 8.3.4.2** and **Section 8.3.7**, for the reasons explained in those sections; (vii) the alleged fact that CSSC (Dalian) and CSSC as a whole would have conducted much R&D in respect of LNG ship technology, would not change the Commission’s assessment in **Section 8.3.2**, **Section 8.3.3** and **Section 8.3.4.2** for the reasons explained in these sections.

vii) CSSC

vii.a) CSSC (Jiangnan) and CSSC (SWS) for LLNGCs

(1160) In an email to the Commission dated 7 January 2021,²¹³⁹ the Notifying Party, basing itself on public sources, submits that CSSC’s capacity expansion plans would show that “[...] CSSC already is and will be in the future exerting a meaningful competitive constraint on the Combined Entity post-Transaction”. According to the Notifying Party, this would “confirm [that] CSSC (Hudong)’s relocation project will

²¹³⁸ [...] reply to question 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

²¹³⁹ The Notifying Party’s email to the case team “CSSC Capacity Expansion Plans” dated 7 January 2021.

inevitably positively impact CSSC's capability, capacity and overall competitiveness to build LLNGCs, further confirming CSSC's role as a viable fourth alternative in the LLNGC market next to the Parties and SHI (and other competitors) at the latest by 2023".²¹⁴⁰ As explained above, CSSC (SCS) is part of CSSC (Hudong) so already included in the Commission's assessment of CSSC (Hudong) capability and capacity.²¹⁴¹ In this email, the Notifying Party essentially submitted that (i) CSSC's Jiangnan Shipyard ("CSSC (Jiangnan)") and (ii) CSSC's Shanghai Waigaoqiao Dockyard ("CSSC (SWS)") are likely to enter the LLNGC market in a timely and sufficient manner. The Commission disagrees for the following reasons.

- (1161) First, as explained in **Section 8.3.4.2 (B) b)**, CSSC (Hudong) is the only Chinese shipbuilder capable of building LLNGCs. As explained by [...], CSSC does not have any capacity expansion plans in any other yard besides CSSC (Hudong).²¹⁴² Contrary to what is argued by the Notifying Party,²¹⁴³ [...] confirmed that this fact is still valid and will still be valid until 2026 at the very least.²¹⁴⁴ On 10 January 2022, the Notifying Party submitted additional observations in which it argued that, according to press articles, CSSC (Hudong) would have already won orders for [...] LLNGCs in 2022 ([...] from [...] and [...] from a Chinese customer) and that China would have surpassed South Korea as the No. 1 shipbuilder in 2021. Moreover, the Notifying Party argued that such press articles would show that CSSC would be on par with the Parties and with SHI in terms of LLNGC capabilities and that, as CSSC would have won these orders by offering a discount, this would further demonstrate CSSC's price competitiveness. In response to the Notifying Party's observations, the Commission notes that these observations were submitted at a very late stage in the procedure and that, in any event, they would not change the Commission's assessment in this decision, in particular of **Section 8.3.4.2** and **Section 8.3.7**. Indeed, even if these [...] LLNGCs (orders, not deliveries) were confirmed, there would be no material impact on the Commission's assessment in **Section 8.3.4.2** and **Section 8.3.7**, for the reasons explained in those sections.
- (1162) Second, with respect to CSSC (Jiangnan), the Commission notes that [...] ²¹⁴⁵ [...] ²¹⁴⁶ [...] ²¹⁴⁷ [...] ²¹⁴⁸
- (1163) In the Response to the First Letter of Facts,²¹⁴⁹ the Notifying Party argued that CSSC (Jiangnan) would be about to enter the LLNGC market as it would already quote LLNGC prices to brokers. At the beginning of July 2021, the Commission asked [...] whether CSSC (Jiangnan) including its subsidiaries was offering LLNGC price quotes to brokers. [...] stated that "*[i]t is not uncommon for shipyards that are not capable and will not be capable in the foreseeable next five years to build a certain vessel type to provide informal price quotes for business exploration purposes only*

²¹⁴⁰ The Notifying Party's email to the case team "CSSC Capacity Expansion Plans" dated 7 January 2021.
²¹⁴¹ [...] reply to follow-up question to question 2 of Commission RFI 1 to [...] of 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]
²¹⁴² [...] reply to questions 2-3 to Commission RFI 1 to [...] dated 2 June 2020 and its follow-up questions dated 3 June 2020. [DOC ID: 3330]. See also [...] reply to question 1(d) of the Commission RFI 2 to [...] dated 25 August 2020. [DOC ID: 4053]
²¹⁴³ See, inter alia, Response to the First Letter of Facts, paragraph 101.
²¹⁴⁴ [...] reply to questions 1(a), 1(b) and 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]
²¹⁴⁵ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]
²¹⁴⁶ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]
²¹⁴⁷ Minutes of the conference call with [...] dated 21 February 2020, paragraphs 13. [DOC ID: 2530]
²¹⁴⁸ The Notifying Party's reply to question 16 of RFI 67, Annex Q16. See also the Notifying Party's reply to question 39 of RFI 67, Annex Q38.
²¹⁴⁹ Response to the First Letter of Facts, paragraphs 101, 116, 211.

to intermediary agents. When this happens, such quotes do not entail any commitments or valid sales contract either”.²¹⁵⁰

(1164) Third, with respect to CSSC (SWS), the Commission notes that [...].²¹⁵¹ The Commission further notes that CSSC SWS has not even built any small LNGCs yet.²¹⁵² Although in the Response to the First Letter of Facts, the Notifying Party did not explicitly argue that CSSC (SWS) is offering LLNGC price quotes to brokers,²¹⁵³ the Commission probed [...] on this. [...] stated that “[i]t is not uncommon for shipyards that are not capable and will not be capable in the foreseeable next five years to build a certain vessel type to provide informal price quotes for business exploration purposes only to intermediary agents. When this happens, such quotes do not entail any commitments or valid sales contract either”.²¹⁵⁴

(1165) Fourth, as explained in **Section 8.3.8**, intra-group know-how transfer is not impossible but entails many challenges and is likely to take a significant amount of time.

vii.b) CSSC (Hudong) for large FSRUs

(1166) The Commission considers that CSSC (Hudong) cannot be considered as a timely and sufficient entrant in large FSRUs for the following reasons, let alone exerting a sufficient competitive constraint on the Parties in large FSRUs.

(1167) [...]. For this reason, the Commission acknowledged that there has been only one potential new entrant in large FSRUs, that is CSSC (Hudong).

(1168) Second, as explained in **Section 8.3.4.2 (B) d)**, a customer stated that CSSC (Hudong) was taking approximately [...] year longer than the Korean shipbuilders to build a large FSRU.

(1169) Third, as explained in **Section 8.3.4.2 (B) d)**, [...],²¹⁵⁵ [...].²¹⁵⁶ [...].²¹⁵⁷

(1170) As a result, the Commission considers that CSSC (Hudong) has not demonstrated yet its ability to produce large FSRUs on a regular basis and within reasonable delivery times.

viii) COSCO’s NACKS and DACKS

(1171) The Commission considers that neither COSCO’s NACKS nor COSCO’s DACKS can be considered as likely, timely and sufficient entrants for the following reasons.

(1172) First, COSCO’s NACKS and DACKS are two joint ventures that COSCO set up with KHI. The Commission understands that KHI set up these joint ventures in order to build its LLNGCs in COSCO’s yards in China whilst still using and dependent on KHI’s know-how and building the LNG cargo tank in Japan. This is also confirmed by [...] observations on the SO.²¹⁵⁸ However, the Commission notes that KHI has never built conventional [...] LLNGCs. A customer explained that “[...] [t]his happened five years ago but so far there are no results. [We] follow closely to see if

²¹⁵⁰ [...] reply to question 1(c) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

²¹⁵¹ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹⁵² The Notifying Party’s reply to questions 16 and 17 of RFI 67, Annex Q16 and Annex Q17.

²¹⁵³ Response to the First Letter of Facts, paragraphs 101, 116, 211.

²¹⁵⁴ [...] reply to question 1(c) of Commission RFI 4 to [...] of 7 July 2021. DOC ID: 5653.

²¹⁵⁵ Launching a vessel means transferring a vessel to the water.

²¹⁵⁶ [...] reply to question 2 (b) of Commission RFI 4 to [...] of 7 July 2021. [DOC ID: 5653]

²¹⁵⁷ [...].

²¹⁵⁸ [...] observations on the SO, page 4. [DOC ID: 3851]

*they will succeed because of the Japanese involvement*²¹⁵⁹ The same customer explained that it “[...] does not expect a material change in the next 5-10 years. [...]”.²¹⁶⁰

(1173) [...].²¹⁶¹

(1174) [...].²¹⁶²

(1175) [...],²¹⁶³ [...] ²¹⁶⁴ [...].

ix) Mitsui

(1176) The Commission considers that Mitsui, a Japanese shipbuilder, cannot be considered as a likely, timely and sufficient entrant for the following reasons. [...].²¹⁶⁵ [...].²¹⁶⁶ [...],²¹⁶⁷ [...],²¹⁶⁸ [...].²¹⁶⁹

x) MHI

(1177) The Commission considers that MHI cannot be considered as a likely, timely and sufficient entrant for the following reasons.

(1178) First, the Commission notes that MHI, a Japanese shipbuilder using non-membrane cargo tank containment system and which [...],²¹⁷⁰ [...].²¹⁷¹ [...] explains that [...] decided to discontinue membrane LLNGC production because “[...] since around 2005 [...] membrane type LLNGC turned less competitive in the market and, as a result, [...] had focussed on [MOSS] type. [...]”²¹⁷² Consistently with this statement, the Commission notes that [...].²¹⁷³ For this reason and for the reasons outlined in **Section 8.3.4.3**, the Commission considers that MHI does not exert a meaningful competitive constraint on the Parties and this is not likely to change in the future. Indeed, when asked by the Commission whether MHI would consider to become more competitive and hence start to compete in LLNGCs if prices of Korean shipyards were to increase by around 5% or even 10%, [...] clarified that “[i]t is difficult to say the price range but the added price level of Korean players in large LNG carriers that would be sustainable for market players such as [...] to become more competitive and decide to start compete again would need to be extremely high

²¹⁵⁹ Minutes of the conference call with [...] dated 28 June 2019, paragraph 32. [DOC ID: 190]

²¹⁶⁰ Minutes of the conference call with [...] dated 28 June 2019, paragraph 34. [DOC ID: 190]

²¹⁶¹ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹⁶² [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹⁶³ Response to the SO, paragraph 140.

²¹⁶⁴ See, for example, Clarksons database provided in response to RFI 67.

²¹⁶⁵ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²¹⁶⁶ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²¹⁶⁷ Clarksons database submitted in response to RFI 67.

²¹⁶⁸ Clarksons database submitted in response to RFI 67.

²¹⁶⁹ Clarksons database submitted in response to RFI 67.

²¹⁷⁰ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²¹⁷¹ Clarksons database submitted by the Notifying Party in response to RFI 17; See also [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107] The Notifying Party’s reply to question 38 of RFI 67, Annex Q38.

²¹⁷² [...] reply to RFI 3 to [...] dated 8 May 2020. [DOC ID: 3121]

²¹⁷³ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

*because present market price are brought by fierce competition by Korean shipbuilders [...].*²¹⁷⁴

- (1179) Second, although [...] initially stated, during the pre-notification phase, that [...] still aimed at obtaining orders from non-Japanese customers and that for such international market it considered [...] as directly competing with the Parties,²¹⁷⁵ the Commission noted that MHI started talks for the sale of its Koyagi yard.²¹⁷⁶ Based on the information available, the Commission understands that MHI has decided to de facto withdraw from the LLNGC shipbuilding market and to possibly stay active in the upstream engineering services market. This was confirmed by a customer, which stated that “[...] Mitsubishi Heavy Industries has announced it will exit the market for the manufacturing of large LNG carriers.”²¹⁷⁷ This was also confirmed by [...] that stated that “[...] MHI [...] has recently announced it is withdrawing from the market for large LNG carriers.”²¹⁷⁸ On this matter, [...] explained that the Koyagi yard is “[...] [...] only facility to build large LNG carriers. [...]”²¹⁷⁹ and that, as a consequence, MHI will not build conventional (membrane or non-membrane) LLNGC by itself anymore.²¹⁸⁰ Indeed, [...] explained that “[...] [s]hould the sale process go through, although MHI may still have the relevant know-how, [...] will not build large LNG carriers [...] at Koyagi plant”²¹⁸¹ and that “[...] there is currently no shipbuilding collaboration on the plate”.²¹⁸² [Parties’ internal document]^{2183 2184}
- (1180) Third, the Commission notes that MHI has never received any orders for large FSRUs.²¹⁸⁵
- xi) Imabari*
- (1181) The Commission considers that Imabari cannot be considered as a likely, timely and sufficient entrant for the following reasons.
- (1182) [...],²¹⁸⁶ [...].²¹⁸⁷
- (1183) Second, although it is the only Japanese shipbuilder with some experience in [...] LLNGC, it received its last orders in [...].²¹⁸⁸
- (1184) [...].

²¹⁷⁴ [...] reply to question 3 of Commission RFI 2 to [...] dated 23 April 2020. [DOC ID: 2943]

²¹⁷⁵ Minutes of the call with [...] dated 26 July 2019, paragraph 6. [DOC ID: 296]

²¹⁷⁶ MHI’s public statement “MHI Begins Talks with Oshima Shipbuilding regarding Utilisation Plan for Koyagi Plant at Nagasaki Shipyard & Machinery Works”. [DOC ID: 2171]

²¹⁷⁷ Minutes of the conference call with [...] dated 26 February 2020, paragraph 11. [DOC ID: 2900]

²¹⁷⁸ Minutes of the conference call with [...] dated 21 February 2020, paragraphs 12. [DOC ID: 2530]

²¹⁷⁹ [...] reply to question 2 of Commission RFI 2 to [...] dated 23 April 2020. [DOC ID: 2943]

²¹⁸⁰ [...] reply to questions 3 and 4 of Commission RFI 1 to [...] dated 6 March 2020 [DOC ID: 2847].
[...]reply to questions 1 and 2 of Commission RFI 2 to [...] dated 23 April 2020. [DOC ID: 2943]

²¹⁸¹ [...] reply to question 2(a) of Commission RFI2 to [...] dated 23 April 2020. [DOC ID: 2943]

²¹⁸² [...] reply to question 2(b) of Commission RFI2 to [...] dated 23 April 2020. [DOC ID: 2943]

²¹⁸³ The Notifying Party’s internal documents responsive to RFI 3, “Status of Shipbuilding Industries of Major Countries” dated 27 August 2019, page 5, EU_HHI_0000235-T. [DOC ID: 1506]

²¹⁸⁴ DSME’s internal documents responsive to RFI 31, “Tokyo Branch Weekly Report – Major Information Update”, slide 4, 2019, Tokyo Branch_W36_2019_DSME-00001246. [DOC ID: 3064-39]

²¹⁸⁵ The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²¹⁸⁶ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹⁸⁷ The Notifying Party’s reply to question 1 of RFI 35, Annex Q1 (followup) as an updated version of the Notifying Party’s reply to question 7 of RFI 19, Annex Q7. The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²¹⁸⁸ The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

- (1185) [...].
- (1186) Fifth, Imabari has never received any orders for large FSRUs.²¹⁸⁹
- xii) *Wison*
- (1187) The Commission considers that Wison cannot be considered as a likely, timely and sufficient entrant in the LLNGC market. Indeed, though [...].²¹⁹⁰ [...].²¹⁹¹ [...] ²¹⁹² [...].²¹⁹³ [...].²¹⁹⁴
- (1188) In its response to RFI 65, the Notifying Party submits that the Parties would “[...] continue to experience competitive constraint from potential market entry [...] [as] Clarksons data reports that [...] has recently won an order for an FSRU [...] of 170,000 cu.m. which uses GTT’s membrane [...]”.²¹⁹⁵ The Commission considers that this cannot be considered as a large FSRU (and therefore as an LLNGC) as defined in **Section 7.2** for the following reasons. First, the press article mentioned by the Notifying Party²¹⁹⁶ refers to a “floating storage regasification and power generation barge” whose acronym is “FSRP” and refers to it as a “facility”. Second, this is close to the offshore facilities described as an LNG floating production storage and offloading (“FLNG or LNG-FPSO”) or as a floating storage and offloading/floating storage units (“LNG FSO/FSU”) by the Notifying Party in its reply to question 5 of the Commission’s RFI 29. Third, as acknowledged by the Notifying Party at paragraph 187 of the Form CO, FPSO are classified as offshore facilities. Fourth, Clarksons classifies these as FPSO²¹⁹⁷ and consistently excludes them from the LNGCs forecast.²¹⁹⁸
- (1189) In any event, even if such facility were to be classified as a large FSRU within the meaning of **Section 7.2**(quod non), Wison could not be considered as a potential new entrant in large FSRUs (and therefore in LLNGCs). Indeed, the Commission considers that, for the reasons outlined above **Section 8.3.8.3 (A) b)** this would not change its assessment. Moreover, the Commission notes the following facts. First, it is unclear whether Wison’s order would be equipped with a membrane cargo tank containment system.²¹⁹⁹ Second, Wison’s order is [...].²²⁰⁰ Third, there is no evidence that Wison will deliver its first large FSRU (let alone at least two large FSRUs), that it will start producing large FSRUs on a regular basis and that it will do so within reasonable delivery times (see **Section 8.3.8.3 (C) vii.b)**). There is also no evidence that international customers will start ordering from Wison. Therefore, Wison cannot be considered as a likely, timely and sufficient entrant in the LLNGC

²¹⁸⁹ The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²¹⁹⁰ Minutes of the conference call with [...] dated 21 February 2020, paragraphs 13. [DOC ID: 2530] The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²¹⁹¹ Annex Q38 to the Notifying Party’s reply to RFI 67.

