EUROPEAN COMMISSION
DG Competition

Case M.9410 - SAUDI ARAMCO / SABIC

Only the English text is available and authentic.

REGULATION (EC) No 139/2004
MERGER PROCEDURE

Article 6(1)(b) NON-OPPOSITION
Date: 27/02/2020

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EUROPEAN COMMISSION

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PUBLIC VERSION

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus […]. Where possible the information omitted has been replaced by ranges of figures or a general description.

Saudi Arabian Oil Company
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Saudi Arabia

Subject: **Case M.9410 - SAUDI ARAMCO/SABIC**
Commission decision pursuant to Article 6(1)(b) of Council Regulation No 139/2004[1] and Article 57 of the Agreement on the European Economic Area[2]

Dear Sir or Madam,

(1) On 23 January 2020, the European Commission received notification of a concentration pursuant to Article 4 of the Merger Regulation, which would result from a proposed transaction by which Saudi Arabian Oil Company (together with the entities it directly or indirectly controls referred to as "Saudi Aramco") intends to acquire the 70% shareholding in Saudi Basic Industries Corporation (together with the entities it directly or indirectly controls "SABIC") currently held by the Public Investment Fund of Saudi Arabia (the "PIF") (the "Transaction"). Through this acquisition of shares, Saudi Aramco would acquire sole control over SABIC.[3] (Saudi

1 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.

2 OJ L 1, 3.1.1994, p. 3 (the "EEA Agreement").

3 Publication in the Official Journal of the European Union No C 35, 03.02.2020, p. 10.

Aramco is designated hereinafter as the "Notifying Party" while Saudi Aramco and SABIC are designated hereinafter as the "Parties".)

1. THE PARTIES

(2) Saudi Aramco is a listed joint stock company established in Saudi Arabia by virtue of Royal Decree. Saudi Aramco is listed on the Saudi Stock Exchange (Tadawul). Saudi Aramco is 98.5% owned by Saudi Arabia. The remaining 1.5% is publicly traded. Saudi Aramco is mainly active in the upstream petroleum value chain. Saudi Aramco explores, produces and markets crude oil (which represents approximately […]% of its global turnover), as well as natural gas, LPG and fuels (which account for […]% of its global turnover). In addition, Saudi Aramco is active in the production and sale of chemicals, including basic chemicals such as aromatics, olefins, and polyolefins and more complex products such as polyols and advanced synthetic rubber.

(3) SABIC is a listed joint stock company established in Saudi Arabia by virtue of Royal Decree SABIC is listed on the Saudi Stock Exchange. SABIC is controlled by the PIF, which holds 70% of SABIC's shares. The remaining shares (30%) are publicly traded.[4] SABIC is primarily active in the downstream petroleum value chain. SABIC produces and sells commodity chemicals (including petrochemicals), intermediates, polymers (also referred to as plastics), fertilizers and, to some extent, metals. SABIC does not produce or sell crude oil or natural gas.

(4) The PIF is a sovereign wealth fund established in Saudi Arabia by virtue of a Royal Decree. The PIF is wholly owned by Saudi Arabia. The PIF invests in Saudi Arabia and globally in various sectors and asset classes, including telecoms, aerospace, energy, green technologies and security.

2. THE OPERATION

(5) On 27 March 2019, Saudi Aramco and the PIF entered into a share purchase agreement pursuant to which Saudi Aramco agreed to acquire the 70% shares of SABIC owned by the PIF (the "Transaction"). Saudi Aramco will thus acquire direct sole control of SABIC by virtue of the Transaction.

3. THE CONCENTRATION

(6) The Transaction involves the acquisition of sole control over SABIC by Saudi Aramco within the meaning of Article 3(1)(b) of the Merger Regulation.

(7) Although Saudi Aramco and SABIC are both owned by Saudi Arabia, the Transaction constitutes a concentration within the meaning of Article 3 of the Merger Regulation because each of Saudi Aramco and SABIC forms part of different economic units.

(8) When investigating transactions between state-owned entities ("SOEs"), the Commission assesses whether such SOEs constitute separate economic units having

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4 SABIC's second largest shareholder owned approximately 6% of SABIC's shares at the date of the Notification.

an independent power of decision within the State. If not, the transaction constitutes an internal restructuring, which by definition falls outside the scope of the concept of concentration under the meaning of Article 3 of the Merger Regulation. According to Article 5(4) of the Merger Regulation, read in conjunction with Recital 22 of the Merger Regulation and the Jurisdictional Notice,[5] two State-owned enterprises ("SOEs") will be considered separate economic units having an independent power of decision if they have a power of decision independent from each other and independent from the State concerned. In order to carry out this assessment, the Commission takes into account a number of criteria, developed in its case practice, which allow it to ascertain: (i) the SOEs' autonomy from the State in deciding strategy, business plan and budget; and (ii) the possibility for the State to coordinate commercial conduct by imposing or facilitating coordination.[6] Such coordination is assessed on the basis of factors such as the lack of interlocking directorships between the SOEs, the existence of specific rules safeguarding the independence of the SOEs toward the State, the information rights of the State concerning strategic business information of the SOEs, or the existence of formal mechanisms and safeguards ensuring that commercially sensitive information is not shared between the SOEs.

(9) In the present case, Saudi Aramco and SABIC are separate economic units from each other, given that the government of Saudi Arabia (the "Saudi State") does not coordinate SABIC's activities with Saudi Aramco, and that SABIC operates independently from the Saudi State. As explained below, this is apparent from the fact that SABIC is run independently by its "Supervisory Board", the PIF's limited interference in SABIC's strategy, SABIC's arm's-length relations with Saudi Aramco, and the fierce commercial negotiations that brought about the Transaction, which would not have been necessary if SABIC and Saudi Aramco were already part of the same economic unit.

(10) First, SABIC is run independently by its Supervisory Board, which adopts SABIC's business plan and budget. Members of SABIC's Supervisory Board are subject to conflict of interest provisions, both under the Saudi Capital Markets Regulations[7] and SABIC's internal rules,[8] which ensure that they do not take instructions from

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5 Paragraphs 52-53, 153 and 194 of the Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings. (the "Jurisdictional Notice")

6 See for example case COMP/M.7850 - *EDF / CGN / NNB Group of companies*, decision of 10.03.2006, paragraph 30 and seq. and case COMP/M.5549 – *EDF/Segebel*, decision of 12.11.2009, paragraph 92 and seq.

7 Inter alia, Article 21(a) of Saudi Arabia's Capital Market Authority's Corporate Governance Regulations (the "CGRs2): the "*Board represents all shareholders; it shall perform its duties of care and loyalty in managing the Company's affairs and undertake all actions in the general interest of the Company*". Article 86(2) of the CGRs: "*a Board Member shall represent all shareholders of the Company and take all actions to achieve the best interests of the Company and its shareholders, while protecting the rights of the other Stakeholders rather than only the interests of the group that elected him*". Article 43 of the CGRs: "*The Board shall develop an explicit and written policy to deal with actual and potential conflicts of interest situations which may affect the performance of Board members*". Article 44 of the CGRs: "*A member of the Board shall: (1) [...] prioritise the interests of the Company over his/her own interest [...] (2) avoid situations of conflicts of interest [...] (3) protect the confidentiality of the information related to the Company and its activities, and not disclose any of such information to any person.*"

8 Form CO, Annex 5, Appendix 6.4.1 (SABIC's Conflict of Interest policy); Form CO, Annex 5 paragraphs 41-44 of the response to RFI 4; SABIC's Corporate Code of Ethics (available here: https://www.sabic.com/en/investors/corporate-governance/corporation-code-of-ethics) and SABIC's Board Charter (available here: y arsabic.com/assets/en/Images/BoardCharter_tcm1010-12422.pdf)

just one shareholder, but act in the interest of all shareholders (including its widely dispersed minority shareholders, who own 30% of SABIC). In addition, other than in its role of regulator, there is no mechanism for the Saudi State (e.g. as the PIF's sole shareholder) to directly give any orders to SABIC.[9]

(11) Second, although the PIF can appoint the majority of Directors to the Board of SABIC, unlike Saudi Aramco, whose Board includes ministers of the Saudi government none of the members of SABIC's Supervisory Board are ministers of the Saudi government.[10] Moreover, there are no interlocking directorships between Saudi Aramco's Board of Directors and SABIC's Supervisory Board, nor have there been in at least the past five years.[11]

(12) Third, the Notifying Party submits that the PIF receives only limited information from SABIC in its role as an investor.[12] This implies that any material coordination of the activities of SABIC with those of Saudi Aramco would be challenging and would be carried out without detailed knowledge of SABIC's pricing, customers or overall strategy. Moreover, SABIC does not receive any confidential information from or relating to Saudi Aramco, and vice versa.[13]

(13) Fourth, the nature of the PIF's typical role as an institutional investment fund appears to have allowed SABIC to manage its business largely independently from the PIF (and thus also from the Saudi State). For instance, the Notifying Party submits that the PIF's management or its Board of Directors have not reviewed any strategic documents assessing SABIC's performance or strategy, and the PIF has [confidential details on interactions between the PIF and SABIC].[14] This suggests that the PIF is involved in SABIC's business and strategy only to a very limited extent, and ultimately supports the view that SABIC and Saudi Aramco's activities are not coordinated by the Saudi State.

(14) Fifth, the Notifying Party submits that the Parties' commercial interactions are limited and at arm's length.[15] The Notifying Party has submitted evidence to show that, at least in the vertically affected markets where Saudi Aramco or SABIC acts as a supplier of one another, […].[16] In the markets where the Parties overlap, the Parties consider and treat each other as competitors, and the Notifying Party submits that they act as "*independent stakeholders*" in the three joint ventures in which they both participate: the COTC (standing for "Crude oil to chemicals") complex in Yanbu,

9 Form CO, Annex 5, paragraphs 36 and 48 of the response to RFI; paragraph 29 of the response to RFI 6.

10 Form CO, Annex 5, paragraph 7 of the response to RFI 1.

11 Form CO, Annex 5, paragraph 15 of the response to RFI 4; Annex 5, Appendices 6.6.1 and 6.6.2.

12 Form CO, Annex 5, paragraph 2 of the response to RFI 4; paragraph 106 of the response to RFI 6. This includes the disclosure of […].

13 Form CO, Annex 5, paragraph 12 of the response to RFI 1; paragraphs 1 and 8 of the response to RFI 4.

14 Notifying Party's response to RFI 9, paragraph 17. Form CO, Annex 5, paragraphs 57-60 and 106 of the response to RFI 6.

15 Form CO, Annex 5, paragraphs 11-12 of the response to RFI 1; paragraph 16 of RFI 4 and questions 12 and 13 RFI 6 and to question 1 of the Notifying Party's response to RFI 9.

16 Notifying Party's response to question 1 of RFI 9 (including Annex 9.1).

Saudi Arabia; Marafiq (a power and water utility joint-stock company in Saudi Arabia) and Dussur (an investment company within Saudi Arabia).[17]

(15) Lastly, the Parties' internal documents evidence that the Transaction was fiercely negotiated at arm's length, and gave rise to lengthy exchanges between Saudi Aramco and the PIF in the course of a full negotiation process.[18] Separate advisors were hired by Saudi Aramco and the PIF, numerous non-disclosure agreements were signed, and Saudi Aramco insisted on proceeding with a confirmatory due diligence […].[19] There were material disagreements on key commercial terms such as […].[20] A separate committee was set up within Saudi Aramco's Board, with strict ring-fencing of confidential information and conflict of interest provisions in place, to determine the appropriate valuation for the bid to acquire Saudi Aramco.[21] Such arm's length negotiations, and material costs that these negotiations involved, would not have been necessary if the Transaction were an internal restructuring where the Parties were already part of one economic unit within Saudi Arabia.

4. UNION DIMENSION

(16) The Parties have a combined aggregate worldwide turnover of more than EUR 5 000 million[22] [Saudi Aramco: EUR […] million, SABIC: EUR […] million]. Each of them has a Union-wide turnover in excess of EUR 250 million [Saudi Aramco: EUR […] million, SABIC: EUR […] million], but neither of the Parties achieves more than two-thirds of their aggregate Union-wide turnover within one and the same Member State. The notified operation therefore has a Union dimension.

(17) As mentioned in paragraph (7) above, Saudi Aramco and SABIC are both owned by the Saudi State. In accordance with the principle of non-discrimination between the public and private sectors, Recital (22) of the Preamble to the Merger Regulation notes that the turnover of an undertaking, be it controlled by a public or private entity, shall encompass the sales of all the undertakings making up an economic unit with an independent power of decision. In the present Decision, the concentration has a Union dimension on the sole basis of the respective turnovers of Saudi Aramco and SABIC. In addition, SABIC does not achieve more than two-thirds of its aggregate Union-wide turnover within one Member State. Consequently, for the purpose of assessing the Union dimension of the concentration, it is not necessary to assess whether Saudi Aramco is part of a wider economic unit.

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17 Form CO, Annex 5, paragraph 12 of the response to RFI 1. See also paragraphs referred to in footnote 15 above.

18 Form CO, Annex 5, response to questions 2 and 10 of RFI 6, and Appendices 6.4.2 and 6.10.1 to 6.10.11.

19 Form CO, Annex 5, response to RFI 6, paragraphs 69 and 73 to 79.

20 Form CO, Annex 5, response to RFI 6, paragraphs 69, 80 to 86.

21 Form CO, Annex 5, response to RFI 6, paragraphs 6, 50 and 69.

22 Turnover calculated in accordance with Article 5 of the Merger Regulation.

5. ANALYTICAL FRAMEWORK AND RELEVANT MARKETS

5.1. Analytical framework

(18) Under Articles 2(2) and 2(3) of the Merger Regulation, the Commission must assess whether a proposed concentration would significantly impede effective competition in the internal market or in a substantial part of it, in particular through the creation or strengthening of a dominant position.

(19) A merger can entail horizontal effects. In this respect, the Commission Guidelines on the assessment of horizontal mergers under the Merger Regulation ("the Horizontal Merger Guidelines")[23] distinguish between two main ways in which mergers between actual or potential competitors on the same relevant market may significantly impede effective competition, namely (a) by eliminating important competitive constraints on one or more firms, which consequently would have increased market power, without resorting to coordinated behaviour (non-coordinated effects); and (b) by changing the nature of competition in such a way that firms that previously were not coordinating their behaviour are now significantly more likely to coordinate and raise prices or otherwise harm effective competition. A merger may also make coordination easier, more stable or more effective for firms, which were coordinating prior to the merger (coordinated effects).[24]

(20) In addition, a merger can also entail vertical effects when it involves companies operating at different levels of the same supply chain. Pursuant to the Commission Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (the "Non-Horizontal Merger Guidelines"),[25] vertical mergers do not entail the loss of direct competition between merging firms in the same relevant market and provide scope for efficiencies. However, there are circumstances in which vertical mergers may significantly impede effective competition. This is in particular the case if they give rise to foreclosure.[26] The Non-Horizontal Merger Guidelines distinguish between two forms of foreclosure: input foreclosure, where the merger is likely to raise costs of downstream rivals by restricting their access to an important input, and customer foreclosure, where the merger is likely to foreclose upstream rivals by restricting their access to a sufficient customer base.[27]

5.2. Relevant markets

(21) In the present case, as further detailed below, and in view of the supply by both Parties of certain chemical products, the Transaction gives rise to horizontally affected potential markets with regard to:

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23 Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 31, 5.2.2004 p.5.

24 Horizontal Merger Guidelines, paragraph 22.

25 OJ C 265, 18.10.2008, p. 6

26 Non-Horizontal Merger Guidelines, para 18.

27 Non-Horizontal Merger Guidelines, para 30.

- butyl rubber (see Section 6.1 below);
- ethylene glycols ("EGs") (see Section 6.2 below);
- ethylene propylene terpolymer rubber and ethylene propylene co-polymer (together, "EP(D)M") (See Section 6.3 below);
- polyethylene (see Section 6.4 below);
- polypropylene resins ("PP resins") (see Section 6.5 below);
- ethanolamines ("EOAs") (see Section 6.6 below); and
- pygas (see Section 6.7 below).