²¹⁹² [...] reply to question 1 and Annex 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²¹⁹³ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²¹⁹⁴ Minutes of the conference call with [...] dated 21 February 2020, paragraphs 13. [DOC ID: 2530]

²¹⁹⁵ The Notifying Party’s reply to question 3 of the Commission’s RFI 65.

²¹⁹⁶ The Notifying Party’s reply to question 3 of the Commission’s RFI 65. See “Wison says building China’s first floating LNG power project” dated 4 February 2021. [DOC ID: 5827]

²¹⁹⁷ Clarksons database provided by the Notifying Party in reply to question 38 of RFI 67, Annex Q38.

²¹⁹⁸ [...] reply to question 1(a) of the Commission’s RFI of 17 March 2021. [DOC ID: 5222]

²¹⁹⁹ The Notifying Party’s email to the case team of 27 October 2021 containing clarifications on question 32 of RFI 67, where the Notifying Party, in reply to question 2 of such clarification request, states that “the LNG tank type [...] is not specified in Clarksons (i.e. it is currently unknown)”.

²²⁰⁰ The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

market or in the large FSRU segment and start exerting a sufficient competitive constraint on the Parties.

xiii) SHI-Zvezda

(1190) Contrary to what is argued by the Notifying Party²²⁰¹ and for the reasons outlined in **Section 8.3.8** and in **Section 8.3.6**, the Commission considers that SHI-Zvezda can neither be considered as a likely, timely and sufficient entrant nor a potential entrant in the LLNGC market.

xiv) JMU

(1191) The Commission considers that JMU [...] cannot be considered as a likely, timely and sufficient entrant for the reasons outlined in **Section 8.3.4.3** and in this Section and for the following additional reasons.

(1192) [...],²²⁰² [...].²²⁰³

(1193) [...]²²⁰⁴ [...].²²⁰⁵

(1194) Third, JMU has never received any orders for large FSRUs.²²⁰⁶

xv) KHI

(1195) The Commission considers that KHI (which despite being already active in conventional LLNGCs due to the use of [...] technology does not exert a competitive constraint) cannot be considered as a likely, timely and sufficient entrant for the reasons outlined in **Section 8.3.4.3** and in this Section and for the following additional reasons.

(1196) [...],²²⁰⁷ [...].²²⁰⁸

(1197) [...]²²⁰⁹ [...].²²¹⁰ [...].²²¹¹

(1198) Third, KHI has never received any orders for large FSRUs.²²¹²

(1199) [...],²²¹³ [...]²²¹⁴ [...].

xvi) Keppel

(1200) The Commission considers that Keppel cannot be considered as a likely, timely and sufficient entrant for the following reasons. [...].²²¹⁵ [...].²²¹⁶ [...].²²¹⁷

(1201) [...],²²¹⁸ [...]²²¹⁹ [...].

²²⁰¹ Response to the First Letter of Facts, paragraphs 208-210.

²²⁰² The Notifying Party's reply to question 38 of RFI 67, Annex Q38.

²²⁰³ The Notifying Party's reply to question 16 of RFI 67, Annex Q16.

²²⁰⁴ [...] reply to question 1 and Annex 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²²⁰⁵ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²²⁰⁶ The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

²²⁰⁷ The Notifying Party's reply to question 38 of RFI 67, Annex Q38.

²²⁰⁸ The Notifying Party's reply to question 16 of RFI 67, Annex Q16.

²²⁰⁹ [...] reply to question 1 and Annex 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²²¹⁰ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²²¹¹ Replies to question 68 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²²¹² The Notifying Party's reply to question 13 of RFI 67, Annex Q13.

²²¹³ Response to the SO, paragraph 140.

²²¹⁴ See, for example, Clarksons database provided in response to RFI 67.

²²¹⁵ [...] reply to question 1 and Annex 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²²¹⁶ The Notifying Party's reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party's reply to question 16 of RFI 67, Annex Q16.

²²¹⁷ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

xvii) *Sembcorp*

(1202) The Commission considers that Sembcorp cannot be considered as a likely, timely and sufficient entrant for the following reasons. [...] ²²²⁰ [...] ²²²¹ [...] ²²²² Fourth, [...] ²²²³ stated that [...] “[...] *has currently no immediate plans to enter such markets in the next few years.*[...]” ²²²⁴

xviii) *Yangzijiang*

(1203) The Commission considers that Yangzijiang cannot be considered as a likely, timely and sufficient entrant as [...] ²²²⁵ [...] ²²²⁶

xix) *Yangzijiang’s Yangzi-Mitsui*

(1204) The Commission considers that Yangzijiang’s Yangzi-Mitsui cannot be considered as a likely, timely and sufficient entrant as it is not even a [...] ²²²⁷ [...] ²²²⁸

xx) *COSCO*

(1205) The Commission considers that COSCO cannot be considered as a likely, timely and sufficient entrant [...] ²²²⁹

xxi) *CIMC*

(1206) The Commission considers that CIMC cannot be considered as a likely, timely and sufficient entrant [...] ²²³⁰ [...] ²²³¹

xxii) *Damen*

(1207) The Commission considers that Damen cannot be considered as a likely, timely and [...] ²²³²

²²¹⁸ Response to the SO, paragraph 140.

²²¹⁹ See, for example, Clarksons database provided in response to RFI 67.

²²²⁰ [...] reply to question 1 and Annex 1 of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3107]

²²²¹ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²²²² [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²²²³ The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²²²⁴ Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 6. [DOC ID: 2780]

²²²⁵ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²²²⁶ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²²²⁷ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²²²⁸ The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²²²⁹ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²²³⁰ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²²³¹ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1. [DOC ID: 3107]

²²³² The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16. See also point 4 of the Commission’s email to the Notifying Party dated 3 December 2021 setting out a very limited sets of additional facts, on which the Notifying Party provided observations on 6 December 2021. In point 4 of its observations, the Notifying Party stated that “[t]here is no mention of Damen in Section 11.5 of the Second [Letter of Facts]. [...]”. As explained by the Commission in an email to the Notifying Party of 6 December 2021, the Commission’s preliminary conclusions on Damen included in its email to the Notifying Party of 3 December 2021 refer to paragraph 672 of the SO and were then updated and shared with the Notifying Party’s in the Commission’s email to the Notifying Party of 3 December 2021.

- xxiii) Conrad*
- (1208) The Commission considers that Conrad cannot be considered as a likely, timely and sufficient entrant [...] ²²³³ [...]. ²²³⁴
- xxiv) Cochin*
- (1209) The Commission considers that Cochin cannot be considered as a likely, timely and sufficient entrant [...] ²²³⁵ [...]. ²²³⁶
- xxv) Navantia*
- (1210) The Commission considers that Navantia cannot be considered as a likely, timely and sufficient entrant [...] ²²³⁷ [...]. ²²³⁸
- xxvi) La Naval (Construcciones Navales del Norte)*
- (1211) The Commission considers that La Naval cannot be considered as a likely, timely and sufficient entrant as it is considered [...] ²²³⁹ [...]. ²²⁴⁰
- xxvii) MILNG*
- (1212) For the reasons outlined above **Section 8.3.4.3** and **Section 8.3.8.3 (B)**, the Commission considers that MI LNG cannot be considered as a likely, timely and sufficient entrant.
- xxviii) Nihon*
- (1213) For the reasons outlined above **Section 8.3.4.3** and **Section 8.3.8.3 (B)**, the Commission considers that Nihon cannot be considered as a likely, timely and sufficient entrant.
- xxix) Further considerations*
- (1214) The above considerations are confirmed by some shipbuilders in the market investigation. For example, one [...] shipbuilder stated that for a shipbuilder with no experience in LLNGCs, it would take “[*m*]ore than 10 years, [*m*]ore than 50 million EUR” to deliver a conventional LLNGC.²²⁴¹ Another [...] shipbuilder, not active in large FSRUs, stated that, with respect to large FSRUs it would take them “[...] a lot of time and investment. However, it is difficult to explain for us to estimate the concrete figures of such time and cost”.²²⁴² Of those two shipbuilders, one stated that entering the large FSRUs conversion market would take less time and lower investment. However, another shipbuilder specified that “[*ff*]or FSRU conversion, yards need less facilities investment and workmanship preparation in cargo related

²²³³ [...] reply to Commission RFI to [...] dated 7 May 2020, Annex 1.

²²³⁴ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²²³⁵ [...] reply to question 1 of the Commission RFI to [...] dated 7 May 2020.

²²³⁶ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²²³⁷ [...] reply to question 1 of the Commission RFI to [...] dated 7 May 2020.

²²³⁸ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 13 of RFI 67, Annex Q13.

²²³⁹ [...] reply to question 1 of the Commission RFI to [...] dated 7 May 2020.

²²⁴⁰ The Notifying Party’s reply to question 5 of RFI 46, Annex Q5 (updated). The Notifying Party’s reply to question 16 of RFI 67, Annex Q16.

²²⁴¹ Replies to questions 48.1, 48.1.2, 48.1.3 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²²⁴² Replies to question 48.1.3 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

*work, but for design, engineering and project management stay same with newbuildings”.*²²⁴³

- (1215) Moreover, as explained in **Sections 8.3.4.2, 8.3.8.3 (A) and 8.3.8.3 (B)**, the Commission notes that although a shipbuilder does not necessarily need to be active outside of its domestic market to be considered as a new entrant, becoming a new entrant active in the worldwide market for LLNGCs takes significant time.
- (1216) Finally, the Commission considers, as explained in **Section 8.3.8.3 (A) and (B)**, that there are no past examples of successful know-how and technology transfer between independent shipbuilders. A shipbuilder interviewed by the Commission stated that “[...] *transferring know-how from one yard with track-record in building large LNG vessels to a yard with no track-record is very difficult [...] there is no past success case of transferring large LNG shipbuilding know-how from a yard with track-record to a yard with no track-record, both within the same country or not [...] although not theoretically impossible, is in practice very difficult and complicated and for Korean yards there are prohibitions on know-how transfers to Chinese yards. [...]*”.²²⁴⁴

8.3.8.4. Conclusion

- (1217) In light of the above, the Commission considers that the barriers to entry and expansion in the market for LLNGCs and in the large FSRUs segment are very high and may increase post-Transaction. Therefore, the Commission finds that the merged entity post-Transaction will not be constrained by the perspective of new or re-entry or expansion in the LLNGC market, thereby allowing the merged entity to act to an appreciable extent independently in the LLNGC market post-Transaction. This contributes to the finding of the creation of a dominant position by the merged entity post-Transaction.

8.3.9. *Customers do not have the ability or incentive to exert a sufficient degree of buyer power*

- (1218) In this Section, the Commission sets out its assessment of whether customers would have the ability or the incentive to exert a sufficient degree of buyer power in the LLNGC market including the large FSRUs segment. The Commission finds that customers do not have the ability or the incentive to exert a sufficient degree of buyer power in the LLNGC market including the large FSRUs segment, thereby allowing the merged entity to act to an appreciable extent independently in the LLNGC market post-Transaction. The lack of a sufficient degree of customers’ buyer power contributes to the finding of the creation of a dominant position by the merged entity post-Transaction.

8.3.9.1. The Notifying Party's views

- (1219) In the Response to the Article 6(1)(c) decision,²²⁴⁵ in the Memorandum submitted on 20 May 2020²²⁴⁶, in the submissions dated 26 May 2020,²²⁴⁷ in the Response to the

²²⁴³ Replies to question 48.1.3.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²²⁴⁴ Minutes of the conference call with [...] dated 20 February 2020, paragraph 12. [DOC ID: 2889]

²²⁴⁵ Response to the Article 6(1)(c) decision, paragraphs 89-90.

²²⁴⁶ The Notifying Party’s Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3c.

²²⁴⁷ The Notifying Party’s submission on considerations relating to the LNG market dated 26 May 2020, Sections 2(b), 2(e), 2(f), 3(a), 3(d); the Notifying Party’s submission “Competitive Market Dynamics Giving Rise to Countervailing Buyer Power” dated 26 May 2020.

SO²²⁴⁸ and in the Response to the First Letter of Facts,²²⁴⁹ and in the Response to the Second Letter of Facts ²²⁵⁰ the Notifying Party argues that the market would be characterised by strong and sophisticated customers able to pressure suppliers to obtain better conditions for a number of reasons.

- (1220) First, the negotiating position of customers would be enhanced by their access to key information such as ship pricing (obtained through other shipowners and brokers) and technical features (obtained from shipbuilders sending detailed drawings reusable elsewhere) giving them upper hand in negotiations.²²⁵¹
- (1221) In this regard, the Commission’s approach to measuring buyer power would also be inconsistent with economic bargaining theory. The Notifying Party argues that the Commission would not take into account that in negotiations the Parties’ relative bargaining power is determined by different factors, e.g. patience, risk aversion, inside options, outside options, commitment strategies and availability of information important to the bargaining outcome. More specifically, the Notifying Party claims that LLNGC customers would have a considerable bargaining power in negotiations with shipbuilders for the following reasons: (i) customers are patient, (ii) shipbuilders bear a proportionally higher risk associated with common optional vessels in tenders as they have high fixed cost that they need to cover, (iii) customers are large and sophisticated with significant amount of information and (iv) customers have outside options and can switch to rival shipbuilders.²²⁵²
- (1222) Second, buyer power would be expected to continue as excess capacity is forecast to persist.²²⁵³
- (1223) Third, demand would not be fragmented considering the number of orders, their value and frequency as competition in shipbuilding would take place in a market which has a small number of orders with high prices per unit and where the lumpy, uncertain and decreasing nature of demand, accentuated by the impact of the Covid-19 pandemic, means that only a small number of customers place orders each year and shipbuilders, which face very high fixed costs, would be forced to participate aggressively in all tenders that come to market even when they know that the price will be very low.²²⁵⁴ More specifically, the Parties’ revenue data and the increasing proportion of LNGCs in HHI’s orders²²⁵⁵ would show the significance of single customers and orders to the Parties’ success.²²⁵⁶ The Commission should (i) look at the number of orders rather than at total number of customers as well as the

²²⁴⁸ Response to the SO, paragraphs 812-916.

²²⁴⁹ Response to the First Letter of Facts, paragraphs 213-228.

²²⁵⁰ Response to the Second Letter of Facts, paragraphs 204-251.

²²⁵¹ Response to the Article 6(1)(c) decision, paragraph 91; The Notifying Party’s Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3c.

²²⁵² Response to the SO, paragraphs 820-823.

²²⁵³ Response to the Article 6(1)(c) decision, paragraph 92; The Notifying Party’s submission on considerations relating to the LNG market dated 26 May 2020, Section 3(d); the Notifying Party’s submission “Competitive Market Dynamics Giving Rise to Countervailing Buyer Power” dated 26 May 2020.

²²⁵⁴ Response to the Article 6(1)(c) decision, paragraphs 93-94; The Notifying Party’s Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3c; the Notifying Party’s submission “Competitive Market Dynamics Giving Rise to Countervailing Buyer Power” dated 26 May 2020.

²²⁵⁵ The Notifying Party’s submission on considerations relating to the LNG market dated 26 May 2020, Section 3(d).

²²⁵⁶ Response to the Article 6(1)(c) decision, paragraphs 349-354; The Notifying Party’s submission on considerations relating to the LNG market dated 26 May 2020, Section 3(d).

proportion of revenue for which the orders accounted and their frequency and (ii) look at the share of revenue from one customer in a given year to estimate customers' relative significance for a shipbuilder's business.²²⁵⁷ In addition, the Commission would have wrongly concluded that the demand side of the market is already fragmented and that it will be more fragmented post-Transaction as its analysis of the customers' orders from shipbuilders would be (i) inconsistent in the selection of vessels types and units and (ii) results would have been selectively reported and thus misrepresented customers' importance.²²⁵⁸ In Response to the Second Letter of Facts, the Notifying Party presents a buyer power analysis based on the Parties' bidding data and claims based on the results that the Commission's methodology would significantly understate the buyer power of the Parties' customers.²²⁵⁹

- (1224) Moreover, in the Response to the First Letter of Facts, the Notifying Party maintains that the demand side of the market is not fragmented at all as, amongst others, a large part of the overall demand has been concentrated in the hands of several customers as the recent [...] example would show.²²⁶⁰ In the Response to the Second Letter of Facts, the Notifying Party reiterates that demand is not fragmented but rather concentrated each year and in the hands of a number of key customers who can switch to alternative suppliers or multi-source in a market characterised by overcapacity.²²⁶¹ Furthermore, the most recent reservation of capacity by [...] would show how concentrated demand is and how much bargaining power customers have.²²⁶²
- (1225) Fourth, buyer power of customers would be reflected by the difference in profitability of HHIH and the major owner of LLNGCs.²²⁶³ Further, the Commission would have wrongly concluded that HHI and DSME do not compete aggressively because their expected gross margins are positive²²⁶⁴ and that large differences between expected and actual margins would illustrate the lack of buyer power.²²⁶⁵
- (1226) Fifth, the fact that, thanks to the classification societies role, LLNGCs are standardised products and therefore customers can easily switch and have switched to or multisourced from other several and credible shipbuilders including Chinese ones would illustrate their buyer power.²²⁶⁶ In the Response to the First Letter of Facts, the Notifying Party maintains that, contrary to what was argued by the Commission, the Commission's file would show consistent evidence that customers

²²⁵⁷ Response to the Article 6(1)(c) decision, paragraphs 349-354.