(22) In addition, the Commission also conducted an assessment with regard to the following horizontally overlapping products that either (i) are not affected based on the Notifying Party's estimates but for which the Parties' market shares appear to be close to the 20% threshold, or (ii) for which the Notifying Party did not provide market shares:

- tailgas (see Section 6.8 below);
- raffinate-2 (see Section 6.9 below); and
- polybutadiene rubber ("PBR") (see Section 6.10 below).

(23) Section 6 of this Decision sets out the Commission's assessment for each of the abovementioned horizontal overlaps. The assessments are presented separately for each horizontal overlap, whereby the competitive assessment of the relevant overlap immediately follows the relevant market definition. However, as further detailed below in Section 6, the horizontal overlaps arising from the Transaction are limited and are unlikely to raise serious doubts as to their compatibility with the internal market.

(24) In addition, and as illustrated below, in view of the Parties' activities in the supply of distinct chemical products, which are however part of the same production value chain, the Transaction gives rise to vertically affected potential markets with regard to:

- hydrogen, upstream, with hydrogenated nitrile butadiene rubber, downstream (see Section 7.1 below);
- ethylene oxide, upstream, with ethylene glycols, downstream (See Section 7.2 below);
- butadiene, upstream, with chloroprene rubber, downstream (See Section 7.3 below); and
- ethylene and butene-1, upstream, with polyethylene, downstream (See Section 7.4 below).

(25) In addition, the Commission also conducted an assessment with regard to one vertical link that would be vertically affected due to the Parties' combined market

shares in the supply of the downstream product in the EEA in 2017 and 2016 (but not in 2018), namely:

- ethylene, propylene and hexene-1, upstream, with ethylene propylene terpolymer rubber and ethylene propylene co-polymer, downstream (see Section 7.5 below);

(26) Section 7 sets out the Commission's assessment for each of the abovementioned vertical links. The assessments are presented separately for each vertical link, whereby the competitive assessment of the relevant link immediately follows the relevant market definition. However, as further detailed below in Section 7 of the Decision, the vertical links arising from the Transaction are limited and are unlikely to give rise to serious doubts as to their compatibility with the internal market.

6. HORIZONTAL OVERLAPS – MARKET DEFINITION AND COMPETITIVE ASSESSMENT

6.1. Butyl rubber

6.1.1. Market definition

(27) Butyl rubber is an elastomer produced by polymerisation of isobutylene with a smaller amount of isoprene. Butyl rubber can be further halogenated using chlorine or bromine processes. The products obtained are referred to, separately as halogenated chlorobutyl rubber and halogenated bromobutyl rubber (respectively), or jointly as halogenated butyl rubber – as opposed to non-halogenated butyl rubber. Around 75% of global butyl rubber output is in the form of halogenated butyl rubber (with the remainder being non-halogenated butyl rubber). All major global butyl rubber producers produce both regular and halogenated butyl rubber.

(28) Due to its high degree of gas impermeability, butyl rubber is widely used to produce a range of rubber goods such as inner tubes, sealants, air cushions, pneumatic springs and similar products. Its main use is the production of inner liners and inner tubes for tyres. As a result, the automotive industry accounts for approximately 70% of global butyl rubber consumption. There are also smaller applications in the pharmaceutical industry (e.g. sealants for medicine bottles, pharmaceutical packaging), and in the food industry (e.g. chewing gum).

6.1.1.1. Product market definition

The Commission's precedents

(29) In *Dow/DuPont*, the Commission identified a separate product market for butyl rubber.[28] In subsequent cases involving synthetic elastomers, the Commission has also considered that individual synthetic elastomer families could constitute separate product markets due to their specific properties, but ultimately left the question open.[29]

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[28] Under the name IIR (Isobutene isoprene rubber), which is another way of referring to butyl rubber. See case IV/M.663 - *Dow/DuPont*, decision of 21.02.1996.

[29] See case COMP/M.3733 - *Dow/DDE*, decision of 26.04.2005.

The Notifying Party's view

(30) The Notifying Party considers that butyl rubber forms a separate product market but submits that the precise product market definition can be left open as the Transaction would not lead to competitive concerns irrespective of the market definition.[30]

The Commission's assessment

(31) The Commission's market investigation confirmed that butyl rubber likely forms a separate product market from other elastomers. Respondents generally considered that butyl rubber is not substitutable with other products, given its superior performance as an air barrier in the tyre industry, as well as the restrictions inherent to the registration of formulations for use in healthcare packaging.[31] Respondents further indicated that halogenated and non-halogenated rubber are also not generally substitutable with each other, in particular because non-halogenated butyl rubber cannot be co-vulcanised with other tyre materials and is therefore not suitable for inner liner applications.[32] Responses from the market investigation indicated that, within the halogenated category, a distinction may be drawn between bromobutyl and chlorobutyl as they can be used for the manufacture of different types of tyres, however they also indicated that further segmentation is unlikely to be justified.[33] The market investigation also suggested that butyl rubber and its segments are somewhat homogeneous products across suppliers (at least as regards products sourced by major tyre manufacturers),[34] and that from a supply-side perspective it is generally possible to switch production between the different types without incurring very large costs.[35]

(32) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for butyl rubber can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. butyl rubber overall or segmented between non-halogenated and halogenated, and further sub-segmented between halogenated bromobutyl or chlorobutyl rubber).

6.1.1.2. Geographic market definition

The Commission's precedents

(33) In *Dow/DuPont*, the Commission considered the relevant geographic market for butyl rubber to be at least EEA-wide, and probably larger, ultimately leaving the

30 Form CO, paragraphs 578-580.

31 Responses to questions 3.1 and 6.1 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

32 Responses to question 4.1 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

33 Responses to questions 4.1 and 5.1 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

34 It must be noted that for certain smaller applications, such as in the pharmaceutical and food industries, only certain grades of butyl rubber can be used, and thus the product homogeneity between suppliers is reduced.

35 Responses to questions 8.1, 7.1 and 7.2 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

geographic market definition open.[36] In subsequent cases involving synthetic elastomers, the Commission has also considered that the relevant geographic market was at least EEA-wide, and probably larger, though it ultimately left open the precise geographic market definition.[37]

The Notifying Party's view

(34) The Notifying Party considers that the geographic market for butyl rubber is global or at least EEA-wide in scope.[38]

(35) First, the Notifying Party argues that each major butyl rubber manufacturer only has a few production facilities, which are able to serve customers around the globe. The Notifying Party further claims that manufacturers use multiple production sites from different geographic locations to supply butyl rubber to the same customer.

(36) Second, the Notifying Party explains that the major butyl rubber customers are global tyre manufacturers with worldwide presence in the tyre industry, with the ability to source butyl rubber worldwide, and also to multisource from suppliers located in various locations worldwide with relatively frequent changes in product flows. More generally, the Notifying Party claims that there are significant trade flows across regions.

(37) Third, the Notifying Party considers that production costs are comparable among various location facilities, and that neither transportation costs, nor import duties constitute significant barriers to trading butyl rubber across regions.

The Commission's assessment

(38) All respondents to the market investigation considered that the relevant geographic scope for butyl rubber and its possible sub-segments is likely worldwide. Respondents expressed that both the supply of and demand for butyl rubber are global, with regular trade flows between regions.[39] The majority of respondents also indicated that, for the most part, there are no technical, economic or regulatory barriers to purchasing or selling butyl rubber at a worldwide level at competitive terms, with the exception of recently imposed anti-dumping duties in China.[40] Accordingly, the vast majority of customers responding to the market investigation confirmed that suppliers' plants outside the EEA could credibly sell butyl rubber to customers in the EEA.[41]

(39) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for butyl rubber can be left open, since the Transaction does not raise serious doubts as to its compatibility

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[36] Under the name IIR, which stands for isobutene isoprene rubber, and is another way of referring to butyl rubber. See case IV/M.663 - *Dow/DuPont*, decision of 21.02.1996.

[37] See case COMP/M.3733 - *Dow/DDE*, decision of 26.04.2005.

[38] Form CO, paragraphs 581-584.