²²⁵⁸ Response to the SO, para. 832-854 and Response to the Second Letter of Facts, para. 222-225.

²²⁵⁹ Response to the Second Letter of Facts, para. 226-229.

²²⁶⁰ Response to the First Letter of Facts, paragraphs 215-220.

²²⁶¹ Response to the Second Letter of Facts, paragraph 204. See also Response to the Second Letter of Facts, paragraph 221 and ff.

²²⁶² Response to the Second Letter of Facts, paragraph 205.

²²⁶³ The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3c.

²²⁶⁴ Response to the SO, paragraphs 824-826 and Response to the Second Letter of Facts, para. 243-245.

²²⁶⁵ Response to the SO, paragraphs 827-831 and Response to the Second Letter of Facts, para. 243-245.

²²⁶⁶ Response to the Article 6(1)(c) decision, paragraphs 95-106 and 360-369; The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3c; The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Section 2(b), 2(e), 3(d); the Notifying Party's submission "Competitive Market Dynamics Giving Rise to Countervailing Buyer Power" dated 26 May 2020. See also the Response to the SO, paragraphs 855-856 and 874-887.

would have the proven ability to switch and multi-source.²²⁶⁷ In any event, even if LLNGCs were considered as differentiated products, this would not indicate that customers' buyer power is limited.²²⁶⁸ Furthermore, price dispersion would not be as large as the Commission claims.²²⁶⁹ In the Response to the Second Letter of Facts, the Notifying Party reiterates that customers would have proven the ability to switch and multi-source.²²⁷⁰

- (1227) Sixth, an assessment of customer purchasing power in this market must factor in the use of discounts and options in contractual negotiations as both discounts and options further demonstrate buyer power.²²⁷¹ Indeed, the Commission would have wrongly concluded and failed to substantiate that options do not evidence buyer power.²²⁷²
- (1228) In the Response to the First Letter of Facts, the Notifying Party maintains that, contrary to what was argued by the Commission, the Commission's file would show evidence that option clauses are in favour of customers.²²⁷³ Moreover, there would be no correlation between price and concentration levels as if this were the case, the expected HHI's margins in tenders with fewer competitors should have been higher than in tenders with multiple competitors and customers can easily react to a price increase by either absorbing the cost and passing it on or deferring the order.²²⁷⁴ Indeed, the Commission would have ignored the evidence of the ability of customers to delay purchases²²⁷⁵ or how customers pressured HHI and DSME to extract more favourable conditions.²²⁷⁶ HHI has suffered significant losses and its average profitability, by contrast to what occurred to shipowners, declined in the past 10 years.²²⁷⁷
- (1229) In the Response to the Second Letter of Facts,²²⁷⁸ the Notifying Party reiterates that the Commission would ignore that option contracts provide shipowners with significant advantages. In order to substantiate this claim, the Notifying Party provides in Annex 25 to the Response to the Second Letter of Facts a stylized model (that is further discussed in Annex 24 to the Response to the Second Letter of Facts) to show that powerful buyers would use option contracts strategically to compel shipbuilders to expand capacity. Thus, option contracts would (i) allow shipbuilders to hedge the risk of rising input costs and (ii) allow the shipowner to negotiate the

²²⁶⁷ Response to the First Letter of Facts, paragraphs 220-221.

²²⁶⁸ Response to the SO, paragraphs 815-818.

²²⁶⁹ Response to the SO, paragraph 819.

²²⁷⁰ Response to the Second Letter of Facts, para. 237-240.

²²⁷¹ Response to the Article 6(1)(c) decision, paragraphs 118-123 and 359; The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Section 3(d); the Notifying Party's submission "Competitive Market Dynamics Giving Rise to Countervailing Buyer Power" dated 26 May 2020.

²²⁷² Response to the SO, paragraphs 899-910.

²²⁷³ Response to the First Letter of Facts, paragraphs 222-2226.

²²⁷⁴ The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3e, 3c; The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Section 2(e), 2(f); the Notifying Party's submission "Competitive Market Dynamics Giving Rise to Countervailing Buyer Power" dated 26 May 2020.

²²⁷⁵ Response to the SO, paragraphs 887-889. See also Response to the Second Letter of Facts, paragraph 250f.

²²⁷⁶ Response to the SO, paragraph 898.

²²⁷⁷ The Notifying Party's Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3c; The Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Section 3(d).

²²⁷⁸ Response to the Second Letter of Facts, paragraphs 208-220.

prices down at the moment of exercising the option. The Notifying Party argues further that the [...] reservation of [...] LLNGC slots in 2020 would illustrate both the advantages that option contracts create for buyers and the effect of such contracts on the market overall.²²⁷⁹ Seventh, the Commission would have also relied on unfounded and irrelevant details to support that customers have no buyer power. In particular, the Commission would fail to provide a logical link how compensation clauses and financial or non-financial incentives can prevent customers from having buyer power.²²⁸⁰

(1230) Eighth, the sponsored entry of new competitors such as SHI-Zvezda and other Chinese-sponsored shipbuilders in the market would be additional evidence of customers' strong buyer power.²²⁸¹

(1231) Ninth, the market investigation would show that customers enjoy buyer power and can exert buyer power post-Transaction.²²⁸²

8.3.9.2. The Commission's assessment

(A) Legal framework and introduction

(1232) Even firms with high market shares may not be in a position, post-merger, to significantly impede effective competition, in particular by acting to an appreciable extent independently of their customers, if the latter possess countervailing buyer power. Countervailing buyer power in this context should be understood as the bargaining strength that the buyer has towards the seller in commercial negotiations due to its size, its commercial significance to the seller and its ability to switch to alternative suppliers.²²⁸³

(1233) More importantly, pursuant to the Horizontal Merger Guidelines, countervailing buyer power exists if customers could reasonably threaten to resort, within a reasonable time frame, to alternative sources of supply should the supplier decide to increase prices or to otherwise deteriorate quality or the conditions of delivery. This would be the case, for example, if the buyer could immediately switch to other suppliers.²²⁸⁴

(1234) For the purpose of this Section and for the reasons outlined in **Section 8.3.4.3**, the Commission will assess whether the Parties' customers, namely, at least with respect to the Parties,²²⁸⁵ customers of membrane LLNGCs, have the ability and the incentive to exert a sufficient degree of buyer power towards the Parties and whether, post-Transaction, the balance of power between shipbuilders and customers will shift more towards one or the other.

²²⁷⁹ Response to the Second Letter of Facts, paragraphs 218-220.

²²⁸⁰ Response to the SO, paragraphs 857-873.

²²⁸¹ Response to the Article 6(1)(c) decision, paragraph 320; the Notifying Party's submission on considerations relating to the LNG market dated 26 May 2020, Section 3(a).; the Notifying Party's submission "Competitive Market Dynamics Giving Rise to Countervailing Buyer Power" dated 26 May 2020. See also the Response to the SO, paragraphs 890-897. See also the Response to the First Letter of Facts, paragraphs 227-228 and Response to the Second Letter, paragraphs 246-250.

²²⁸² Response to the SO, paragraphs 911-916 and Response to the Second Letter of Facts, paragraphs 246-249.

²²⁸³ Horizontal Merger Guidelines, paragraph 64.

²²⁸⁴ Horizontal Merger Guidelines, paragraph 65.

²²⁸⁵ As explained by the Notifying Party in its reply to questions 2 of the second follow up to the Commission's RFI 37, [...].

- (1235) The Commission further notes that in this type of market neither switching nor multisourcing are accurate terms to be used as each project may have different requirements (e.g. state-sponsored projects may require a shipowner to use a locally built vessel) and customers are not active in markets dealing with a continuous production of goods for which they need constant input of another homogenous good which, for security of supply reasons, they multisource.
- (B) The Commission's assessment: customers have no ability or incentive to exert a sufficient degree of buyer power
- (1236) The market investigation showed that customers have neither the ability nor the incentive to exert a sufficient degree of buyer power to constrain the Parties post-Transaction and that post-Transaction customers' negotiating position will worsen.
- (1237) The Commission considered the following factors. First, a very concentrated supply side of the market and a fragmented demand side of the market (which will be even more fragmented post-Transaction) with even more limited choice post-Transaction. Second, product differentiation and large price dispersion in the LLNGC market. Third, that price-maker/price-taker dynamic appears to change over time according to the supply/demand balance. Fourth, actual and expected margins in LLNGCs are significantly different. Fifth, that there is no excess capacity forecast for LLNGCs in the coming years. Sixth, option clauses are both in favour of shipowners and shipbuilders. Seventh, shipbuilders may be able to insert compensation clauses in contracts. Eighth, there is no significant financial or non-financial incentives from shipbuilders to customers. Ninth, there is neither customer switching nor multisourcing as such. Tenth, there is no example of sponsored credible entry nor vertical integration and it is unlikely there will be any in the near future.
- a) *A very concentrated supply side of the market and a fragmented demand side of the market with even more limited choice post-Transaction*
- (1238) The Commission considers that the supply-side of the LLNGC market including the large FSRUs segment is very concentrated, that the demand side of the market is rather fragmented and that, as a consequence, customers will have even more limited choice of shipbuilders post-Transaction for the following reasons.
- (1239) First, the Commission notes that the supply side of the market is very concentrated. This has been analysed in, for example, **Section 8.3.1**, **Section 8.3.2** and **Section 8.3.4**.
- (1240) In that regard, the Commission disagrees with the Notifying Party's view that shipbuilders are forced to participate aggressively in all tenders that come to market even when they know that the price will be very low. If this assertion were to be true the gross margin would be very close to zero over a long period of time, something that it is not observed in the development of the gross margin of the Parties.²²⁸⁶ However, as will be further discussed in **Section 8.3.9.2 (B) b) and d)** below, the actual average gross margins for LLNGCs for both Parties are positive and above [...] in most years. In any event, even if the NP's argument that there is fierce competition and that the gross margins are positive to cover the fixed costs is true, the fact that profit margins are positive means that the Parties are not competing that fiercely to cover only the fixed costs. Further, it cannot be excluded that in some periods shipbuilders may have to absorb lower prices and margin due to a contraction

²²⁸⁶ As shown in **Figure 59** and **Figure 60**.

in orders for example related to a weak demand; however, this would not be evidence of buyer power but it would be a simple dynamic of supply/demand.

- (1241) Second, the Commission considers that the demand side of the market is already rather fragmented and that post-Transaction fragmentation will increase. On top of this, the Commission underlines that the significance of single customers on the Parties' revenues and orders does not necessarily show a high degree of buyer power. Indeed, the LLNGC market is characterised by few suppliers that are capacity constrained and some large buyers that necessarily purchase a large number of vessels at the same time. However, the large buyer may not be able to exert any or at least no sufficient buyer power as they would have very limited credible alternative.
- (1242) In that regard, although the two brokers interviewed by the Commission seem to have diverging views on the balance of power in the market, with one of them saying that it generally lies more in favour of the shipowners²²⁸⁷ and the other one stating that it depends on the state of the market,²²⁸⁸ the Commission analysed the following factors. First, it assessed each of the Parties' customers' proportion of membrane LLNGCs ordered from each of the Parties' in the 2011-2020 period by year, each of the Parties' customers' proportion of membrane LLNGCs ordered from each of the Parties in the 2016-2020 period (aggregated) by units and by value and compared them with proportions that are expected post-Transaction. Second, it assessed each of the Parties' customers' shares of total market demand for membrane LLNGCs.
- (1243) More specifically, the Commission's analysis presented in **Table 48**, **Table 49** and **Table 50** below is based on Clarksons data.²²⁸⁹ The Commission acknowledges that there are small differences between vessels recorded in the HHI's tender data in comparison to the Clarksons data, this is also because the customer name is redacted in a few instances. In particular, two important customers reported as unknown by Clarksons [...] and [...].²²⁹⁰ However, since a tender could be won but subsequently cancelled, the Commission will focus only on the data available from Clarksons.²²⁹¹
- (1244) The Commission found that the demand side of the market is already relatively fragmented and that post-Transaction fragmentation will increase with even more limited choice for customers of LLNGCs for the following reasons.
- (a) First, as shown in **Table 48** below, the Commission found that HHI's orders of [...] vessels represented between [...] and [...] of all of its orders in each year of the 2011-2020 period with the exception of 2018 and that DSME's orders of [...] to [...] vessels represented between [...] and [...] of all of its orders in each year of the 2011-2020 period with the exception of 2014, 2016 and 2020. On average, in the 2011-2020 period, over [...] of each of the Parties' orders consisted in orders of one to two vessels and over [...] in the 2016-2020 period.

²²⁸⁷ Minutes of the conference call with [...] dated 2 March 2020, paragraph 7. [DOC ID: 2657]

²²⁸⁸ Minutes of the conference call with [...] dated 4 March 2020, paragraph 13. [DOC ID: 2699]

²²⁸⁹ Clarksons database responsive to RFI 67, Annex Q38.

²²⁹⁰ The tender reported for [...] in Clarksons is the same for which HHI reports [...] as the customer.

²²⁹¹ The analysis includes only membrane vessels, except for HHI ([...] non-membrane vessels ordered by [...] from HHIH in 2013 and of [...] non-membrane vessel ordered by [...] from HHIH in 2014).

Table 48 Customers' proportion of vessels ordered from HHI and DSME and customers' share of total market demand by year in the 2011-2020 period

Year and Totals		No. vessels ordered from HHI	Customer's proportion of vessels ordered from HHIH	No. vessels ordered from DSME	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHIH and DSME combined	Customer's share of total market (including HHIH's and DSME's competitors) demand (excl. non-membrane vessels except for HHIH non-membrane vessels))
2011	[...]	[...]	[...]	[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	HHI: [...]	[...]	[...]			[...]	[...]
	DSME: [...]	[...]		[...]	[...]	[...]	[...]
	Total: [...]	[...]		[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
2012	[...]	[...]	[...]	[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	HHI: [...]	[...]		[...]	[...]	[...]	[...]
	DSME: [...]	[...]	[...]	[...]		[...]	[...]
	Total: [...]	[...]	[...]	[...]		[...]	[...]
	[...]	[...]	[...]			[...]	[...]
2013	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]	[...]	[...]	[...]	[...]
	HHI: [...]	[...]		[...]	[...]	[...]	[...]
	DSME: [...]	[...]	[...]			[...]	[...]
	Total: [...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
2014	[...]			[...]	[...]	[...]	[...]
	[...]			[...]	[...]	[...]	[...]

Year and Totals		No. vessels ordered from HHI	Customer's proportion of vessels ordered from HHH	No. vessels ordered from DSME	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHH and DSME combined	Customer's share of total market (including HHH's and DSME's competitors) demand (excl. non-membrane vessels except for HHH non-membrane vessels))
HHI: [...] DSME: [...] Total: [...]	[...]2292			[...]	[...]	[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]2293			[...]	[...]	[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	2015 HHI: [...] DSME: [...] Total: [...]	[...]	[...]	[...]			[...]
[...]				[...]	[...]	[...]	[...]
[...]				[...]	[...]	[...]	[...]
[...]				[...]	[...]	[...]	[...]
[...]		[...]	[...]			[...]	[...]
[...]				[...]	[...]	[...]	[...]
[...]		[...]	[...]			[...]	[...]

2292 [...].
2293 [...].

Year and Totals		No. vessels ordered from HHI	Customer's proportion of vessels ordered from HHH	No. vessels ordered from DSME	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHH and DSME combined	Customer's share of total market (including HHH's and DSME's competitors) demand (excl. non-membrane vessels except for HHH non-membrane vessels))
2016	[...]			[...]	[...]	[...]	[...]
	HHI: [...]	[...]	[...]			[...]	[...]
	DSME: [...]						
	Total: [...]						
2017	[...]			[...]	[...]	[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	HHI: [...]	[...]	[...]			[...]	[...]
	DSME: [...]	[...]	[...]			[...]	[...]
	Total: [...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
2018	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]	[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	HHI: [...]	[...]		[...]	[...]	[...]	[...]
	DSME: [...]	[...]		[...]	[...]	[...]	[...]
	Total: [...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]	[...]	[...]	[...]	[...]	

Year and Totals		No. vessels ordered from HHI	Customer's proportion of vessels ordered from HHHH	No. vessels ordered from DSME	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHHH and DSME combined	Customer's share of total market (including HHHH's and DSME's competitors) demand (excl. non-membrane vessels except for HHHH non-membrane vessels))
2019	[...]			[...]	[...]	[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	HHI: [...]	[...]	[...]			[...]	[...]
	DSME: [...]	[...]	[...]			[...]	[...]
	Total: [...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
2020	[...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]
	[...]			[...]	[...]	[...]	[...]
	HHI: [...]	[...]	[...]	[...]	[...]	[...]	[...]
	DSME: [...]	[...]	[...]			[...]	[...]
	Total: [...]	[...]	[...]			[...]	[...]
	[...]	[...]	[...]			[...]	[...]

Source: [...].

- (b) Second, [...], each customer's proportion of vessels ordered [...] would significantly go down post-Transaction in every year. This is also confirmed by a majority of customers that expressed an opinion in the market investigation,

which perceive that, post-Transaction, their negotiating position will be at least weaker if not importantly affected.²²⁹⁴

- (c) Third, as shown in **Table 48**, for the period 2011-2020, customers whose individual share of total demand is equal to or less than [...] represent over [...] of orders; those whose individual share of total demand is between [...] and [...] represent over [...] of orders and those whose individual share of total demand is between [...] and [...] represent over [...] of orders. Moreover, each of the yearly Parties' customers' shares is lower than each of the Parties' market share on a yearly basis with the only exception of [...] customers in 2012, [...] customer in 2013 and [...] customers in 2016. All of the yearly Parties' customers' shares are lower than the Parties' combined market shares on a yearly basis.
- (d) Fourth, as shown in **Table 49** and **Table 50** below, the Commission's considerations are also confirmed by analysing: (i) each of the Parties' customers' proportion of membrane LLNGC, in the 2016-2020 period (aggregated), (ii) each of the Parties' customers' proportion of sales²²⁹⁵ in the 2016-2020 (aggregated) and (iii) each of those customer's share of total demand.

Table 49 Customers' proportion of vessels ordered from HHIH and DSME and customers' share of total market demand in the 2016-2020 period

	No. vessels ordered	Customer's proportion of vessels ordered from HHIH	No. vessels ordered	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHIH and DSME combined	Customer's share of total market (including other shipbuilders) demand (excluding non-membrane vessels)
[...]	[...]	[...]			[...]	[...]
[...]			[...]	[...]	[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]			[...]	[...]	[...]	[...]
[...]	[...]	[...]	[...]	[...]	[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]	[...]	[...]	[...]	[...]

²²⁹⁴ Replies to question 125.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²²⁹⁵ Proportion of revenues is not considered on a yearly basis since payments are received in instalments and a yearly basis may not be appropriate.

	No. vessels ordered	Customer's proportion of vessels ordered from HHHH	No. vessels ordered	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHHH and DSME combined	Customer's share of total market (including other shipbuilders) demand (excluding non-membrane vessels)
[...]			[...]	[...]	[...]	[...]
[...]			[...]	[...]	[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]			[...]	[...]	[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]						[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]			[...]	[...]	[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]	[...]	[...]			[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]						[...]
[...]	[...]	[...]			[...]	[...]
[...]						[...]

Source: Commission's elaboration based on the Clarksons database responsive to RFI 67, Annex Q38.

Table 50 HHI's and DSME's customers' proportion of revenues of and customers' share of total market demand by value in the 2016-2020 period

	Customer's proportion of vessels ordered from HHIH	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHIH and DSME combined	Customer's share of total market demand (including other shipbuilders) (excluding non-membrane vessels)
[...]	[...]		[...]	[...]
[...]		[...]	[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]		[...]	[...]	[...]
[...]	[...]	[...]	[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]	[...]	[...]	[...]	[...]
[...]		[...]	[...]	[...]
[...]	[...]		[...]	[...]
[...]		[...]	[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]

	Customer's proportion of vessels ordered from HHHH	Customer's proportion of vessels ordered from DSME	Customer's proportion of vessels ordered from HHHH and DSME combined	Customer's share of total market (including other shipbuilders) demand (excluding non-membrane vessels)
[...]	[...]		[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]		[...]	[...]	[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]	[...]		[...]	[...]
[...]				[...]
[...]	[...]		[...]	[...]
[...]				[...]

Source: Commission's elaboration based on the Clarksons database responsive to RFI 67, Annex Q38.

- (e) Fifth, the Commission notes that, as reflected in **Table 49** and **Table 50** above, HHI and DSME had only [...] customers in common in the last five years ([...] and [...]). After the Transaction, the merged entity would have experience with all but 10 membrane LLNGCs customers. Therefore, the merged entity would have won contracts with around 30 different customers.
- (1245) Therefore, in light of the above, the Commission considers that post-Transaction the commercial significance to the merged entity of each customer would be significantly lower than pre-Transaction. Indeed, pre-Transaction HHI's top 5 known customers account for [...] of its demand. DSME's top 5 known customers correspond to [...] of its total orders. However, considering the combined portfolio of the Parties combined, the top 5 known customers would account for [...] and, excluding the unknown customers, [...] is contracted with [...] different customers.
- (1246) In that respect, the Commission notes that the Notifying Party criticizes the Commission's approach of measuring buyer power, as applied in **Table 48**, **Table 49** and **Table 50**, because the analysis would be inconsistent in its selection of units by referring to order either as (i) single vessel ordered by a customer from a shipbuilder, (ii) all vessels ordered by a customer from a shipbuilder in a given year and (iii) all vessels ordered by a customer in a given year across all shipbuilders. Furthermore, the Commission would not take into account the fact that yearly volumes of vessels ordered can fluctuate significantly and customers would negotiate with shipbuilders

not for orders in a given year, but for a particular project, they have in mind.²²⁹⁶ In order to account for this claims, the Notifying Party submitted in Response to the Second Letter of Facts a buyer power analysis that is based on HHI's and DSME's bidding data. The analysis of HHI's bidding data, as submitted by the Notifying Party, shows that more than [...] of all HHI's won LLNGC tenders were for two or less vessels and around [...] of vessels ordered from HHI came from tenders with two or less vessels. In the same period, DSME's bidding data show that almost [...] of all DSME's won tenders were for two or less vessels and almost [...] of all vessels ordered from DSME came from tenders with two or less vessels. The Notifying Party argues that the analysis based on bidding data shows that the Commission's analysis understates the buyer power of the Parties' customers.²²⁹⁷

- (1247) On the point raised by the Notifying party and reported in the above paragraph, the Commission does not dispute that there are different analytical frameworks and approaches that could be applied to assess buyer power. The assessment can be based on descriptive statistics by using for example order data as done in the Commission's analysis or bidding data as done in the Notifying Party's analysis. In both cases, the conclusion is clear that demand is rather fragmented. In this respect, it is not necessary to determine the precise advantages and disadvantages of the different methods since they both underpin the premise of the Commission's analysis namely that many buyers are relatively small. In particular, there is a significant portion of orders consisting of one or two vessels. The Commission notes in this respect that according to the Horizontal Merger Guidelines it is not sufficient that buyer power off-sets potential adverse effects of a merger only for a particular segment of customers.²²⁹⁸
- (1248) Moreover, for the reasons explained in **Section 8.3.4.2** and as shown by **Table 48**, **Table 49** and **Table 50** above, [...]. However, the Commission notes that even if a large customer were to derive (quod non) some degree of sufficient bargaining power from their large size, the large size of their order or a sophisticated purchasing strategy, there is no generally convincing reason why other smaller customers or customers placing smaller orders should be also positively affected. It would seem more likely that even assuming that larger customers or customers placing large orders would have a certain power, they would take steps that protect only themselves, if such a possibility existed, from a lessening of competition between suppliers, as these firms may expect to gain from an increase in their rivals' costs after the merger.²²⁹⁹
- (1249) Further, on the claim that the buyer power of customers is also reflected in the different profitability of HHIH and the major owners of LLNGCs,²³⁰⁰ the Commission raises the following observations. Measures of profitability calculated as percentages of sales are not comparable across sectors, this because sales are measured differently in different sectors. The sales of shipbuilders reflect the price of the carriers and include all the raw materials and manufacturing costs of these carriers. On the contrary the sales of shipowners are represented by the charter fee they receive. This latter figure is significantly lower than the sale value of the carrier.

²²⁹⁶ Response to the SO, paragraphs 832-854 and Response to the Second Letter of Facts, paragraphs 222-225.

²²⁹⁷ Response to the Second Letter of Facts, paragraphs 226-228.

²²⁹⁸ Horizontal Merger Guidelines, paragraph 67.

²²⁹⁹ Horizontal Merger Guidelines, paragraph 65.

²³⁰⁰ Memorandum by HHIH submitted on 20 May 2020 Section 3 c).

Therefore, even if a shipbuilder and a shipowner have the same absolute profitability their margin would necessarily be significantly different. For instance, the Notifying Party reports that [...] generated [...] profit margin before tax and this is compared to the [...] LLNGC profit margin of HHI. The Commission however notes that looking at the comparison of the absolute margin would produce a different outcome. Looking at 2019 KSOE registered an EBIT of USD [...] million²³⁰¹ whereas [...] generated an EBIT of USD [...].²³⁰² Therefore, although the latter company was more profitable than KSOE the gap in profitability is not as large and striking as the one claimed by the Notifying Party. For these reasons the Commission considers that the comparison of the Notifying Party on shipbuilder and shipowner percentage margins does not support the claim that shipowners would have sufficient buyer power.

(1250) Finally, in its Response to the Second Letter of Facts²³⁰³ the Notifying Party argues that the fact that the majority of customers who provided feedback on the Transaction would not expect a negative impact on their company or on market prices would show that customers would have the ability to exert a sufficient degree of buyer power post-Transaction. The Commission disagrees with such a view as the fact that the majority of customers who provided feedback on the Transaction would not expect a negative impact on their company or on market prices does not prove, per se, and especially when, as explained in this Section, the facts and the figures show otherwise, their ability or incentive to exert a sufficient degree of buyer power in the market.

(1251) In light of the above, the Commission considers that the supply-side of the LLNGC market including the large FSRUs segment is very concentrated, that the demand side of the market is rather fragmented and that, as a consequence, customers will have even more limited choice of shipbuilders post-Transaction.

b) Product differentiation and large price/margin dispersion in the LLNGCs market

(1252) The Commission considers that due to the significant degree of product differentiation and large price dispersion, customers could not exercise a high degree of buyer power post-Transaction even when in possession of key information from other tenders for the following reasons.

(1253) First, the Commission considers that **Figure 56** below presents the level of price dispersion that it is possible to identify for the different LLNGCs. The figure shows that even when the evolution of these factors over time and different cargo capacities are taken into account, there are still significant price differences of usually at least [...], which, in this market, cannot be considered as negligible given that it corresponds to about [...] of the average price ([...]) of a 174,000m³ LLNGC (including Arc7 LLNGCs and large FSRUs),²³⁰⁴ namely to more than [...] of HHIH's gross margins in 2011-2020 and to [...] of DSME's gross margins in 2011-2020²³⁰⁵

(1254) In that regard, contrary to the Notifying Party's argument that price dispersion would not be as large as the Commission claims if large FSRUs and large ice-breakers were

²³⁰¹ Korea Shipbuilding Offshore Engineering Co Ltd KOSE A009540 Financials Key Stats.xls. [DOC ID: 3327]

²³⁰² [...]. [DOC ID: 3328]

²³⁰³ Response to the Second Letter of Facts, paragraphs 206 and 236.

²³⁰⁴ Clarksons database provided by the Notifying Party in Annex Q.38 of RFI 67.

²³⁰⁵ Parties' tender data submitted in response to RFI 65.

to be excluded,²³⁰⁶ the Commission notes that large FSRUs and large ice-breakers belong to the LLNGC market and should therefore not be excluded from the assessment. In any event, the Commission notes that, as shown by the Notifying Party²³⁰⁷ even excluding Arc7 LLNGCs and large FSRUs, price dispersion is in the range of [...] per m3 of cargo capacity in 2017, [...] per m3 of cargo capacity in 2018 and about [...] USD per m3 of cargo capacity in 2019. This means that at its lowest levels since 2017, the price dispersion represented about [...] of the average price (USD [...]) of an average conventional LLNGC of 174,000m3, nearly equivalent to HHIH's average gross margins in 2011-2020.²³⁰⁸ At its highest, it represented above [...] of the average price (USD [...]) of an average conventional LLNGC (174,000m3), meaning above DSME's average gross margins in 2011-2020.²³⁰⁹ In other words, the figures show that the price dispersion is significant for LLNGCs. In the Response to the Second Letter of Facts,²³¹⁰ the Notifying Party argued that the Commission misrepresented the evidence provided by the Notifying Party in its Response to the SO²³¹¹ and mentioned above in this paragraph. To support its claim, the Notifying Party provided the claimed actual price dispersion shown in Figure 30 of the Response to the SO: [...]. In response to the Notifying Party's argument, the Commission considers that, even if the figures provided by the Notifying Party were correct, the price dispersion that would result remains significant for LLNGCs.

Figure 56 Price dispersion of LLNGCs after normalisation for different size

[...]

Source: Commission's computation on the basis of the Clarksons database submitted by the Notifying Party responsive to RFI 67, Q38.

- (1255) Moreover, the Commission notes that for what concerns information that can be gathered within the same tender, the Commission considers that LLNGCs are complex ships and that different technical solutions are implemented by different [...] ²³¹²
- (1256) Further, the Commission notes that for what concerns tender prices, collecting bidders' price information within a tender is not particularly easy. Indeed, the intermediaries involved in the process do not have full visibility on the bids, as can be seen in the LLNGC tender in 2019: [...] ²³¹³ Moreover, the Commission considers that the simple fact of potentially being able to observe other shipbuilders' price offers does not necessarily mean that the customers would have buyer power. Observing other firms' prices is typical in several industries and per se would not imply that customers have buyer power. On the contrary, it could also be argued that because of this transparency shipbuilders could also better coordinate their pricing.

2306 The Response to the SO, paragraph 819.
 2307 Response to the SO, paragraph 819, Figure 30.
 2308 Parties' tender data submitted in response to RFI 65.
 2309 Parties' tender data submitted in response to RFI 65.
 2310 Response to the Second Letter of Facts, paragraph 242.
 2311 Response to the SO, paragraph 819, Figure 30.
 2312 DSME's internal document responsive to RFI 15, Annex Q9.63- Minute of the meeting with [...] - confidential, pag. 2, DSME email correspondence dated 12 December 2016. [DOC ID 1687-53]
 2313 HHI's internal document responsive to RFI 15, correct AnnexQ9.52 - [...] - confidential, pag. 1, HHI email correspondence dated 28 February 2019. [DOC ID: 2324]

- (1257) Second, the Commission notes that in the Response to the SO, the Notifying Party presents a descriptive analysis of the distribution of HHI's and DSME's expected profit and gross margins by vessel class.²³¹⁴ The analysis shows for both Parties that there is not only a large profitability dispersion across vessel classes in the period 2009 to 2019, but also within the different vessel classes. The Commission considers that this observation provides further evidence that customers could not exercise a high degree of buyer power post-Transaction even when in possession of key information from other tenders.
- (1258) In that regard the Commission presents in **Figure 57** and **Figure 58** below the level of gross margin dispersion for HHI's and DSME's in the LLNGC market. Both figures show that the gross margins of both Parties differ significantly in each tender year. **Figure 57** shows that for HHI the minimum margin dispersion is [...] percentage points in 2015 and the maximum margin dispersion is [...] percentage points in 2012, while the average yearly price dispersion is [...] percentage points in the period 2011 to 2020. **Figure 58** shows for DSME that minimum margin dispersion is [...] percentage points in 2016 (with only [...] observations) and the maximum margin dispersion is [...] percentage points in 2014, while average yearly margin dispersion is [...] percentage points in the period 2011 to 2020.

Figure 57 HHI's gross margin (in %) dispersion of LLNGCs

[...]

Source: HHI's tender data submitted in response to RFI 65

Figure 58 DSME's gross margin (in %) dispersion of LLNGCs

[...]

Source: DSME's tender data submitted in response to RFI 65

- (1259) The Commission considers that the analysis shows for both Parties that there is large profitability dispersion within the LLNGC market. The Commission considers that this observation is not compatible with the claim that all customers, because of transparency in the bidding process or more broadly in the market, are able through the exercise of a sufficient degree of buyer power to always achieve prices that closely corresponds to costs.
- (1260) In light of the above, the Commission considers that due to the significant degree of product differentiation and large price dispersion as well as due to a large profitability dispersion across vessel classes and also within the different vessel classes, customers could not exercise a high degree of buyer power post-Transaction.
- c) *The price-maker/price-taker dynamic appears to change over time according to the supply/demand balance*
- (1261) The Commission considers that the price-maker/price-taker dynamic appears to change over time, according to the supply/demand balance. Consequently, in that regard, the Commission considers that the market investigation did not indicate that customers enjoy a sufficient degree of buyer power to outweigh the potential negative effects likely to be created by the Transaction for the following reasons.

²³¹⁴ Response to the SO, Annex C.44, Section 3.