[39] Responses to questions 9.1 and 11.1 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

[40] Responses to question 12.1 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

[41] Responses to question 11 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

6.1.2. *Competitive assessment*

(40) Saudi Aramco is active in butyl rubber through its wholly-owned affiliate Arlanxeo. It is the second largest butyl rubber producer and supplier (behind ExxonMobil) in the world as well as in the EEA, with production facilities in Belgium, Canada and Singapore. SABIC is a very minor player in the butyl rubber market, with only [0-5]% market share worldwide, […], and no sales in the EEA. However, SABIC is a partner of ExxonMobil through a 50/50 joint venture producing butyl rubber at a plant in Al Jubail, Saudi Arabia (the "Kemya JV").[42]

(41) At worldwide level, the Transaction gives rise to horizontally affected plausible markets in (i) butyl rubber (overall), (ii) halogenated butyl rubber, (iii) halogenated bromobutyl rubber, and (iv) non-halogenated butyl rubber. The Transaction does not give rise to a potentially affected market for the worldwide supply of halogenated chlorobutyl rubber.

(42) At EEA level, the Transaction does not give rise to any potential horizontally affected markets as SABIC is not active in the supply of any kind of butyl rubber in this region.

(43) The Notifying Party's estimates of the Parties' and their largest competitors' market shares are shown in Table 1 - Table 4 below.

Table 1: Market share estimates for butyl rubber worldwide, 2018 (by volume)[43]

Supplier	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[20-30]%*
SABIC	*[…]*	*[0-5]%*
Combined	***[…]***	**[20-30]%**
ExxonMobil	[…]	[30-40]%
NKNK	[…]	[5-10]%
Cenway Technologies	[…]	[5-10]%
SINOPEC	[…]	[5-10]%
JSR	[…]	[0-5]%
Panjin Heyun Ind.	[…]	[0-5]%
Chambroad	[…]	[0-5]%
Formosa	[…]	[0-5]%
Others	[…]	[5-10]%
Total Market	*[…]*	*100%*

Source: The Parties' sales and IHS Markit competitors' sales and market size estimates.

42 [Contractual provisions related to Kemya JV's commercial matters. More information is available in paragraph (51) of this Decision].

43 Unless stated otherwise in the present Decision, the Notifying Party's estimates of the Parties' market shares in volume and value do not significantly differ.

Table 2: Market share estimates for halogenated butyl rubber worldwide, 2018 (by volume)

Supplier	Volume (kt)	Share
Saudi Aramco	[…]	*[20-30]%*
SABIC	[…]	*[0-5]%*
Combined	[…]	**[20-30]%**
ExxonMobil	[…]	[30-40]%
NKNK	[…]	[5-10]%
Cenway Technologies	[…]	[5-10]%
SINOPEC	[…]	[5-10]%
JSR	[…]	[0-5]%
Panjin Heyun Ind.	[…]	[0-5]%
Chambroad	[…]	[0-5]%
Formosa	[…]	[0-5]%
Others	[…]	[10-20]%
Total Market	[…]	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

Table 3: Market share estimates for halogenated bromobutyl rubber worldwide, 2018 (by volume)

Supplier	Volume (kt)	Share
Saudi Aramco	[…]	*[20-30]%*
SABIC	[…]	*[0-5]%*
Combined	[…]	**[20-30]%**
ExxonMobil	[…]	[30-40]%
NKNK	[…]	[5-10]%
Cenway Technologies	[…]	[5-10]%
SINOPEC	[…]	[5-10]%
JSR	[…]	[0-5]%
Panjin Heyun Ind.	[…]	[0-5]%
Chambroad	[…]	[0-5]%
Formosa	[…]	[0-5]%
Others	[…]	[5-10]%
Total Market	[…]	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

Table 4: Market share estimates for non-halogenated butyl rubber worldwide, 2018 (by volume)

Supplier	Volume (kt)	Share
Saudi Aramco	[…]	*[20-30]%*
SABIC	[…]	*[0-5]%*
Combined	[…]	**[20-30]%**
ExxonMobil	[…]	[30-40]%
NKNK	[…]	[5-10]%
Cenway Technologies	[…]	[5-10]%
SINOPEC	[…]	[5-10]%
JSR	[…]	[0-5]%
Panjin Heyun Ind.	[…]	[0-5]%
Chambroad	[…]	[0-5]%
Formosa	[…]	[0-5]%
Others	[…]	[5-10]%
Total Market	[…]	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

6.1.2.1. Non-coordinated effects

The Notifying Party's view[44]

(44) The Notifying Party submits that the Transaction is unlikely to give rise to any horizontal non-coordinated effects in the market for butyl rubber that would represent a significant impediment to effective competition.[45] The Notifying Party claims that SABIC is an insignificant player in this market, and that the market share increment brought by SABIC is negligible (less than [0-5]%) regardless of the product market definition adopted. It considers that the Parties are not close competitors for butyl rubber, in light of the fact that SABIC only sells scrap material and only has one customer. The Notifying Party further claims that the combined entity would continue to face competition from a number of strong competitors, such as ExxonMobil (the largest player worldwide), NKNK and Cenway Technologies, as well as other smaller players. Further, the Notifying Party submits that barriers to enter the butyl rubber business are small, as is reflected by the recent construction of a new butyl rubber plant in India, where no other butyl rubber production facility existed before,[46] as well as other recent expansions in Singapore and China. Lastly, it submits that the Parties' largest customers are global tyre manufacturers with significant countervailing buyer power.

The Commission's assessment

(45) At worldwide level, the Parties' combined market share in the overall market for butyl rubber in 2018 was [20-30]%, with a negligible increment of [0-5]% from SABIC, and a HHI increment of less than 150. The Parties' shares in each of the potential sub-segments are also modest. In halogenated butyl rubber, their combined share was [20-30]% with a [0-5]% increment and a HHI increment below 150. In halogenated bromobutyl rubber, the Parties' combined share was [20-30]% with a [0-5]% increment and a HHI increment below 150. In non-halogenated butyl rubber, their combined share was [20-30]% with a [0-5]% increment and a HHI increment below 150.[47]

(46) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that SABIC is a small supplier of butyl rubber (and its sub-segments) worldwide.[48] The majority of respondents confirmed that, post-Transaction, there will remain a number of credible competitors in the market to constrain the combined entity, such as ExxonMobil, NKNK and Sibur Petrochemicals, among others, and that customers will continue to have a

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44 The Notifying Party's arguments are presented for the overall market of butyl rubber only. However, the Notifying Party also submits that there are no significant variations in the competitive dynamics of the potential sub-segments of butyl rubber (Form CO, paragraph 592).

45 Form CO, paragraphs 591-655.

46 This is the Reliance Sibur Elastomers butyl rubber manufacturing facility that is being constructed in Jamnagar, Gujarat, India. This facility is operated as a joint venture between Sibur Petrochemicals and Reliance Industries. Once fully operational, it is expected to have an annual production capacity of 120 KT. Form CO paragraph 625.

47 Source: *Annex RFI 2.25 Shares butyl rubber and sub-segments.*

48 Responses to questions 17 and 18 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

sufficient choice of credible suppliers to meet their needs.[49] Moreover, the majority of customers responding to the market investigation confirmed that they typically procure butyl rubber from multiple suppliers, find no significant barriers or costs to switching suppliers, and have switched supplier in the last three years.[50] Although respondents considered that entry into the butyl rubber market could be challenging, they also identified a number of players who had entered or expanded in the past five years (e.g. NKNK, Cenway Technologies, Chambroad) and other players who were planning to enter or expand in the near future (e.g. Cenway Technologies, and a JV between Reliance Industries and Sibur Petrochemicals in Jamnagar, India).[51] Finally, the majority of respondents to the market investigation did not consider that the Transaction would have any negative impact on prices, quality, choice or innovation for the worldwide market for butyl rubber. More generally, no material concerns were raised regarding the Parties' horizontal overlap in butyl rubber.[52]

6.1.2.2. Coordinated effects

(47) As set out above, SABIC is not an important player in the butyl rubber market as it only sells "scrap" butyl rubber and has a market share of no more than [0-5]% worldwide. The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that SABIC is a small supplier of butyl rubber (and its sub-segments) worldwide.[53] Accordingly, the Commission does not consider that the mere reduction in the number of firms in the market (through the loss of SABIC as a competitor) is a factor that, in itself, facilitates coordination. However, SABIC is a partner of ExxonMobil, the largest player, in the Kemya JV, a 50/50 joint venture producing butyl rubber at a plant in Al Jubail, Saudi Arabia.