- (1262) First, contrary to what the Notifying Party claimed at paragraph 912 of the Response to the SO, [...] (not [...]) respondents provided an informative response to question 94 of Q5 to Competitors. Indeed, five respondents stated that they are price takers, [...] that it depends on the market conditions and one that it is price maker.²³¹⁵
- (1263) Second, the majority of customers that responded indicate that the price-maker/price-taker dynamic changes over time depending on the supply/demand balance.²³¹⁶ For example, a customer explained that the relative power in the relationships between shipbuilders and customers of LNGCs depends “[...] purely on demand relative to the number of berths available. At present, Korean shipbuilders have a capacity of approx.. [...] LNGCs per annum, which is roughly in line with demand. If demand increases it is highly likely that Korean shipbuilders will increase capacity”.²³¹⁷ Another customer stated that “[...] while LNG market is strong and demand for vessels high, shipyards are not controlling the market since they are not receiving any orders on other segments and thus competing for the small (relative to the others) LNG market.[...]”.²³¹⁸ In addition, as explained by one customer that had initially reserved slots for the construction of [...] LLNGCs²³¹⁹ “[...] ship orders tend to come in waves, and when there is a lack of orders for a few months, some industry observers may argue that there is excess capacity. However, it is difficult to deny the fact that the commercially competitive capacity is concentrated in the hands of the big 3 Korean shipbuilders. [...] [O]vercapacity in the LNG shipbuilding market is much less of a concern than overconcentration. Even if there are arguably periods of excess capacity, this does not mitigate [...] concerns about supplier market power caused by a further concentration of shipbuilding capacity [...]”.²³²⁰ [...] also confirmed that the price-maker/price-taker dynamics depend on the market conditions, as follows: “[...] buyer and producer power are not carved in stone but shift according to the structure of the market at various points in time influenced by changing factors such as competitive pressure, disruptive technology shifts (from non-membrane to membrane-type LNG cargo containment system) and capacity reductions aimed at consolidating producers’ market power”.²³²¹
- (1264) Third, some customers that responded indicated that when negotiating a new order of LNGCs they are not able to leverage orders of other types of vessels from the same shipyard in order to get better conditions. Some other customers clarified this by stating that “[...] this does change from time and is sometimes impacted by market conditions for other vessel types, where shipbuilders may wish to recoup lower prices in other vessel categories with higher prices for the high quality LNG carrier market”.²³²²
- (1265) Fourth, the majority of customers that responded indicate that, when negotiating a new order of LNGCs, shipbuilders offer rebates but this appears to be mostly due to cost savings and economies of scale that the shipbuilder is able to achieve with large orders. For example, a customer clarified that it is mostly due to the economies of scale that the shipbuilder is able to achieve in case a ship owner orders a large number of ships as it is “[...] cheaper for yards to build a series of sister vessels

²³¹⁵ Replies to question 94 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

²³¹⁶ Replies to question 50 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²³¹⁷ Replies to question 50 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²³¹⁸ Replies to question 50 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²³¹⁹ Minutes of the call with [...] dated 16 July 2020, paragraph 3. [DOC ID: 4101]

²³²⁰ [...] reply to question 2 of Commission RFI to [...] dated 28 July 2020. [DOC ID: 3922]

²³²¹ [...] observations on the SO, page 16. [DOC ID: 3851]

²³²² Replies to questions 51 and 51.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

*rather than a one off as series effect will have more spread out costs for design, engineering, suppliers, know-how and experience [...]. It will all be transferred making more efficient and cost effective the project”.*²³²³

- (1266) Fifth, some shipbuilders consider that the price-maker/price-taker dynamic depends on the market conditions, some others that customers are price markers and one considers that customers enjoy limited buyer power for LNGCs, especially because the supply side for LNGCs is rather concentrated. One shipbuilder for example explained that “[i]n [...] LNG carriers market, shipbuilders are relatively stronger than customers compared to containerships and oil tankers market. The number of suppliers in the market has close relationship with the negotiation power of shipbuilders against customers”.²³²⁴
- (1267) In conclusion, the Commission considers the price-maker/price-taker dynamic appears to change over time, according to the supply/demand balance. Consequently, in that regard, the Commission considers that the market investigation did not indicate that customers enjoy a sufficient degree of buyer power to outweigh the potential negative effects likely to be created by the Transaction.
- d) *Actual and expected margins in LLNGCs are significantly different*
- (1268) The Commission considers that actual and expected margins in LLNGCs are significantly different for the following reasons.
- (1269) First, **Figure 59** and **Figure 60** show that the actual average gross margins for LLNGCs for both Parties are [...]. In any event, the fact that profit margins are positive means that the Parties are not competing that fiercely to cover only their fixed costs. Further, it cannot be excluded that in some periods shipbuilders may have to absorb lower prices and margin due to a contraction in orders related for example to a weak demand, which would not be evidence of buyer power but simply a reflection of supply/demand dynamics.
- (1270) Second, the comparison of the expected and actual gross margins shows a significant difference between the two. For HHI the actual margin was at least [...] percentage points higher than the expected one since 2011. For DSME, with the exception of 2011, the actual margin was at least [...] percentage points higher than the expected one.
- (1271) Third, this difference implies that customers do not have a sufficient degree of buyer power to be able to limit the shipbuilder’s actual gross margins. Indeed, if they could exercise buyer power, they would adjust the price in order to accommodate any underlying actual cost difference even after the tender. Indeed, the Notifying Party argued in its submission²³²⁵ that changes in the expected total cost are reflected in the final bid price. However, the Commission underlines that, despite what is shown by the Notifying Party, the shipbuilder managed to gain a higher actual margin.

²³²³ Replies to questions 52 and 52.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²³²⁴ Replies to question 94 of Questionnaire Q5 to Competitors. [DOC ID: 3238] Contrary to what claimed by the Notifying Party at paragraph 912 of the Response to the SO, respondents providing an informative response to question 94 of Q5 to Competitors are [...] (not [...]). Indeed, [...] stated that they are price takers, [...] that it depends on the market conditions and [...] that it is price maker.

²³²⁵ The Notifying Party’s Letter to DG COMP dated 20 May 2020, Attachment - Memorandum by Hyundai Heavy Industries Holdings, Section 3e, 3c; The Notifying Party’s submission on considerations relating to the LNG market dated 26 May 2020, Section 2(e), 2(f); the Notifying Party’s submission “Competitive Market Dynamics Giving Rise to Countervailing Buyer Power” dated 26 May 2020

Figure 59 HHI's expected and actual gross margin

[...]

Source: The Commission's elaboration based on DSME's tender data submitted in response to RFI 65.

Figure 60 DSME's expected and actual gross margin

[...]

Source: The Commission's elaboration based on DSME's tender data submitted in response to RFI 65.

(1272) Fourth, as described in **Section 8.3.2.2 (C)**, in the Response to the SO, the Notifying Party has provided an econometric analysis aimed at studying the relationship between some of HHI's profitability indicators (bid prices, expected gross and profit margins) and some variables that capture the intensity of competition (the number of shipbuilders present in a particular tender and the presence of specific competitors) in the LLNGC market.²³²⁶ This analysis was updated with additional data in Response to the Second Letter of Facts.²³²⁷ In the different specifications, the Notifying Party also introduces several other control variables expected to have an impact of prices and margins, including the top five customers per vessel class. The analysis presented in Response to the SO does not find a statistically significant (negative) relation between HHI's prices and expected margins and the fact that the customer belong to the "top 5 customers". This means HHI's prices and expected margins are not lower when the customer is one of the top 5 customers for the corresponding vessel class. [Parties' business secrets]. Despite the limitations related to the nature and quality of the data, the Commission notes that this finding provides no evidence for a sufficient degree of buyer power.

(1273) In light of the above, the Commission considers that the significant difference between the actual and expected gross margins implies that customers do not have sufficient degree of buyer power to limit the shipbuilder's actual gross margins.

e) No excess capacity forecast for LLNGCs in the coming years

(1274) The Commission considers that, as explained in **Section 8.3.7.2 (B)**, there is currently no excess capacity for LLNGCs and the capacity situation is not expected to change in the foreseeable future. Overall, the analysis of capacity shows that the Transaction would aggregate a significant portion of capacity on the merged entity and that SHI and CSSC (Hudong), which are considered the only two credible competitors left would not have enough capacity to serve all demand. For these reasons the Commission considers that, following the Transaction, there will be a limit to the extent to which buyers would be able to place orders from other suppliers; therefore if anything, any potential existing buyer power related to capacity will be diminished because of the concentration in capacity brought about by the Transaction.

f) Option clauses are not exclusively in favour of customers

(1275) The Commission considers that option clauses are not exclusively in favour of customers for the following reasons and that, for this reason, they do not show that customers would have the ability or incentive to exert a sufficient degree of buyer power in the LLNGC market.

²³²⁶ Response to SO, Annex C44.

²³²⁷ Response to the Second Letter of Facts, Annex 23.

- (1276) In that regard, the Commission notes that the market investigation showed that contracts may include option clauses. On the demand side, customers that expressed an opinion confirmed that orders (“firm vessels”) may include a legally binding option clauses²³²⁸ under which shipbuilders keep slots free for possible future orders of the same vessels type and size (“sister vessels”) from the same customer.²³²⁹ The duration of such option clauses, depending on the market conditions, may vary from one month up to one year and can be extended.²³³⁰ One broker explained, however, that such option clauses are typically valid for three months and that recently shipbuilders were able to limit them to a shorter period and that if options can be exercised on longer periods, they are more expensive.²³³¹ On the supply side, shipbuilders that expressed an opinion confirmed that orders may include an option clause.²³³² The market investigation showed that option clauses do not indicate that shipowners enjoy a sufficient degree of buyer power for the below reasons.²³³³
- (1277) First, option clauses provide advantages to both shipowners or charterers and shipbuilders. Such a view is shared not only by customers or charterers and shipbuilders but also by brokers.
- (1278) On the one hand, under such clauses, customers that expressed an opinion consider that they enjoy the advantage in protecting themselves from potential rapid changes in the market by agreeing with the shipbuilder the sister vessels’ exact price (which may be even higher than firm vessels’)²³³⁴ and delivery date already when placing their order for firm vessels.²³³⁵ For example, one customer explained that “[t]he customer (the owner) has the benefit that has the time (up to the option [clause] deadline) to explore the shipping market needs, to look for possible time charter opportunities, check possibility for financing of the vessels etc., having the chance to confirm the vessels at a price, payment terms and delivery already [pre]-defined in the option clause [...]”.²³³⁶
- (1279) On the other hand, customers that expressed an opinion consider that shipbuilders enjoy, in addition to remarkable efficiencies and economies of scale and unless the shipowner does not exercise such option, the advantage of retaining the customer at their yard instead of taking the risk of losing the customer to a competing shipbuilder.²³³⁷ For example, one customer explained that the “[...] shipyard has the benefit that gives time to the owner to take decision and possibly confirm the option

²³²⁸ Replies to question 107 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³²⁹ Replies to question 102 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³³⁰ Replies to question 102 of Questionnaire Q8 to Customers [DOC ID: 3241]. See also minutes of the conference call with [...] dated 2 March 2020, paragraph 29. [DOC ID: 2657]

²³³¹ Minutes of the conference call with [...] dated 4 March 2020, paragraph 14. [DOC ID: 2699]

²³³² Replies to question 33 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³³³ Contrary to what is argued by the Notifying Party in the Response to the SO, paragraphs 899-910, the price relationship between optional vessels and firm vessels is relevant to the assessment of buyer power. Were the price of firm vessels influenced by sister ones, it could be an element that shows that option clauses are, at least with respect to this aspect, in favour of customers. This is not however the case as the market investigation showed that an equal number of customers that expressed an opinion have opposite views.

²³³⁴ Replies to questions 103, 103.1 and 103.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³³⁵ Replies to question 102 of Questionnaire Q8 to Customers. [DOC ID: 3241] Moreover, the Commission notes that at paragraph 910 of the Response to the SO, the Notifying Party quotes from the minutes of the call with [...]. The Commission notes that [...] is not an LLNGC customer ([...] has not even purchased a small LNGC let alone LLNGCs) and thus this quote is irrelevant.

²³³⁶ Replies to question 102.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³³⁷ Replies to questions 102 and 102.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

vessels and in case confirmed [it] will be easy for the shipyard to build since sister ships have no additional plan approval stage, have commonality in design and same suppliers”.²³³⁸ Another customer explained that “[...] the yard can optimise their production facility building exact sister vessels as well as obtain discounts from their sub-suppliers ordering larger quantities”.²³³⁹ Another customer added that through these option clauses shipbuilders enjoy “[r]educed design cost because the vessels tend to be identical to firm vessels”.²³⁴⁰ Another customer clarified that if shipbuilders “[...] are working with a big shipowner, they can secure more business as part of the relationship over time. So long as they are appropriately priced the yard will still gain the work, So long as only a percentage of their orderbook is optioned they have the ability to capitalise on any market increase”.²³⁴¹

- (1280) While some shipbuilders consider that such clauses will have a negative impact on e.g. slots, prices and reduce flexibility, some shipbuilders explain that option clauses may have a positive impact. For example, one shipbuilder which has recently built conventional LLNGCs and which considers that option clauses have a negative impact on shipbuilders explained that it “[...] has not signed contracts with option clauses and did so only very rarely in the past. [...] Shipbuilders may agree for option clauses when they are under pressure to secure orders. [...] would consider option clauses only when the customer can link them to concrete transport project in which it considers employing the option vessels and when giving the customer limited time to decide, that is in the same fiscal year as the main order.”²³⁴² Another shipbuilder which has recently built conventional LLNGCs states that “[...] [o]ption clause could have good impact on our business because we could utilise scale merit and could reduce cost”.²³⁴³ Another shipbuilder active in LLNGCs states that [...].²³⁴⁴
- (1281) Brokers interviewed by the Commission seem to be of the same opinion. One broker considers that if option clauses can represent a potential disaster for shipbuilders as shipbuilders bear all the risks, it also states that “[...] shipyards want to encourage series orders as it is more efficient for shipbuilders to spread the design and procurement costs over more vessels”.²³⁴⁵ Another broker confirms that “[c]ustomers benefit where a shipyard builds more than one vessel for them, as they can make savings in supervision costs. Option clauses are not favourable only to the customers, they also favour shipbuilders. Shipyards often use option pricing to entice a client to build a first ship. Shipbuilders have an interest in building more vessels of the same designs because it allows them to spread the preproduction costs such as design, plan approval, and class approval over more vessels”.²³⁴⁶
- (1282) This appears to be confirmed also by one internal document of the Notifying Party, in which the ship marketing department considers the effect of series vessels for LNGCs.²³⁴⁷ [...].²³⁴⁸ [...].²³⁴⁹ [...].²³⁵⁰

²³³⁸ Replies to question 102.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³³⁹ Replies to question 102.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁴⁰ Replies to question 102.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁴¹ Replies to question 102.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁴² Minutes of the conference call with [...] dated 18 February 2020, paragraph 22. [DOC ID: 2081]

²³⁴³ Replies to question 33 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁴⁴ Replies to question 33 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁴⁵ Minutes of the conference call with [...] dated 2 March 2020, paragraph 30. [DOC ID: 2657]

²³⁴⁶ Minutes of the conference call with [...] dated 4 March 2020, paragraphs 15-16. [DOC ID: 2699]

²³⁴⁷ The Notifying Party’s internal documents responsive to RFI 3, “Effect of Series vessels for LNG Carriers” dated 23 September 2014, EU_HHI_0000208-T. [DOC ID: 1445-167]

- (1283) Second, on whether the number of sister vessels influence the price of firm vessels, the market investigation is inconclusive as an equal number of customers that expressed an opinion have opposite views, while one customer observed that it could actually be the other way round.²³⁵¹ A majority of customers that expressed an opinion observed that if, on the one hand, a significant proportion of contracts contain option clauses,²³⁵² such options are exercised very often.²³⁵³ A majority of customers that expressed an opinion stated that they have never experienced that a shipbuilder refused an order because it had to keep slots reserved for other shipbuilders under option clauses.²³⁵⁴
- (1284) Third, a majority of shipbuilders that expressed an opinion stated that they have not refused or postponed the exercise of such option clauses by a customer²³⁵⁵ and that they keep slots available in case options are exercised even if this means rejecting an order.²³⁵⁶ However, on whether such clauses are strictly legally binding, the market investigation is inconclusive. Some shipbuilders state that they are and some shipbuilders state that it depends on the actual terms of the contract.²³⁵⁷
- (1285) Fourth, a majority of shipbuilders that expressed an opinion stated that they have never had to refuse a new order (not being able to bid) because their production slots were kept for potential sister vessels.²³⁵⁸ Contrary to what is argued by the Notifying Party,²³⁵⁹ the Commission has not miscalculated competitors' reply to question 34 of Q10 to Competitors. Question 34 of Q10 to Competitors asked "*Have you ever had to refuse new order (not being able to bid) because your production slots were kept for potential option vessels?*". [...] competitors provided a meaningful response to that question (not [...]). Of those [...], [...] answered no or not applicable, [...] answered yes, and [...] said it may occur. The quotes the Notifying Party refers to in paragraph 904 of the Response to the SO are not relevant with respect to whether shipbuilders had to refuse new order because their production slots were kept for potential option vessels. Rather, these quotes were taken from competitors' reply to question 33 of Q10 to Competitors²³⁶⁰ and from the minutes of the call with [...], which was about the impact of such clauses. Moreover, the Commission notes that at paragraph 910 of the Response to the SO, the Notifying Party quotes from the minutes of the call with [...]. The Commission notes that [...] is not an LLNGC customer ([...] has not even purchased a small LNGC let alone LLNGCs) and thus this quote is irrelevant. In addition, a majority of shipbuilders that expressed an opinion stated that they either do or may regularly accept orders with option clauses

2348 The Notifying Party's internal documents responsive to RFI 3, "Effect of Series vessels for LNG Carriers" dated 23 September 2014, EU_HHI_0000208-T. [DOC ID: 1445-167]

2349 The Notifying Party's internal documents responsive to RFI 3, "Effect of Series vessels for LNG Carriers" dated 23 September 2014, EU_HHI_0000208-T. [DOC ID: 1445-167]

2350 The Notifying Party's internal documents responsive to RFI 3, "Effect of Series vessels for LNG Carriers" dated 23 September 2014, EU_HHI_0000208-T [DOC ID: 1445-167]