(48) The Kemya JV was established in 1980, primarily with the objective of producing polyethylene, but it has expanded since into the production of other petrochemical products, including butyl rubber.[54] The Kemya JV manufactured […] kt of butyl rubber in 2018, and accounts for around [0-5]% market share of butyl rubber worldwide.

(49) The Transaction therefore creates a structural change in the butyl rubber market. Post-Transaction, Saudi Aramco and ExxonMobil will participate in a joint venture, which produces around [0-5]% of worldwide butyl rubber sales and [Information on the split of profits between the Kemya JV's parents]. In this Section, the

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49 Responses to questions 17 and 30 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

50 Responses to questions 14 and 25, and 26 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

51 Responses to questions 27, 28 and 29 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

52 Responses to questions 31.2 and 32 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

53 Responses to questions 17 and 18 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

54 The Kemya JV also manufactures styrene butadiene rubber, thermoplastic elastomers, carbon black, ethylene propylene co-polymer. Other than butyl rubber, none of the products manufactured by the Kemya JV appear likely to give rise to coordinated effects, as butyl rubber is the only product market in which the Parties hold a material share, ExxonMobil is a major player, and the market is concentrated.

Commission assesses whether this structural change can significantly impede effective competition, through the creation or strengthening of a collective dominant position in the relevant market(s) for butyl rubber. For this purpose, the Commission assesses whether such change increases the likelihood that ExxonMobil and Saudi Aramco are able to coordinate, or makes coordination between the firms easier, more stable, or more effective.

The Notifying Party's view

(50) The Notifying Party submits that the Transaction will not give rise to horizontal coordinated effects because it does not change the market structure, and because the indirect structural link between Saudi Aramco and ExxonMobil will not facilitate coordination due to the strict confidentiality provisions in place.[55]

(51) Firstly, the Notifying Party submits that the Transaction will not result in a market share increase. SABIC has no sales of prime-grade butyl rubber, [Information on the Kemya JV arrangements]. According to the Kemya Agreements, SABIC only has the right to sell "scrap" butyl rubber (i.e. output neither meeting the agreed product specifications nor the required quality for "prime" and "substandard" butyl rubber), […].[56] Moreover, all of SABIC's (scrap) butyl rubber sales are to a single customer within Saudi Arabia. Even if the sales of scrap butyl rubber are taken into consideration, the Transaction gives rise to only a minor increment to Saudi Aramco's sales, ranging from below [0-5]% to [0-5]% depending on the type of butyl rubber.

(52) Secondly, the Notifying Party submits that the Kemya JV will not allow for the exchange of sensitive information between ExxonMobil and Saudi Aramco post-Transaction. It submits that, while the Kemya Agreements contain[57] [Details on the contractual JV agreements]. [58]

(53) Thirdly, the Notifying Party argues that it is difficult for the combined entity and ExxonMobil to reach a common understanding on possible factors of coordination, given that prices in the market for butyl rubber are not transparent. Moreover, the Notifying Party submits that collusion would not be sustainable due to this lack of transparency, that there is no effective deterrent mechanism to enforce any attempted coordination, and that customers and competitors would be able to undermine any attempt at coordination.[59]

(54) Lastly, the Notifying Party emphasizes that with respect to the structural link created by the Transaction, which involves the [Information on the profit split among the JV shareholders], the Transaction only introduces a minimal change in the combined entity's incentive to compete, or rather coordinate, on the butyl rubber market. As regards ExxonMobil, it argues that ExxonMobil's incentive to coordinate will not change, because the Transaction does not materially affect the extent to which it can recapture any lost sales.

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55 Form CO, Annex 20 – Coordinated Effects Analysis – Part 1, paragraphs 1-27.

56 For completeness, under the Kemya Agreements, […].

57 Such information includes […].

58 Form CO, Annex 20 – Coordinated Effects Analysis – Part 2, paragraph 4.

59 Form CO, Annex 20 – Coordinated Effects Analysis – Part 2, paragraphs 13-15.

(55) The Notifying Party concludes that, in the absence of any changes to market structure resulting from the Transaction, there is no plausible risk of horizontal coordinated effects in the butyl rubber market.

The Commission's assessment

(56) As explained in paragraph (19), a merger in a concentrated market can lead to anticompetitive horizontal coordinated effects if it significantly impedes effective competition, through the creation or strengthening of a collective dominant position, because it increases the likelihood that firms are able to coordinate or makes coordination easier, more stable or more effective.

(57) Pursuant to the Horizontal Guidelines, to assess whether a merger gives rise to horizontal coordinated effects, the Commission examines, firstly, whether it would be possible to reach terms of coordination[60] and, secondly, whether the coordination would be likely to be sustainable.[61] In examining the possibility and sustainability of coordination, the Commission specifically considers the changes that the transaction brings about. The reduction in the number of firms in a market may in itself be a factor that facilitates coordination.

(58) The following Section focuses on the risk of horizontal coordinated effects arising from the Transaction in the market for butyl rubber at worldwide level. However, this analysis at worldwide level would also apply to the EEA, to the extent that the relevant geographic market for butyl rubber were considered EEA-wide. This is because the market investigation indicated that competitive conditions appear similar at EEA-wide and worldwide level for the reasons outlined in paragraph (38) above and,[62] meaning that the analysis regarding whether coordination is possible or sustainable is the same at EEA-level as worldwide.

Possibility of reaching terms of coordination

(59) The market investigation indicated that the butyl rubber market has some characteristics that may be conducive to reaching a common perception regarding how coordination should work.

- The market investigation broadly confirmed the Notifying Party's market share estimates and, consequently, that the market for the supply of butyl rubber is relatively concentrated worldwide, with Saudi Aramco and

60 As regards the possibility of reaching terms of coordination, coordination is more likely to emerge in markets where it is relatively simple to reach a common understanding on the terms of coordination. Coordination may take various forms, including keeping prices above the competitive level, or dividing the market, for instance by customer characteristics or by allocating contracts in bidding markets.

61 As regards the sustainability of coordination, three conditions are necessary for coordination to be sustainable. Firstly, the coordinating firms must be able to monitor to a sufficient degree whether the terms of coordination are being adhered to. Secondly, discipline requires that there is a credible deterrent mechanism that can be activated if deviation is detected. Thirdly, the reactions of outsiders, such as current and future competitors not participating in the coordination, as well as customers, should not be able to jeopardise the results expected from the coordination.

62 Responses to questions 9, 10, 11 and 12 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

ExxonMobil together accounting for more than [60-70]% of total worldwide sales.[63]

- Moreover, demand is also fairly concentrated, with the top 10 global tyre manufacturers representing around 70% of the demand for butyl rubber.[64] While the results of the market investigation were somewhat mixed, several respondents indicated that for at least some types of customer (e.g. global tyre producers), butyl rubber is a relatively homogenous product across different suppliers.[65]

- Customers further explained that prices for butyl rubber are generally based on formulas which take into consideration the price of hydrocarbons and that, insofar as the price of inputs (e.g. isobutylene) is known by market participants, there is a moderate level of transparency in the prices charged by suppliers.[66]

(60) On the other hand, the market investigation also brought to light some factors that suggest that it may not be entirely straightforward to reach terms of coordination in relation to butyl rubber.

- Firstly, as regards demand, the butyl rubber market is growing. IHS Markit data indicates that demand has grown at an average rate of 4% per year between 2012-2017 and is expected to increase by 2.3% per year over the next five years.[67]

- Secondly, as regards supply, a number of competitors have recently expanded their production capacity (see paragraph (69) below), to the point that the market is characterised by overcapacity.[68] Moreover, capacity is forecasted to continue to increase by around 4.2% per annum in the next 5 years, according to IHS Markit (which the market investigation confirmed is accurate).[69] The market investigation confirmed that suppliers' capacity has been and is continuing to expand rapidly, with respondents pointing to expansions by ExxonMobil, Chambroad and Cenway Technologies, as well

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63 Responses to questions 15, 16, 17 and 18 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

64 Form CO, paragraph 605.

65 At least within each sub-type of butyl rubber (e.g. halogenated chlorobutyl rubber from different suppliers). Responses to question 8 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*. Notably, for certain applications (e.g. pharmaceutical and food), only certain grades of butyl rubber, developed by a reduced amount of suppliers can be used, and thus the product homogeneity of the product between suppliers is reduced.