2351 Replies to question 104 of Questionnaire Q8 to Customers. [DOC ID: 3241]

2352 Replies to question 105 of Questionnaire Q8 to Customers. [DOC ID: 3241]

2353 Replies to question 106 of Questionnaire Q8 to Customers. [DOC ID: 3241]

2354 Replies to questions 108 and 108.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

2355 Replies to question 37 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

2356 Replies to question 38 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

2357 Replies to question 36 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

2358 Replies to question 34 of Questionnaire Q10 to Competitors. [DOC ID: 3243].

2359 The Response to the SO, paragraph 903.

2360 The question read as follows: "*We [understand] that orders may include an option clause under which a customer reserves the right to order at a later time additional ships at the agreed price. Could you please explain if this understanding is correct? Which impact have option contracts on your business?*"

and that this depends on whether the option plays in favour of the shipbuilder under several factors such as price and profitability, slot, and, call option period.²³⁶¹ For example, one shipbuilder explained that “[...] we could utilise scale merit and reduce cost”.²³⁶²

(1286) Moreover, as explained in the above paragraphs in this Section and contrary to what was argued by the Notifying Party,²³⁶³ replies to questions 33-38 of Questionnaire Q10 to Competitors do not show that options are exclusively in favour of customers.²³⁶⁴ In question 33, the Commission asked shipbuilders whether orders might include option clauses and what type of impact such clauses have on shipbuilders’ business. The Commission notes that [...] shipbuilders expressed a meaningful opinion. Of those [...], [...] confirmed that option clauses are somehow common and that are somehow beneficial to shipbuilders as well, while [...] confirmed that option clauses are somehow common and that somehow represent a risk for the shipbuilder. Of those [...] shipbuilders, only [...] have been active in the LLNGC market ([...] of which have now exited the market). Of these [...] shipbuilder, [...] of them consider that option clauses are somehow common and that are somehow beneficial to shipbuilders, and [...] of them that option clauses are somehow common and that somehow represent a risk for the shipbuilder. The only one of these [...] that is still active, states that “[...] in some cases it can be potential losses, but it can also give some efficiency to take some speci[ification]’s series vessel and visibility to the certain extent for shipbuilders”.²³⁶⁵ In addition, with respect to question 34 of Questionnaire Q10 to Competitors, as explained in the above paragraphs in this Section, the Commission notes that a majority of shipbuilders that expressed an opinion stated that they have never had to refuse a new order (not being able to bid) because their production slots were kept for potential sister vessels.²³⁶⁶ Contrary to what was argued by the Notifying Party,²³⁶⁷ this question is relevant to assess the alleged impact of option clauses exclusively on shipbuilders. Moreover, with respect to questions 35 and 35.1 of Questionnaire Q10 to Competitors, the Commission notes that as explained in the above paragraphs in this Section, a majority of shipbuilders that expressed an opinion stated that they either do or may regularly accept orders with option clauses and that this depends on whether the option plays in favour of the shipbuilder under several factors such as price and profitability, slot and call option period.²³⁶⁸ For example, one shipbuilder explained that “[...] we could utilise scale merit and reduce cost”.²³⁶⁹ With respect to question 36 of Questionnaire Q10 to Competitors, the Commission notes that, as explained in the above paragraphs in this Section, some shipbuilders state that they are legally bound by such clauses and some shipbuilders state that it depends on the actual terms of the contract.²³⁷⁰ Furthermore, with respect to question 37 and 38 of Questionnaire Q10 to Competitors, the Commission notes that, as explained in the above paragraphs in this Section a majority of shipbuilders that expressed an opinion stated that they have not refused or postponed the exercise of such option clauses by

²³⁶¹ Replies to questions 35 and 35.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁶² Replies to question 35.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁶³ The Notifying Party’s Response to the First Letter of Facts, paragraphs 222-226.

²³⁶⁴ Replies to question 33 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁶⁵ Replies to question 33 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁶⁶ Replies to question 34 of Questionnaire Q10 to Competitors. [DOC ID: 3243].

²³⁶⁷ The Notifying Party’s Response to the First Letter of Facts, paragraphs 222-226.

²³⁶⁸ Replies to questions 35 and 35.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁶⁹ Replies to question 35.1 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁷⁰ Replies to question 36 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

a customer²³⁷¹ and that they keep slots available in case options are exercised even if this means rejecting an order.²³⁷²

- (1287) Fifth, contrary to what argued by the Notifying Party,²³⁷³ [...] ability to reserve and then release options does not demonstrate any ability for [...] to exercise any sufficient degree of buyer power.. Indeed, the Commission considers that [...], represents [...] ²³⁷⁴ [...]. Further, the Commission notes that even if a large customer were to derive (quod non) some degree of sufficient bargaining power from their large size, the large size of their order or a sophisticated purchasing strategy, there is no generally convincing reason why other smaller customers or customers placing smaller orders should be also positively affected. It would seem more likely that even assuming that larger customers or customers placing large orders would have a certain power, they would take steps that protect only themselves, if such a possibility existed, from a lessening of competition between suppliers, as these firms may expect to gain from an increase in their rivals' costs after the merger.²³⁷⁵
- (1288) In that regard, the Commission notes that in the Response to the Second Letter of Facts²³⁷⁶, the Notifying Party argues that option contracts which are negotiated ahead of demand (i.e. ex-ante) provide buyers with significant advantages. Powerful buyers would use option contracts to (i) allow buyers to hedge the risk of rising costs of inputs used in building LLNGCs and (ii) allow buyers to negotiate the prices down at the moment of exercising the option. Given that large buyers would often reserve more LLNGC slots than they will actually require, these contracts lead to overcapacity in the market, which is to the benefit of all LLNGC buyers.²³⁷⁷ Thus, option contracts would strengthen competition among shipbuilders when demand materialises (i.e. ex-post) and the buyers decide whether to exercise their options. In case demand is low ex-post and some of the options are not exercised, the reserved capacity becomes unused and exerts significant downward pressure on prices that may have to fall below those specified in the option contracts. In case demand is high ex-post, all options are exercised but shipbuilders cannot benefit from the tight supply-demand balance because the options contracts entered ex ante constrain their prices.²³⁷⁸ The expansion of capacity is likely to benefit smaller buyers as well since with some probability the powerful buyer will not find it optimal to exercise all its options.²³⁷⁹
- (1289) The Commission notes that in order to substantiate these claims, the Notifying Party provides in Annex 25 to the Response to the Second Letter of Facts a stylized model to study the economic implications of option contracts and further explanations in Annex 24. In the stylized model that aims to study the economic implications of option contracts,²³⁸⁰ one buyer is dealing with two sellers. It is assumed that building capacity is costly and that the incremental cost of additional capacity increases with the amount of capacity. In a first contractual scenario, the sellers build capacity ahead of demand (ex ante) and then compete for the buyer's demand when this

²³⁷¹ Replies to question 37 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁷² Replies to question 38 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁷³ The Notifying Party's reply to question 29 of RFI 67.

²³⁷⁴ See paragraphs (607), (638) and (668) of this decision.

²³⁷⁵ Horizontal Merger Guidelines, paragraph 65.

²³⁷⁶ Response to the Second Letter of Facts, paragraphs 208-220.

²³⁷⁷ Response to the Second Letter of Facts, paragraph 208.

²³⁷⁸ Response to the Second Letter of Facts, Annex 24, paragraph 1.5.

²³⁷⁹ Response to the Second Letter of Facts, Annex 24, paragraph 3.2 b.

²³⁸⁰ Response to the Second Letter of Facts, paragraphs 214-217 and Annex 25.

materialises (ex post). In a second contractual scenario, the buyer offers option contracts ex ante specifying both the capacity the seller must build and the price at which it will buy any quantity up to that capacity ex post. The seller has two alternatives: (i) it accepts the terms of the option contract and builds the capacity the buyer requests or (ii) it rejects them and then it loses all business with that buyer. Thus, in the model the sellers are compelled to build more capacity than they would do with ex-post contract when demand materializes. Furthermore, the Notifying Party concludes from the models that option contracts do not result in exclusivity; instead, it is more profitable for the buyer to deal with several suppliers.

- (1290) The Commission also notes that the Notifying Party argues further that the [...] reservation of [...] LLNGC slots in [...] would illustrate both the advantages that option contracts create for the buyer and the effect of such contracts on the market overall. The ability of [...] to reserve and then release slots under the reservation agreement to strategically time its orders for LLNGCs would demonstrate its significant buyer power because the non-exercise of options would cause significant uncertainty and costs for shipbuilders.²³⁸¹
- (1291) The Commission notes that the stylized model submitted by the Notifying Party rests on a number of simplifying assumptions on the nature of the LLNGC market and of the negotiations that is not supported by market evidence. First, the economic model uses the simplifying, but unrealistic, assumption that the market consists of one buyer and two manufacturers.²³⁸² Furthermore, without including other buyers in the model, the Notifying Party draws the conclusion that the potential expansion of capacity due to option contracts might benefit smaller buyers as well since with some probability the powerful buyer will not find it optimal to exercise all its options.²³⁸³ Second, the model assumes that the contract between the manufacturer and the buyer specifies the capacity that the manufacturer has to install and the price that the buyer has to pay if the option becomes exercised.²³⁸⁴ The Commission notes that the Notifying Party has not substantiated this assumption with market evidence. [Parties' business secrets].²³⁸⁵ Third, the model relies on the unrealistic assumption that the final price is already fixed in the option contract and thus there is no space for price negotiations when the option is exercised. The Commission notes that this is in contradiction with the reasoning provided by the Notifying Party with regard to scope for price renegotiations when exercising the option related to the significant [...] order.²³⁸⁶
- (1292) In light of the above, the Commission considers that option clauses are not exclusively in favour of customers and that, for this reason, they do not show that customers would have the ability or incentive to exert a sufficient degree of buyer power in the LLNGC market.

²³⁸¹ Response to the Second Letter of Facts, paragraphs 218-220.

²³⁸² Response to the Second Letter of Facts, Annex 25, p. 1.

²³⁸³ Response to the Second Letter of Facts, Annex 24, paragraph 1.5.

²³⁸⁴ Response to the Second Letter of Facts, Annex 25, p. 2.

²³⁸⁵ HHI DOA and DSME DOA, submitted in Response to RFI 45, Q3.1 and Q3.2.

²³⁸⁶ [Parties' business secrets].

g) *Compensation clauses*

(1293) The Commission notes that shipbuilders can also manage to push for clauses providing shipbuilders a compensation for the construction costs if the customer's decision falls through.²³⁸⁷ [Parties' business secrets].^{2388 2389}

h) *Financial and non-financial incentives*

(1294) The Commission considers that the market investigation showed that there is no indication that financial or non-financial incentives would confer a sufficient degree of buyer power to customers for the below reasons.

(1295) First, although nearly all customers that expressed an opinion confirmed that price plays an important role in the selection of the shipbuilder,²³⁹⁰ nearly all customers that expressed an opinion specified that they do not systematically select the cheapest one²³⁹¹ and that, as outlined in **Section 8.3.2.2 (B)**, **Section 8.3.4.2 (B)**, **Section 8.3.4.3 (B)** and **Section 8.3.8.3**, other criteria such as track record, technical specifications (e.g. boil-off rate) and technologies, delivery time²³⁹² play a significant role. For example one customer clarified that "*[w]e always look for the lowest overall cost. Placing an order with the supplier who offered the cheapest price might in some circumstances result in other additional costs being incurred. For example, [we] would also consider standards of health and safety or quality control at the shipyard and might need to incur the cost of additional supervision.*"²³⁹³

(1296) Second, a majority of customers that expressed an opinion confirmed that, generally speaking, there are incentives for a customer to place orders with the same shipbuilder such as lower administrative or oversight costs, slots allocation priority, better prices, priority to innovative technologies, establishment of good cooperation between the customer and the shipyard, lower firm vessel price due to lower GTT royalties that the shipbuilder will have to pay for sister vessels and even lower prices from OEMs that are then passed on from the shipbuilder to the customer.²³⁹⁴ A majority of customers that expressed an opinion stated that they are either not aware or they have not been granted any loyalty rebate or other incentives²³⁹⁵ but that, as a general rule, the unitary price of a ship depends on the number of ships on order with a single shipbuilder²³⁹⁶ although some customers clarify that this is true up to a certain extent and that it is due to the lower royalties that shipbuilders will have to pay to GTT and to OEMs' discounts.²³⁹⁷

(1297) Third, a majority of shipbuilders that expressed an opinion explained that their customers require refund guarantees,²³⁹⁸ that, although it did occur in the past that shipbuilders were refused a refund guarantee,²³⁹⁹ shipbuilders did not happen to see their competitiveness in winning orders reduced because of the terms (such as a high

²³⁸⁷ The Notifying Party's reply to question 4 of RFI 41.

²³⁸⁸ The Notifying Party's reply to question 4 of RFI 41.

²³⁸⁹ The Notifying Party's reply to question 4 of RFI 41.

²³⁹⁰ Replies to question 109 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁹¹ Replies to question 109.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁹² Replies to question 109.2 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁹³ Replies to question 109.1 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁹⁴ Replies to question 110 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁹⁵ Replies to questions 110.1 and 112 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁹⁶ Replies to question 111 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²³⁹⁷ Replies to question 111 of Questionnaire Q8 to Customers [DOC ID: 3241]

²³⁹⁸ Replies to question 41 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²³⁹⁹ Replies to question 42 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

rate) of the refund guarantee they obtained²⁴⁰⁰ and that there are shipbuilders that can offer better price terms because of preferential refund guarantee's terms.²⁴⁰¹ For example, one shipbuilder states that "[...] [i]ts customers usually require refund guarantees that are not difficult to get. [...] explains that the rate of refund guarantees depends on the credit rate of the shipbuilder. The shipbuilder will try to include this cost in the price of the vessel."²⁴⁰²

- (1298) Brokers interviewed by the Commission confirmed that the majority of orders are accompanied by a refund guarantee.²⁴⁰³ If, however, during and after the shipbuilding crisis there were orders failing due to the impossibility for shipbuilders to secure refund guarantees for their customers²⁴⁰⁴ one broker clarified that "[...] since then it became very rare for refund guarantees to be refused because customers are careful to place orders only with financially sound shipbuilders. Customers today generally are unlikely to discuss orders with shipbuilders to whom a refund guarantee may not be issued."²⁴⁰⁵
- (1299) Fourth, a majority of shipbuilders that expressed an opinion explained that they finance the construction of their vessels through their normal working capital²⁴⁰⁶ or that, in case they raise project-specific financing, the cost would not be split between them and the customer.²⁴⁰⁷
- (1300) In light of the above, the Commission considers that the market investigation showed that there is no indication that financial or non-financial incentives would confer a sufficient degree of buyer power to customers.

i) No customer switching and no multisourcing

- (1301) The Commission considers that, as explained in **paragraph (1235)**, switching and multisourcing are not accurate terms to describe the market dynamics as each project may have different requirements. First, state-sponsored projects may require a shipowner to order a locally-built LNGCs. Second, the charterer or the customer may have very specific requirements or preferences. Third, a shipbuilder may not be able to accommodate a big order for slot availability issues or for diversification. Fourth, a shipbuilder may not be in the condition to accommodate certain very specific and project-related technical specifications or just not be able to meet the customer's track record requirement. Moreover, customers are not active in a downstream markets in which they have continuous production of a given good for which they need constant input of another homogeneous good which, for security of supply, they multisource. For these reasons, the Commission considers that the mere fact that a customer procures from different suppliers does not necessarily amount to switching nor multisourcing.

²⁴⁰⁰ Replies to question 43 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²⁴⁰¹ Replies to question 44 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

²⁴⁰² Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 16. [DOC ID: 2780]

²⁴⁰³ Minutes of the conference call with [...] dated 2 March 2020, paragraph 31. [DOC ID: 2657] Minutes of conference call with [...] dated 4 March 2020, paragraph 17. [DOC ID: 2699]

²⁴⁰⁴ Minutes of the conference call with [...] dated 2 March 2020, paragraph 31. [DOC ID: 2657] Minutes of the conference call with [...] dated 4 March 2020, paragraph 17. [DOC ID: 2699]

²⁴⁰⁵ Minutes of the conference call with [...] dated 4 March 2020, paragraph 17. [DOC ID: 2699]

²⁴⁰⁶ Replies to question 39 of Questionnaire Q10 to Competitors. [DOC ID: 3243] Minutes of the conference calls with [...] dated 18 February 2020 and 24 February 2020, paragraph 16. [DOC ID: 2780]

²⁴⁰⁷ Replies to question 40 of Questionnaire Q10 to Competitors. [DOC ID: 3243]

- (1302) In any event, the Commission found that ordering from a different shipbuilder has some costs and ordering from a different shipbuilder or ordering from more than one shipbuilder at a time is in any event limited to those players with a track record in the market.
- (1303) Indeed, some customers that responded to the market investigation stated that, in case post-Transaction, the Parties raised the price of LNGCs by 5%, they would either (i) just absorb the price or (ii) absorb the price increase and pass it onto their customers, (iii) not order the ship at all or (iv) that they would order from another supplier, while the majority of customers that expressed an opinion gave alternative replies.²⁴⁰⁸ For example, one of those customers that gave alternative replies stated that it “[...] would switch to SHI provided SHI’s price was cheaper. Otherwise, we would absorb the cost and hope it could be passed on to customers”²⁴⁰⁹ and another customer stated that it “[...] would expect shipowners that are customers of the shipbuilders to absorb the price and attempt to pass it on to time charterers through the charter hire rate, which would be subject to commercial negotiation.”²⁴¹⁰ On the other hand, some customers that responded to the market investigation stated that, in case the Parties were to raise LNGC prices by 5-10% post-Transaction, they would either (i) keep ordering from the merged entity or (ii) turn to other suppliers, while, as acknowledged by the Notifying Party in its Response to the First Letter of Facts²⁴¹¹ but at the same time contested in its Response to the Second Letter of Facts,²⁴¹² the majority of customers that expressed an opinion gave alternative replies.²⁴¹³ One of those customers that replied that they would turn to other suppliers stated that “[...] these may then quickly fill up their capacity [...]”.²⁴¹⁴ Likewise, two of those customers stated that HHI, DSME and SHI are the market leaders in LLNGCs.²⁴¹⁵
- (1304) Moreover, as explained in **Section 8.3.4** and contrary to what was argued by the Notifying Party in its Response to the First Letter of Facts,²⁴¹⁶ the Commission considers that customers will only have SHI as a credible alternative with both a quantitative and qualitative track record for membrane LLNGCs post-Transaction and, to an insufficient extent, CSSC. This is also confirmed by several customers that expressed an opinion in the market investigation.²⁴¹⁷ In its Response to the Second Letter of Facts,²⁴¹⁸ the Notifying Party contests the Commission’s assessment of questions 124 and 126 of Questionnaire Q8 to Customers. In particular, on customers’ reply to question 124 to Questionnaire Q8 to Customers, the Notifying Party argues that out of [...] customers who provided clear answers, [...] replied that they would “switch to, amongst others, CSSC including Hudong or Chinese shipbuilders”. On customers’ reply to question 126 of Questionnaire Q8 to Customers, the Notifying Party argued that out of the [...] customers responses, the Commission would have cherry-picked the only [...] responses which refer to CSSC

²⁴⁰⁸ Replies to question 53 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²⁴⁰⁹ Replies to question 53.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²⁴¹⁰ Replies to question 53.1 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²⁴¹¹ Response to the First Letter of Facts, paragraphs 220-221.