66 Responses to questions 21 and 23 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

67 IHS Markit Report "*Butyl Elastomers*" 15 August 2018, p. 6.

68 According to the data provided by the Notifying Party (Form CO, Annex 21), the worldwide butyl rubber capacity was […]kT in 2018, while worldwide sales of butyl rubber amounted to […]kT. According to data provided by the Notifying Party (Form CO, paragraphs 599 - 622) and the results of the market investigation (Responses to question 13 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*), the utilization rate of the top 5 butyl rubber manufacturers worldwide […].

69 IHS Markit Report "*Butyl Elastomers*" 15 August 2018, p. 13.

as a 120 kilotons-per-annum expansion by a Reliance-Sibur joint venture in Jamnagar, India.[70]

- Thirdly, the majority of customers suggested that the use of a pricing formula means there is a "moderate" degree of price transparency (see paragraph (59) above), but importantly suppliers of butyl rubber who responded to the market investigation thought prices are not transparent. Respondents also explained that prices are set by way of bilateral negotiations for contracts that run for at least a year or, more typically, two years or more.[71] Notwithstanding the fact that input costs represent a significant element of pricing for butyl rubber, the Notifying Party submitted data indicating that […].[72]

- Fourthly, as outlined in paragraph (47) above, SABIC is not considered a material supplier of butyl rubber. Thus, the reduction in the number of firms in the market (through the loss of SABIC as a competitor) does not, of itself, facilitate coordination by increasing transparency between butyl rubber suppliers.

(61) In addition, in light of the specific circumstances of the case, the creation of the structural link between Saudi Aramco and ExxonMobil via the Kemya JV is not likely to increase the likelihood that butyl rubber suppliers can reach terms of coordination, as neither JV partner receives commercially sensitive information about the other. Pursuant to the bylaws of the Kemya JV, [Information on information flow mechanisms in the Kemya JV arrangements]. Indeed, according to the Notifying Party's submissions and the evidence received by the Commission,[73] all information provided by ExxonMobil to the Kemya JV [Information on information flow mechanisms in the Kemya JV arrangements].[74] Therefore, strict ring-fencing measures are in place such that post-Transaction the Kemya JV will not give Saudi Aramco insight into ExxonMobil's sales, prices or other commercial information. [Information on the Kemya JV arrangements].

(62) Overall, however, it is not necessary to conclude on whether it is possible to reach terms of coordination on this market, or on the extent to which the Transaction makes reaching terms of coordination possible or easier, as any coordination post-Transaction would not be sustainable in light of the likely reaction of outsiders, as set out below.

Sustainability of coordination: Monitoring deviations

(63) For similar reasons as outlined above, the evidence is mixed on whether the worldwide market for butyl rubber is sufficiently transparent to allow the combined entity and ExxonMobil to monitor deviations from any hypothetical coordination.

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70 Responses to questions 27 and 28 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber* – see also footnote 46.

71 Responses to questions 21 and 23 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

72 See chart in page 2 of *M.9410 – Saudi Aramco – SABIC – response to follow up question on RFI 7*.

73 [Information on information flow mechanisms in the Kemya JV arrangements], they were provided to the Commission directly by ExxonMobil as part of a submission made by ExxonMobil on 03.02.2020.

74 Form CO, Annex 20 – Coordinated Effects Analysis – Part 2, paragraph 5.

On the one hand, there are few significant suppliers worldwide and global tyre producers account for 70% of worldwide purchases of butyl rubber. Prices are generally linked to raw material costs, and are as a result updated/indexed on average monthly or less.[75] That said, contracts (and so, the Commission understands, the pricing mechanism that applies throughout the contract) are updated less frequently – at least yearly, and typically every two years or more.[76] Customers consider that there is "moderate" price transparency, likely as price movements are linked to raw material costs (though, importantly, suppliers consider price transparency to be low). Moreover, contracts are negotiated bilaterally, and the market investigation did not provide any evidence to suggest that suppliers would have insight into prices an individual customer agrees with another supplier. For the reasons noted in paragraph (61) above, the creation of a structural link via the Kemya JV does not appear to affect Saudi Aramco or ExxonMobil's ability to monitor deviations.

(64) Overall, however, it is not necessary to conclude on whether market transparency is such that monitoring allows for the threat of timely and sufficient retaliation to any deviation, as any coordination post-Transaction would not be sustainable in light of the likely reaction of outsiders, as set out below.

Sustainability of coordination: Deterrent mechanisms

(65) The Notifying Party has not provided the Commission with sufficient evidence to exclude that there could be a sufficiently severe and credible deterrent mechanism to convince Saudi Aramco or ExxonMobil to adhere to the terms of any hypothetical coordination. On the one hand, the market investigation indicated that the gain from deviating at the right time could be significant. Contracts for butyl rubber are renegotiated at least yearly, and typically every two years or more. The top 10 global tyre manufacturers are very significant customers of butyl rubber, representing 70% of worldwide demand.[77] Most customers multi-source, consider that there are no barriers to switching other than the need to qualify the supplier's plant and product, and indeed have switched butyl rubber supplier in the last three years.[78] The Notifying Party provides an indicative example that illustrates the potential gain from deviation – in 2012, […] (one of the world's top 5 largest tyre producers) switched all of its worldwide butyl rubber purchases away from Saudi Aramco to Russian manufacturers, as they offered lower prices.[79]

(66) On the other hand, Saudi Aramco and SABIC appear to have significant sale/purchase relations with ExxonMobil that might (in principle) allow for retaliation outside the butyl rubber market.[80] The Notifying Party has not identified

75 Responses to question 23.3 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

76 Responses to question 23.2 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

77 Form CO, paragraph 601.

78 Responses to question 14, 25 and 26 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

79 Form CO, Annex 20 – Coordinated Effects Analysis – Part 2, paragraphs 53.

80 To take just one product as an example, SABIC supplied $[…] of ethylene to ExxonMobil and procured $[…] of ethylene from it. Form CO, Annex 20 – Coordinated Effects Analysis – Part 2, paragraphs 94 and 96.

the full extent of these sale/purchase relations, the value of these relations by product, or the extent to which these arrangements may allow for retaliation.[81] The Commission therefore is not able to exclude that, if non-compliance can be identified, a timely and effective deterrence mechanism would be available. For completeness, termination of the Kemya JV (or its butyl rubber production) does not appear to be an effective deterrence mechanism [Information on the Kemya JV arrangements].[82]

(67) Overall, however, it is not necessary to conclude on whether a sufficiently severe and credible deterrent mechanism is available, as any coordination post-Transaction would not be sustainable in light of the likely reaction of outsiders, as set out below.

Sustainability of coordination: Reaction of outsiders

(68) The sustainability of any attempted coordination between Saudi Aramco and ExxonMobil is likely to be jeopardised by the reaction of non-coordinating competitors and customers.

(69) First, as regards competitors, Saudi Aramco and ExxonMobil's rivals are well-placed to jeopardise any coordination and are incentivised to do so. There is global overcapacity for butyl rubber compared with demand, with operating rates declining from approximately 81% in 2010 compared with 72% in 2017.[83] The market investigation confirmed that a number of competitors (to Saudi Aramco and ExxonMobil) have been increasing worldwide butyl rubber production capacity in recent years and are continuing to do so.[84] The market investigation pointed to expansions by Chambroad and Cenway Technologies, as well as a 120 kilotons-per-annum expansion by a Reliance-Sibur joint venture in Jamnagar, India.[85] Significant expansions are also planned by NKNK in Russia in 2020 (adding 55 kilotons-per-annum to an existing plant) and Shandong Senchi in China in 2020 (building a new butyl rubber plant with capacity of 60 kilotons-per-annum).[86] The market investigation confirmed that these competitors that have expanded capacity (Chambroad, Cenway Technologies, Reliance-Sibur, NKNK, Shandong Senchi) are all credible suppliers of butyl rubber in the EEA and worldwide.[87] As such, competitors operating with spare capacity and, in particular, with recent expansions, act as a significant constraint on Saudi Aramco and ExxonMobil and are likely to make any attempted coordination unsustainable.

(70) Second, as regards customers, the market investigation has confirmed that customers multi-source, can switch supplier and that the majority have done so in the last three

81 Form CO, Annex 20 – Coordinated Effects Analysis – Part 2, paragraphs 92-96.

82 Form CO, Annex 20 – Coordinated Effects Analysis – Part 2, paragraphs 20, 97-104.

83 IHS Markit report, "*Butyl Elastomers*", 15 August 2018, p.13.

84 Responses to questions 27 and 28 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

85 Responses to questions 27 and 28 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber* – see also footnote 46.

86 IHS Markit Report "*Butyl Elastomers*" 15 August 2018, p. 28.

87 Responses to questions 16, 17 and 18 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

years.[88] Indeed, for at least the global tyre manufacturers, butyl rubber is a relatively homogenous product across different suppliers.[89] As outlined in paragraph (69) above, global tyre manufactures account for a significant proportion of the market and the real risk of losing such a customer is likely to make coordination unsustainable. As a result, the risk of a large customer tempting deviation or reacting to coordination by switching to a non-coordinating firm is high. No material concerns were raised regarding butyl rubber, and the vast majority of customers responding to the market investigation confirmed that they consider they will continue to have access to a sufficient choice of credible suppliers post-Transaction, and that the Transaction will not have any impact on price, quality, choice or innovation regarding butyl rubber.[90]

Conclusion

(71) In conclusion, for the reasons set out above, the Commission considers that the Transaction does not raise serious doubts as a result of horizontal non-coordinated or coordinated effects concerning butyl rubber. As regards non-coordinated effects, this is in particular because of the Parties' modest combined market shares and the negligible increment from SABIC. As regards coordinated effects, the creation of a structural link between Saudi Aramco and ExxonMobil will not increase the risks of coordination, in particular because any attempted coordination will not be sustainable given the likely response by competitors (who have significant spare capacity and continue to expand capacity and are well placed to compete for customers) and customers (who are well placed to switch very significant orders either to new suppliers or to tempt deviation).

6.2. Ethylene glycol ("EGs")

6.2.1. Market definition

(72) Ethylene glycols ("EGs") are colourless, odourless, relatively non-volatile liquids. EGs are mainly produced from ethylene oxide ("EO") (around 90%) or, less frequently, from coal.[91] The production of EGs from EO results in the simultaneous production of three types of EG: mono-ethylene glycol ("MEG") (around 90% of the production), and the co-products di-ethylene glycol ("DEG") and tri-ethylene glycol ("TEG") (which account for only around 9% and 1% of EG production).

(73) **MEG** is primarily used as the main input in the production of polyesters, which are subsequently used in the production of fibres, films and resins used to make plastic (PET) bottles. MEG is also used as an input material in the production of polyalkylene glycol. In addition, due to its low freezing point, MEG is also used in antifreeze solutions.

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[88] Responses to question 14, 25 and 26 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

[89] At least within each sub-type of butyl rubber (e.g. halogenated chlorobutyl rubber from different suppliers). Responses to question 8 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*

[90] Responses to questions 30 and 31.2 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

[91] Only the so-called "coal to MEG" processes can produce mono-ethylene glycol without di-ethylene glycol and tri-ethylene glycol as by-products.

(74) **DEG** is used as a raw material for the production of polyurethanes and unsaturated polyester resins. Similarly to MEG, DEG can also be blended into antifreeze solutions.

(75) **TEG** is used for the dehydration of gases, the manufacture of insecticides, the synthesis of some organic derivatives and the production of plasticizers.

6.2.1.1. Product market definition

The Commission's precedents

(76) The Commission has considered the market for EGs and its potential sub-segments in previous decisions.[92] While noting that MEG, DEG and TEG are used in different applications, the Commission acknowledged that from a supply-side perspective these three products were at that time invariably produced together and in the same proportions.[93] The Commission ultimately left open whether EGs constitute a separate single product market or whether they should be further sub-segmented between MEG, DEG and TEG.[94]

The Notifying Party's view

(77) The Notifying Party submits that it does not disagree with the Commission's precedents, but considers that for the purposes of the present Decision, the exact product market definition can be left open.[95]

The Commission's assessment

(78) The majority of respondents to the market investigation indicated that EGs are not substitutable with other products, explaining that EGs have specific properties and applications that are challenging to replicate at a competitive level.[96] Further, while the majority of respondents consider that the different types of EG (i.e. MEG, DEG and TEG) are likely not substitutable with each other from a customer perspective in light of their different properties, responses to the market investigation indicated that the different types of EGs are typically produced together and through the same process from EO.[97]

(79) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for EGs can be left open,

92 See case COMP/M.4094 - *Ineos/BP Dormagen*, decision of 10.08.2006. See also cases COMP/M.4005 - *Ineos/Innovene*, decision of 09.12.2005, COMP/M.3467 - *Dow Chemicals/PIC/White Sands JV*, decision of 28.06.2004 and COMP/M.2345 - *Deutsche BP/Erdölchemie*, decision of 26.04.2001.

93 New so-called "coal to MEG" processes now allow for the production of MEG only, using coal as an input. However, these technologies were not available at the time of case COMP/M.4094 - *Ineos/BP Dormagen*.

94 The Commission also considered and rejected a product market encompassing both EGs and purified EO. It found that there is a relationship between the production of purified EO and EGs (as they are produced from the same raw material), but as the products are made using different equipment and processes it concluded that there is no supply-side substitutability between them. See case COMP/M.4094 - *Ineos/BP Dormagen*, decision of 10.08.2006, paragraph 55.

95 Form CO, paragraphs 263-264.

96 Responses to question 3 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols.*

97 Responses to questions 4 and 6.1, 10.3, 11 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols.*

since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. EGs overall or segmented between MEG, DEG and TEG).

6.2.1.2. Geographic market definition

The Commission's precedents

(80) In previous decisions, the Commission has considered whether the relevant geographic market for EGs and its potential sub-segments could be at least EEA-wide, Western Europe, or possibly global in scope, but ultimately left open the exact geographic market definition.[98]

The Notifying Party's view

(81) The Notifying Party submits that it does not disagree with the Commission's precedents, but it considers that for the purposes of the present Decision, the exact geographic market definition can be left open. [99]

The Commission's assessment

(82) The market investigation indicated that the relevant geographic market for EGs is likely worldwide, or at least EEA-wide.[100] All respondents consider the market for EGs to be worldwide, pointing to significant patterns of trade worldwide, the ease of transporting EGs and the fact that MEG, DEG and TEG are commodity products.[101] Customers responding to the market investigation confirmed that they can and do source EGs from suppliers based outside the EEA for use in their facilities within the EEA.[102] While some respondents identified that there are some tariffs and import duties between regions, they emphasised that trade flows for EGs remain global.[103]

(83) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for EGs can be left open between EEA and worldwide, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition.

6.2.2. *Competitive assessment*

(84) Both Parties supply EGs (including MEG, DEG and TEG). SABIC is active in the EEA and worldwide, whereas Saudi Aramco's activities are more limited as it only

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98 See cases COMP/M.4094 - *Ineos/BP Dormagen*, decision of 10.08.2006, COMP/M.4005 - *Ineos/Innovene*, decision of 09.12.2005, COMP/M.3467 - *Dow Chemicals/PIC/White Sands JV*, decision of 28.06.2004 and COMP/M.2345 - *Deutsche BP/Erdölchemie*, decision of 26.04.2001.

99 Form CO, paragraphs 265-267.

100 The market investigation strongly indicated that a market limited to Western Europe would not be appropriate for EGs or any of its sub-segments for the purposes of the present Decision, so it is not considered further in this Decision.

101 Responses to question 7 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols.*

102 Responses to question 9 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols.*

103 Responses to questions 10.1 and 10.2 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols.*

sells EGs in China and Saudi Arabia.[104] Therefore, the Parties' activities do not overlap at EEA level, but do at worldwide level.

(85) The Transaction gives rise to horizontally affected markets, only at the worldwide level, for the supply of EGs (overall), and of MEG and DEG (separately).[105]

(86) The Notifying Party's estimates of the Parties' and their largest competitors' market shares for EGs, MEG, and DEG worldwide are shown in *Table 5* below.