²⁴¹² Response to the Second Letter of Facts, paragraph 238.

²⁴¹³ Replies to questions 122 and 123 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁴¹⁴ Replies to questions 122 and 123 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁴¹⁵ [...].

²⁴¹⁶ Response to the First Letter of Facts, paragraphs 220-221.

²⁴¹⁷ Replies to questions 124 and 126 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁴¹⁸ Response to the Second Letter of Facts, paragraph 239.

as a weaker competitor. The Commission reiterates that based on the above assessment of customers' reply to questions 124 and 126 of Questionnaire Q8 to Customers, customers will only have SHI as a credible alternative with both a quantitative and qualitative track record for membrane LLNGCs post-Transaction and, to a not sufficiently or significant extent, CSSC.

- (1305) However, previous customer's experience with a given shipbuilder and a shipbuilder's track record play a crucial role when placing an order. Nearly all customers that expressed an opinion indicated that ordering LNGCs from a shipbuilder from whom they did not order before would involve costs and additional time (mostly because they will have to negotiate and agree new contract terms and conduct a safety audit of the yard).²⁴¹⁹
- (1306) More generally, a customer interviewed by the Commission explained that *"[i]n practice, there is a perceived customer benefit to remain loyal to one shipyard and also shipyards on their side make efforts to keep past customers. This allows the shipyard to gradually build expertise with the customer and be familiar with customer's requirements saving both sides time and costs. Another benefit shipyards offer to returning customers is slot availability on the basis of a letter of intent offered on preferred terms as far as the availability is concerned rather than binding order. So, although theoretically it may not be difficult to switch, there are commercial incentives not to do so."*²⁴²⁰
- (1307) More specifically, some experienced customers interviewed by the Commission indicated that possibilities to order from a different shipbuilder are limited to shipbuilders with a solid track record. For example, one customer interviewed by the Commission explained that a customer willing to order from a different shipbuilder with not enough track record would need to send a larger site team to supervise the building process: *"switching to a Chinese shipbuilder would be more difficult, as a Chinese shipyard would require more significant supervision from [us]. [We] normally [have] a team of about [...] people on site at the shipyard and [we] estimates that switching to a Chinese yard would require to double the team up to [...] people on site at the shipyard to follow up the works. That is very burdensome for a company like [us]. However, with the right price, quality and schedule it is very doable."*²⁴²¹ Another customer that has only worked with the Korean shipbuilders and interviewed by the Commission stated that *"[...] it is possible to switch between shipbuilders of LNG vessels, in particular those with which it has already experience and who have solid track record."*²⁴²² The same customer specified that *"[...] [i]t is more difficult to switch when the customer is looking for more advanced vessels in which case it is really only the Koreans who can be considered. With regard to technological improvements (size, propulsion and containment system), especially for LNG vessels, the future is leaning more for the Koreans."*²⁴²³
- (1308) If, on the one hand, the market investigation results indicated that the majority of customers that expressed an opinion declared that they place orders from different shipbuilder in the same year, on the other hand, the supply side of conventional LLNGCs (even more in the large FSRUs segment) market is rather concentrated and, given that CSSC does not currently exert a sufficient competitive constraint and that

²⁴¹⁹ Replies to question 62 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²⁴²⁰ Minutes of the conference call with [...] dated 2 July 2019, paragraph 7. [DOC ID: 1328]

²⁴²¹ Minutes of the conference call with [...] dated 28 June 2019, paragraph 14. [DOC ID: 190]

²⁴²² Minutes of the conference call with [...] dated 3 July 2019, paragraph 13. [DOC ID: 300]

²⁴²³ Minutes of the conference call with [...] dated 3 July 2019, paragraph 14. [DOC ID: 300]

no Japanese shipbuilder exert or is likely to exert competitive pressure on the Parties to significantly constrain them (this will not change post-Transaction), the Transaction would leave customers with very limited alternatives.²⁴²⁴

- (1309) In light of the above, the Commission has analysed the list of orders placed by the Parties’ customers in membrane LLNGCs in the 2011-2021 (up to 30 September 2021) period and notes the following aspects.
- (1310) First, over a total of 27 customers, there have been 21 customers that placed orders from a different shipbuilder from the one they ordered before at least once over the years. Out of those 21 customers, only two concerned orders placed from a South Korean shipbuilder to CSSC,²⁴²⁵ [...] ²⁴²⁶ [...]. As explained by [...], “[...] *Chinese state-sponsored LNG projects may require a shipowner or a charterer to use Chinese-built vessels and to therefore order from Chinese shipbuilders, which, absent such requirement and depending on the project’s specificities, may even not be invited to tender.*”²⁴²⁷ All the other cases consist of customers either placing orders from one of the Parties only or from one South Korean to another South Korean shipbuilder. More specifically, 14 consist of customers that happened to place orders from SHI to either HHI or DSME or vice versa ([...]).²⁴²⁸
- (1311) Second, as shown by **Table 51** below, over a total of [...] customers (representing [...] orders)²⁴²⁹ there have been [...] customers (representing [...] orders) that split their yearly order for two shipbuilders (either HHI, DSME or SHI) at least once over the years.²⁴³⁰ Of those [...] customers, only [...] did so more than once and only [...] more than twice, i.e. three times. Of those [...] orders, only [...] consisted of large orders, namely between [...] vessels.

Table 51 List of orders of the Parties’ customers in LLNGCs in the 2011-2021 (up to 30 September 2021) period²⁴³¹

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
[...]	[...]	[...]	[...]	[...]	-	[...]	[...]	[...]	[...]	[...]	-
	[...]	[...]	[...]	[...]	-	[...]	[...]	[...]	[...]	[...]	-
[...]	[...]	[...]	-		-	[...]	-	-	[...]	-	[...]
	[...]	[...]	-	-	-	[...]	-	-	[...]	-	[...]
[...]	[...]		[...]	[...]	[...]	-	-	[...]	[...]	-	-

²⁴²⁴ Replies to question 54 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²⁴²⁵ [...].

²⁴²⁶ Minutes of the conference call with [...] dated 7 February 2020, paragraph 5. [DOC ID: 2357]

²⁴²⁷ [...] reply to question 1a of Commission RFI to [...] dated 7 May 2020. [DOC ID: 3150]

²⁴²⁸ For the purpose of this Section, the Commission considers [...] SHI-Zvezda orders as placed at SHI, given that SHI-Zvezda is totally dependent on SHI’s know-how and technology. Moreover, as explained in **Section 8.3.8.3 (B)**, the business rationale of the SHI-Zvezda cooperation lies in promotion of South Korean’s shipbuilding capabilities in a jurisdiction which discourages or even prohibits ordering from non-domestic shipbuilders.

²⁴²⁹ For the purpose of this there as many orders by customers as many times a customer ordered a batch of LLNGCs each year (regardless of from how many shipbuilders) across the years. [Parties’ business secrets].

²⁴³⁰ [Parties’ business secrets].

²⁴³¹ [Parties’ business secrets].

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	[...]		[...]	[...]	[...]	-	-	[...]	[...]	-	-
[...]	[...] ²⁴³²	[...]	-	[...]	[...]	-	[...]	-	-	-	-
	[...]	[...]	-	[...]	[...]	-	[...]	-	-	-	-
[...]	[...]	[...]	-	-	[...]	-	-	-	-	-	-
	[...]	[...]	-	-	[...]	-	-	-	-	-	-
[...]	-	-	[...]	-	-	-	-	-	-	-	-
	-	-	[...]	-	-	-	-	-	-	-	-
[...]	[...]	-	[...]	[...]	-	[...]	-	[...]	-	-	-
	[...]	-	[...]	[...]	-	[...]	-	[...]	-	-	-
[...]	-	-	-	[...]	-	-	[...]	[...]	[...]	[...]	[...]
	-	-	-	[...]	-	-	[...]	[...]	[...]	[...]	[...]
[...]	-	[...]	[...]	[...] ²⁴³³	[...]	-	-	-	-	-	-
	-	[...]	[...]	[...]	[...]	-	-	-	-	-	-
[...]	-	-	[...]	-	[...]	[...]	-	-	[...]	-	-
	-	-	[...]	-	[...]	[...]	-	-	[...]	-	-
[...]	-	-	-	-	-	-	-	[...]	[...]	-	[...]
	-	-	-	-	-	-	-	[...]	[...]	-	[...]
[...]	-	-	-	[...]	-	-	-	[...]	[...]	-	-
	-	-	-	[...]	-	-	-	[...]	[...]	-	-
[...]	[...]	[...]	-	[...]	[...]	-	-	[...]	[...]	[...] ²⁴³⁴	[...]
	[...]	[...]	-	[...]	[...]	-	-	[...]	[...]	[...]	[...]
[...]	[...]	-	-	-	-	-	-	[...]	-	-	-
	[...]	-	-	-	-	-	-	[...]	-	-	-

²⁴³² The Commission notes that, even if the FPSO FSRU ordered by [...] from [...] were included in the counting, this would not materially change the Commission’s assessment.

²⁴³³ [Parties’ business secrets].

²⁴³⁴ As explained in **paragraphs (1038) and (1048)**, 10 Arc7 LLNGCs were also ordered from [...] in 2020 by [...]. For the reasons outlined in this Section, however, the Commission’s assessment would not change.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
[...]	[...]	-	-	-	-	-	-	[...]	-	-	-
	[...]	-	-	-	-	-	-	[...]	-	-	-
[...] ²⁴³⁵	[...]	-	-	[...]	[...]	-	[...]	[...]	[...]	[...]	[...]
	[...]	-	-	[...]	[...]	-	[...]	[...]	[...]	[...]	[...]
[...]	-	-	-	-	-	-	-	[...]	[...]	-	-
	-	-	-	-	-	-	-	[...]	[...]	-	-
[...]	-	-	-	-	[...]	-	-	-	[...]	[...]	-
	-	-	-	-	[...]	-	-	-	[...]	[...]	-
[...]	[...]	-	-	-	-	-	-	[...]	-	-	-
	[...]	-	-	-	-	-	-	[...]	-	-	-
[...]	-	-	[...]	[...]	-	-	-	-	[...]	-	-
	-	-	[...]	[...]	-	-	-	-	[...]	-	-
[...]	-	-	-	[...]	[...]	-	-	-	-	-	-
	-	-	-	[...]	[...]	-	-	-	-	-	-
[...]	-	-	-	-	[...]	-	-	-	-	-	[...]
	-	-	-	-	[...]	-	-	-	-	-	[...]
[...]	-	-	-	-	-	-	-	-	-	[...]	[...]
	-	-	-	-	-	-	-	-	-	[...]	[...]
[...]	-	-	-	-	-	-	-	-	[...]	-	[...]
	-	-	-	-	-	-	-	-	[...]	-	[...]
[...]	-	[...]	-	-	-	-	-	-	[...]	-	-
	-	[...]	-	-	-	-	-	-	[...]	-	-

Source: The table above has been prepared by the Commission on the basis of Annex Q16 of RFI 67. For the purpose of this table only (i) the Parties' customers that placed more than one order across at least two years unless they ordered from more than one shipbuilder in the same year, (ii) only membrane LLNGCs have been included in the counting.

(1312) Third, according to the Horizontal Merger Guidelines it is not sufficient that buyer power exists prior to the merger: it must also exist and remain effective following the

²⁴³⁵ As explained in one of the internal documents referred to in Section 8.3.4.3, [...] and/or [...] placed an order of membrane LLNGCs from [...] in [...]. However, such order was cancelled.

merger. This is because a merger of two suppliers may reduce buyer power if it thereby removes a credible alternative.²⁴³⁶ In this case, the Transaction eliminates one of the very few alternatives to HHI for the building of membrane LLNGCs. It also removes one of the three suppliers of LLNGCs with the highest track record. Against this background it is unlikely that customers would benefit of any countervailing buyer power post-Transaction.

- (1313) Indeed, as explained in **Sections 8.3.2.2 (A), 8.3.4.2, 8.3.4.3 and 8.3.8**, track record plays a significant role in a shipbuilder selection. For example, one customer which has ordered from HHI from [...], explained that only shipbuilders with a solid track record may be, under certain conditions, considered as an alternative.²⁴³⁷ [...].²⁴³⁸ For this reason, the Commission considers that customers will only have SHI as a credible alternative with both a quantitative and qualitative track record for membrane LLNGCs post-Transaction and, to a not sufficiently significant extent, CSSC. This is also confirmed by several customers that expressed an opinion in the market investigation²⁴³⁹ [Parties' internal document].^{2440 2441}
- (1314) Moreover, as explained in **Section 8.3.4.1 (B) b) and c), Section 8.3.4.2 (B) n) and o) and Section 8.3.7.2 (B) g)** the Commission notes that post-Transaction, SHI and CSSC will not only lack the ability and incentive to defeat a price increase of the Parties post-Transaction but may well have the ability and the incentive to follow a potential price increase of the Parties instead of lowering their prices.
- (1315) Indeed, in such a concentrated market, the Commission considers that SHI and CSSC may have the ability and incentive to follow a potential price increase of the Parties instead of lowering their prices. As explained by a customer, *"[a]s it happens in every industry in which track record plays a crucial role, those with the highest track record will tend to not perceive other shipbuilders as genuine rivals since international customers will tend to consider other shipbuilders as last resort. Other shipbuilders are aware of this and will tend to charge a even higher price". [...]* *[We] [...] [expect] the price of large LNG carriers to go up after the proposed transaction in Korea as well as in China"*.²⁴⁴² Another customer, [...],²⁴⁴³ stated that it is *"[...] very concerned about the proposed transaction as [it] expect[s] that prices of large conventional LNG carriers will go up as a consequence of the reduction of the number of Korean shipbuilders, which are the real competitors in large LNG carriers, from three to two"*.²⁴⁴⁴
- (1316) This is also confirmed by another customer, which stated that *"[t]he proposed transaction may create an oligopoly (reduction from three Korean market leaders in LNG carriers to two with dominant role) and quite likely have an effect on increasing prices. Usually if the price of an LNG conventional carrier is increased by one shipyard, the others will probably not undercut it but they will follow as well most likely trying to take advantage of the situation since shipyards claim that in the*

²⁴³⁶ Horizontal Merger Guidelines, paragraph 67.

²⁴³⁷ Minutes of the conference call with [...] dated 6 February 2020, paragraph 11. [DOC ID: 2782]

²⁴³⁸ Minutes of the conference call with [...] dated 6 February 2020, paragraph 16. [DOC ID: 1730]

²⁴³⁹ Replies to questions 124 and 126 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁴⁴⁰ DSME's internal documents responsive to RFI 31, "Strategic Planning Division Weekly Information Report", page 5, dated 24 May 2019, DSME-01063617(ENG). [DOC ID: 2325-2]

²⁴⁴¹ DSME's internal documents responsive to RFI 31, DSME email correspondence detailing meeting with London broker, pages 1-2, dated 25 September 2019, DSME-01076632. [DOC ID: 3064-82]

²⁴⁴² Minutes of the conference call with [...] dated 26 February 2020, paragraph 14. [DOC ID: 2900]

²⁴⁴³ Minutes of the conference call with [...] dated 25 February 2020, paragraph 4. [DOC ID: 2350]

²⁴⁴⁴ Minutes of the conference call with [...] dated 25 February 2020, paragraph 16. [DOC ID: 2350]

recent past were not able to make any good profits. This will likely be reflected in an increase in shipbuilders' margins as well."²⁴⁴⁵ Another customer explains that "[...] ordering from a shipbuilder it has never ordered before is not always straightforward and mostly depends on whether [...] has already worked with a given shipbuilder in the past. Ordering from a shipbuilder from which you have never ordered before entails a certain due diligence process that needs to be carried out and, when it comes to LNG carriers, experience and track-record are important when deciding from which shipbuilder to place a given order."²⁴⁴⁶ Another customer explains that "[...] the merged entity would end up controlling roughly 60% of the market for LNG carriers and for the market for FSRUs; second, after the merger, [...] will be in a much weaker position during contract negotiations; third, after the merger, there will be only one credible alternative, i.e. Samsung; fourth, vessels price are likely to increase after the merger [...]"²⁴⁴⁷

(1317) [Parties' internal document].²⁴⁴⁸

(1318) In light of the above, of the fact that the demand side of the market is relatively fragmented while the supply side very concentrated and of the fact that, as explained in **Section 8.3.7** demand for LLNGCs is expected to increase, the Commission considers that customers would be unlikely to defer orders in case of a post-Transaction price increase and more likely to secure a slot. This is shown by speculative orders that are made in periods of increasing demand and that are made from shipbuilders with a strong track record. [...].²⁴⁴⁹ For example, as described in one industry report referring to 2018 and 2019, which represented years with very high orders, [...].²⁴⁵⁰ [...].²⁴⁵¹

(1319) Further, the Commission considers that a customer when considering whether or not to defer an order will always face a trade-off. Waiting for a possible better price may carry the cost of losing business opportunities in the downstream shipping industry and therefore it cannot be assumed that customers of shipbuilders would always be in the position to defer orders. This is especially true when newbuild LLNGCs are ordered in relation to new LNG projects that, when they come online, they necessarily need to have the LLNGCs in place to deliver their production.

j) *No evidence of sponsored entry in the past or likely sponsored entry in the near future*

(1320) As outlined in **Sections 8.3.8.3 (A) and (B)** and contrary to what was argued by the Notifying Party,²⁴⁵² the Commission considers that there has been no sponsored genuine autonomous and credible entrant in the market for LLNGCs in the past. Contrary to what is argued by the Notifying Party in its Response to the Second Letter of Facts,²⁴⁵³ the Commission considers, for the reasons explained in

²⁴⁴⁵ Minutes of the conference call with [...] dated 17 February 2020, paragraphs 8-9. [DOC ID: 2958]

²⁴⁴⁶ Minutes of the conference call with [...] dated 17 February 2020, paragraph 7. [DOC ID: 2609]

²⁴⁴⁷ Minutes of the conference call with [...] dated 19 February 2020, paragraph 8. [DOC ID: 2486]

²⁴⁴⁸ The Notifying Party's 5.4 documents, "KDB-related" dated 2 August 2018, slide 14, Report related to KDB, Form CO, Annex 5.4.6.

²⁴⁴⁹ Minutes of the conference call with [...] dated 6 February 2020, paragraph 15. [DOC ID: 1730]

²⁴⁵⁰ The Notifying Party's reply to question 2 of RFI 36, Annex Q2 - Danish Ship Finance, "Shipping Market Review", December 2019, page 68.

²⁴⁵¹ Minutes of the conference call with [...] dated 24 February 2020, paragraph 10. [DOC ID: 2663]

²⁴⁵² Response to the First Letter of Facts, paragraphs 227-228. See also Response to the Second Letter of Facts, paragraphs 246-249.

²⁴⁵³ Response to the Second Letter of Facts, paragraphs 248-249.

Section 8.3.8.3 (B) c), that the SHI-Zvezda case can be considered neither as an example of vertical integration of a customer nor as an example of sponsored autonomous entrant, given that it is totally dependent on SHI’s know-how and technology.

- (1321) Moreover, as explained in **Section 8.3.8.3 (C)**, the Commission has not found evidence of a likely, timely and sufficient entry (being it or not the result of vertical integration or a sponsored entry) in the market for LLNGCs in the near future. This is confirmed by a broker interviewed by the Commission, which, although it considers that shipowners currently enjoy a relative power, stated that “[...] *it would be difficult for ship owners to sponsor the entry of a completely new entrant as this would require big investments. Customers could support entry of existing shipbuilders into a new vessel type, provided that the vessel is discounted properly for the risk. For example, [...] was very supportive of DSME when it entered LNG in the late '90.*”²⁴⁵⁴ However, the same broker clarified that “[...] *a shipowner that is pursuing an order for a very large vessel is unlikely to trust a shipbuilder with no specific track record. [...] Also, it depends what type of ship the yard is going from and to. To go up the value chain from a simple bulker to an LNG ship would be difficult. To go from an LNG ship to bulkers would not. It also depends on what competition and existing experience there is elsewhere. For very large vessels ship owners give more importance to quality and as customers do not want to take the technical risk of failure of the vessel and they are willing to pay a premium for experience. [...]*”²⁴⁵⁵
- (1322) This is also confirmed by one [...], interviewed by the Commission: “[*we are*] *not considering building conventional large LNG carriers in-house or in a [domestic] yard [...]. This is because the domestic yard [...] currently does not have the capabilities to produce large LNG vessels ([...]) and acquiring this would require significant expansion works and such works are not feasible in the current priorities [...] in terms of construction projects. Further, [...] there are constraints related to the workforce as shipbuilding activities are labour intensive and currently the supply of labour in [our country] is fairly limited. Further, to be able to build in-house, [we] would also have to attract a significant number of skilled labour force from abroad. [We have] not considered sponsoring any potential brand new entrant in the market for large LNG carriers.*”²⁴⁵⁶
- (1323) The Commission notes that the examples of alleged Chinese-sponsored entries are, if any, entries in the small LNGC market and thus irrelevant for the LLNGC market.²⁴⁵⁷ The Commission also notes that, contrary to what is argued by the Notifying Party in its Response to the Second Letter of Facts,²⁴⁵⁸ CSSC does not represent an example of customer-sponsored entry in the LLNGC market. As explained in **Section 8.3.8.3 (A) a)**, [...]. The Notifying Party’s argument pursuant to which CSSC would represent an example of customer-sponsored entry just because it received orders from domestic customers is immaterial. [...]²⁴⁵⁹, the Commission notes that the Notifying Party brings no evidence that such shipyard intends or is likely to expand in a timely and sufficient manner in the LLNGC market.

²⁴⁵⁴ Minutes of the conference call with [...] dated 2 March 2020, paragraph 8. [DOC ID: 2657]

²⁴⁵⁵ Minutes of the conference call with [...] dated 2 March 2020, paragraph 9. [DOC ID: 2657]

²⁴⁵⁶ Minutes of the conference call with [...] dated 25 February 2020, paragraph 12. [DOC ID: 2350]

²⁴⁵⁷ Response to the SO, paragraphs 890-897.

²⁴⁵⁸ Response to the Second Letter of Facts, paragraph 246.

²⁴⁵⁹ Response to the SO, paragraphs 890-897.

(1324) For the reasons outlined above and in **Section 8.3.8** the Commission considers that it would be unlikely that a customer could sponsor any type of entry, being it a greenfield entry or entry of a shipbuilder/shipyard already active in other vessel types into the market for LLNGCs, especially with respect to membrane LLNGCs.

8.3.9.3. Conclusions

(1325) Therefore, the Commission considers that customers would have neither the ability nor the incentive to exert a sufficient degree of countervailing buyer power to constrain the merged entity and that post-Transaction customers' negotiating position will worsen, thereby allowing the merged entity to act to an appreciable extent independently in the LLNGC market and in the large FSRUs segment post-Transaction. This contributes to the finding of the creation of a dominant position by the merged entity post-Transaction.

9. CONCLUSIONS: INCOMPATIBILITY WITH THE INTERNAL MARKET

(1326) For the reasons set out in **Section 8**, and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition as a result of the creation of a dominant position on the market for the construction of LLNGCs. The Transaction should therefore be declared incompatible with the internal market and with the functioning of the EEA Agreement.

(1327) First, as explained in **Section 8.3.1**, the combined market shares of the Parties are high [...] and have been consistently increasing in the past years. These market shares may constitute in themselves prima facie evidence of the creation of a dominant position.²⁴⁶⁰ Moreover, the market share increment is significant and, post-Transaction the overall concentration of the LLNGC market will be higher, with only one real competitor of the Parties left (SHI) and, to an insufficient extent, CSSC.

(1328) Second, as explained in **Section 8.3.2**, the Parties are each other's close competitors and the Transaction leads to the combination of two out of three (with SHI) very close competitors.

(1329) Third, as explained in **Section 8.3.3**, innovation is an important competitive force and both Parties (especially DSME) are important innovators.

(1330) Fourth, as explained in **Section 8.3.4**, other shipbuilders will not sufficiently constrain the Parties, whether individually or taken together. More specifically, SHI will not have the ability and the incentive to defeat a price increase post-Transaction due to its limited capacity, the lack of incentive to produce merely or mainly LLNGCs and [...]. CSSC, which already pre-Transaction, does not exert a sufficient competitive constraint on the Parties due, among other things, to the fact that it is not comparable with HHHH, DSME or SHI under several criteria and due to its domestic focus, will not have the ability or incentive to defeat a price increase of the Parties post-Transaction. Both SHI and CSSC are more likely to follow a price increase of the Parties post-Transaction, rather than undercut it. Japanese shipbuilders, which already pre-Transaction did not exert a meaningful competitive constraint on the Parties due, among other things, to the fact they have been mostly focussed on the production of LLNGCs equipped with non-membrane cargo tank technology and they have been selling almost exclusively to domestic customers, have either exited

²⁴⁶⁰ Horizontal Merger Guidelines, paragraph 17.

the market or have not received any orders for any membrane LLNGCs in recent years.

- (1331) Fifth, as explained in **Section 8.3.6**, the current and future market outlook of LLNGCs is positive. In this context, although, as explained in **Section 8.3.7**, given that LLNGCs are not homogenous goods, capacity is only one among the various factors relevant to the assessment of the dynamics of competition in the LLNGC market, the data and the market investigation show that supply/demand is balanced and that capacity is not as fungible as presented by the Notifying Party. In any event, the Parties account for a very significant share of LLNGC capacity, whereas competitors will not have enough capacity to deter or counter likely anticompetitive effects by increasing their supplies. Indeed, when a merger leads to a substantial consolidation in capacities in the hands of a new market leader, it can be expected to lead to a significant increase in market power (and thus to a price increase), and this even absent a reduction in the merged entity's capacity. This is because, for a given level of demand the competitive constraint on each firm increases with the amount of capacities held by its rivals: the greater the amount of capacity held by rivals, the stronger the constraint these rivals exercise. Anti-competitive effects are also more likely to arise when the extent of spare capacities in the market (in particular those held by rivals) is moderate relative to projected demand. This is because the merged entity will possess appreciable market power post-Transaction when its own supply is necessary to ensure that the entire market demand is served.
- (1332) Sixth, as explained in **Section 8.3.8**, barriers to entry and expansion are very high and may even increase post-Transaction. There has been no recent entry in the LLNGC market (on the contrary, a number of market exits) and no market entry is likely, timely and sufficient.
- (1333) Seventh, as explained in **Section 8.3.9**, customers do not have the ability or the incentive to exert a sufficient degree of buyer power post-Transaction.
- (1334) It follows that the Transaction is likely to result in price increases in the worldwide market for LLNGCs.

9.1.1. The Transaction is likely to have a negative impact on prices

- (1335) Anticompetitive effects likely to arise from the Transaction are illustrated by the Notifying Party's internal documents and concerns expressed by third parties in the framework of the market investigation.
- (1336) In particular, [Parties' internal document].²⁴⁶¹

Figure 61 [...]

[...]

Source: The Notifying Party's 5.4 documents, "KDB-related" dated 2 August 2018, slide 14, Report related to KDB, Form CO, Annex 5.4.6.

- (1337) Market participants also raised concerns with respect to negative impact on prices and negative impact on their negotiating position. In particular, some customers that expressed an opinion in the market investigation anticipated that the price of the LNGCs represent, overall, between 50% and 85% of the prices of the services that

²⁴⁶¹ The Notifying Party's 5.4 documents, "KDB-related" dated 2 August 2018, slide 14, Report related to KDB, Form CO, Annex 5.4.6.

they offer as either charterers or shipping companies.²⁴⁶² For example, a customer stated that “[...] *the merger of the two companies will mean less competition in an already tight market where there are really only 3 main shipbuilders for LNG/FSRU vessels globally*”.²⁴⁶³

- (1338) As a consequence, customers that expressed an opinion in Phase I anticipated that the Transaction is likely to have a negative impact on the price of LNGCs. For example, a customer stated that “[...] *the proposed transaction may have an adverse effect on the prices of LNG carriers. In particular, [we] expect prices to increase for new built vessels which will have a corresponding knock on effect on LNG vessel charter rates [...]*”.²⁴⁶⁴ This was confirmed in the Phase II market investigation where several customers indicate that the Transaction may cause prices of LLNGCs to increase.²⁴⁶⁵
- (1339) Contrary to what is argued by the Notifying Party,²⁴⁶⁶ the Commission notes that having a majority of customers expecting a negative impact on prices is not a legal requirement, especially when overall the market investigation outcome and objective data provides clear evidence in this sense.
- (1340) From the supply side, shipbuilders indicate that post-Transaction, the merged entity will raise prices due to the fact that, for example, recent track record shows that the Parties would obtain the largest share after the merger.²⁴⁶⁷
- (1341) Moreover, as explained in **Sections 8.3.1** and **8.3.8.3 (A)**, the Commission also notes that in its White Paper 2021, the European Chamber of Commerce in Korea expressed concerns about the Transaction.
- (1342) Finally, as explained in **Sections 8.3.4.1** and **8.3.4.2**, the Commission considers that in a such a concentrated market, SHI and CSSC (Hudong) will have the ability and incentive to follow any price increase introduced by the merged entity post-Transaction rather than undercut it.

9.1.2. The Transaction is likely to have a negative impact on customers’ negotiating position

- (1343) As explained in **Section 8.3.9**, the supply side of the market, which is already very concentrated, will be even more concentrated post-Transaction and the demand side, which is already relatively fragmented, will be even more fragmented post-Transaction. Thus, customers do not enjoy either the ability or the incentive to exert a sufficient degree of buyer power.
- (1344) This is also confirmed by the market investigation as a majority of customers that expressed an opinion perceive that, post-Transaction, their negotiating position will be at least weaker if not importantly affected.²⁴⁶⁸

9.1.3. The Transaction is likely to significantly impede effective competition in the EEA

- (1345) It follows from Article 2(2) and (3) of the Merger Regulation that the Commission has the duty in merger control to “*assess whether a proposed Transaction would significantly impede effective competition in the internal market or in a substantial*

²⁴⁶² Replies to question 78 of Questionnaire Q3 to Customers. [DOC ID: 3236]

²⁴⁶³ Replies to question 79.1 Questionnaire Q3 to Customers. [DOC ID: 3236]

²⁴⁶⁴ Replies to question 79.2 of Questionnaire Q3 to Customers [DOC ID: 3236] referring to Minutes of the conference call with [...] dated 3 July 2019, paragraph 31. [DOC ID: 300]

²⁴⁶⁵ Replies to questions 125.1, 125.2 and 125.5 of Questionnaire Q8 to Customers. [DOC ID: 3241]

²⁴⁶⁶ Response to the First Letter of Facts, paragraphs 229-230.

²⁴⁶⁷ Replies to question 147.2 and 147.2.1 of Questionnaire Q5 to Competitors. [DOC ID: 3238]

²⁴⁶⁸ Replies to question 125.3 of Questionnaire Q8 to Customers. [DOC ID: 3241]

part of it.” The Commission therefore considers that the Transaction will likely directly affect EEA customers of LLNGCs and indirectly the cost of LNG supply to the EEA for the following reasons.

- (1346) First the market for LLNGCs is worldwide in scope, hence it necessarily includes the EEA one. As explained in **Section 8.3.6.2 (B)**, the size of the total market for LLNGCs has been consistently increasing, LLNGCs have been representing a significant portion of value and CGTs of all vessels ordered from the Parties, and EEA customers have been representing a significant portion of worldwide demand.
- (1347) Second and with respect to the cost of LNG supply to the EEA, as explained in **Section 7.1**, (i) Europe’s imports of LNG have been consistently increasing since 1990 and (ii) 21% of all the important projects of common European interest for energy, which are intended to promote energy security across borders, consist of gas projects, in line with the role of gas when meeting EU’s decarbonisation objectives. A customer that expressed an opinion in the market investigation indicated that the Transaction may indirectly affect the overall cost of LNG supply to EU.²⁴⁶⁹
- (1348) In light of the above, the Commission considers that the Transaction is likely to lead to anticompetitive effects in the EEA as a result of a direct negative impact on EEA customers of LLNGCs and, as a subsidiary elements, an indirect negative impact on the cost of LNG supply to the EEA.

HAS ADOPTED THIS DECISION:

Article 1

The notified operation whereby HHIH would acquire sole control of DSME within the meaning of Article 3(1)(b) of the Merger Regulation is hereby declared incompatible with the internal market and the functioning of the EEA Agreement.

Article 2

This Decision is addressed to:

Hyundai Heavy Industries Holdings Co., Ltd.

50 Technosunhwan3-gil
Yuga-myeon, Dalseong-gun, Daegu,
South Korea

Done at Brussels, 13.1.2022

For the Commission

(Signed)
Margrethe VESTAGER
Executive Vice-President

²⁴⁶⁹ Replies to question 79.6 of Questionnaire Q3 to Customers. [DOC ID: 3236]