Table 5: Market share estimates for EGs, MEG and DEG worldwide (in 2018, by volume)

EGs (overall)			**MEG**			**DEG**		
Supplier	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[0-5]%*	*Saudi Aramco*	*[…]*	*[0-5]%*	*Saudi Aramco*	*[…]*	*[0-5]%*
SABIC	*[…]*	*[20-30]%*	*SABIC*	*[…]*	*[20-30]%*	*SABIC*	*[…]*	*[20-30]%*
Combined	**[…]**	**[20-30]%**	**Combined**	**[…]**	**[20-30]%**	**Combined**	**[…]**	**[20-30]%**
Royal Dutch Shell	[…]	[5-10]%	Royal Dutch Shell	[…]	[5-10]%	SINOPEC	[…]	[5-10]%
Formosa	[…]	[5-10]%	Formosa	[…]	[5-10]%	Formosa	[…]	[5-10]%
DowDuPont	[…]	[5-10]%	DowDuPont	[…]	[5-10]%	Reliance Industries	[…]	[5-10]%
SINOPEC	[…]	[0-5]%	SINOPEC	[…]	[0-5]%	Royal Dutch Shell	[…]	[5-10]%
PIC	[…]	[0-5]%	PIC	[…]	[0-5]%	DowDuPont	[…]	[0-5]%
Lotte Chemical	[…]	[0-5]%	Lotte Chemical	[…]	[0-5]%	PIC	[…]	[0-5]%
Reliance Industries	[…]	[0-5]%	Reliance Industries	[…]	[0-5]%	ExxonMobil	[…]	[0-5]%
ExxonMobil	[…]	[0-5]%	ExxonMobil	[…]	[0-5]%	Lotte Chemical	[…]	[0-5]%
Others	*[…]*	*[30-40]%*	*Others*	*[…]*	*[30-40]%*	*Others*	*[…]*	*[40-50]%*
Total market	**[…]**	**100%**	**Total market**	**[…]**	**100%**	**Total market**	**[…]**	**100%**

Source: The Parties' sales and IHS Markit competitors' sales and market size estimates.

The Notifying Party's view

(87) The Notifying Party submits that the Parties' combined market shares are modest regardless of the product market definition adopted (less than [20-30]%). The Notifying Party claims that Saudi Aramco is a small supplier worldwide, with a market share of only [0-5]%, who does not compete closely with SABIC. The Notifying Party also submits that the combined entity will continue to be constrained post-Transaction by a number of competitors with market shares greater than that of the increment from Saudi Aramco (as outlined in *Table 5* above).[106] Moreover, the Notifying Party submits that barriers to entry are low, and that customers are large manufacturers with significant buyer power and the ability to easily switch between suppliers.

104 Aramco is active in the production of EG through joint ventures with Sumitomo in Saudi Arabia and Sinopec in China. […].

105 For completeness, the market for the supply of TEG worldwide is not horizontally affected as the Notifying Party estimates that the Parties' combined share in the supply of TEG worldwide would be [5-10]% in 2018 (by volume). In addition, no affected market arises under any plausible product market at EEA level because, as mentioned in paragraph (84) of the Decision, Saudi Aramco is not active in the EEA for the supply of EGs.

106 Form CO, paragraphs 278-345.

The Commission's assessment

(88) As outlined in paragraph (85) above, the Transaction only gives rise to horizontally affected possible markets in the supply of EGs, MEG or DEG at worldwide level.

(89) At worldwide level, the Parties' combined market shares range between [20-30]% and [20-30]%, depending on whether EGs are considered as a whole or if the product market is segmented between MEG and DEG. Irrespective of the product market definition considered, the increment brought by Saudi Aramco is small ([0-5]% or less) and the HHI increment remains below 150.

(90) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that Saudi Aramco is a relatively small supplier of EGs, MEG and DEG worldwide.[107] The majority of respondents confirmed that, post-Transaction, there will remain a number of strong competitors in the market to constrain the combined entity, such as Shell, Sinopec, BASF, PIC, Lotte and Formosa and that customers will continue to have a sufficient choice of credible suppliers to meet their needs.[108] Moreover, the majority of customers responding to the market investigation confirmed that they typically procure EGs from multiple suppliers, can switch relatively easily, and have switched supplier in the last 3 years.[109] The majority of respondents considered that it is relatively easy for an existing supplier to expand its sales of EGs or begin selling in a new location.[110] Finally, the majority of respondents to the market investigation did not consider that the Transaction would have any negative impact on prices, quality, choice or innovation for the worldwide market for EGs (or its sub-segments). In addition, no material concerns were raised regarding the Parties' horizontal overlap in EGs.[111]

(91) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for EGs, regardless of whether the relevant geographic market is considered EEA-wide or worldwide or if the product market is EGs or sub-segmented between MEG, DEG and TEG.

6.3. Ethylene propylene terpolymer rubber and ethylene propylene co-polymer (together, "EP(D)M")

6.3.1. Market definition

(92) Ethylene propylene terpolymer rubber ("EPDM") is a synthetic rubber obtained by polymerisation of ethylene and propylene in the presence of a diene component.

107 Responses to questions 13 and 14 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols*.

108 Responses to questions 12, 13 and 20 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols*.

109 Responses to questions 16 and 17 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols*.

110 Responses to question 19 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols*.

111 Responses to questions 22 and 23 of *Q2 - Questionnaire to competitors and customers of Ethylene glycols*.

(93) The ethylene-propylene elastomer family also comprises another type of rubber, which is ethylene propylene co-polymer ("EPM"). EPDM accounts for about 85% of the total world production of EP(D)M and EPM accounts for the remaining 15%. For the purposes of this Decision, EPDM and EPM will be referred to jointly as "EP(D)M".

(94) Owing to its resistance to ozone, aging, weather, and high temperatures, EP(D)M has multiple uses in the automotive industry, such as the manufacture of sealing systems, radiator hoses, brake parts, belts, as well as other rubber-moulded goods. EP(D)M is also blended with other polymers in order to improve their physical properties, such as impact and chemical resistance. Finally, EP(D)M is used in the construction industry for the waterproofing of roofs, window-seals and facades, in oil additives (mainly EPM), as well in various rubber goods, such as soccer balls.

6.3.1.1. Product market definition

The Commission's precedents

(95) In *Dow/DDE*, the Commission identified a potential separate product market for EPDM.[112] Moreover, in *Dow/DuPont*, the Commission had defined product markets for synthetic elastomers according to their chemical composition.[113]

The Notifying Party's view

(96) The Notifying Party submits that EPDM and EPM should be considered as part of the same relevant product market, given that (i) EPM and EPDM exhibit common properties, and are largely substitutable from a demand-side perspective, (ii) the two products are manufactured on the same production lines, and switching between the two is possible in a timely and cost-effective manner, suggesting a strong supply-side substitutability between the two products, and (iii) EPDM is estimated to account for about 85% of the total world production of EP(D)M.[114]

The Commission's assessment

(97) The majority of respondents to the market investigation indicated that EPDM is not substitutable with other products due to its specific characteristics.[115] This likely includes EPM, with which EPDM is substitutable only for certain applications.[116] Furthermore, the majority of the demand for EP(D)M is from the automotive industry, which requires a number of approvals to meet safety and performance standards, making EP(D)M difficult to substitute for customers.[117]

(98) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for EP(D)M can be left

112 See case COMP/M.3733 - *Dow/DDE*, decision of 26.04.2005.

113 See case IV/M.663 - *Dow/DuPont*, decision of 21.02.1996.

114 Form CO, paragraphs 680-683.

115 Responses to question 3 for *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

116 Responses to question 3 for *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

117 Responses to question 17 for *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. EP(D)M overall, or segmented between EPDM and EPM).

6.3.1.2. Geographic market definition

The Commission's precedents

(99) In cases involving synthetic elastomers, the Commission has previously considered that the relevant geographic market could be at least EEA-wide, and probably larger, though it ultimately left open the precise geographic market definition.[118]

The Notifying Party's view

(100) The Notifying Party considers that the geographic market for EP(D)M is global or at least EEA-wide in scope, as EP(D)M is traded globally, with significant imports and exports between continents.[119] Moreover, the Notifying Party points out that major EP(D)M manufacturers' production facilities are able to serve customers around the globe. Further, the Notifying Party emphasises that the main customers for EP(D)M are global automotive players and compounders, with enough sophistication to easily switch between suppliers and procure EP(D)M from suppliers located in different regions across the globe. Lastly, the Notifying Party considers that neither transportation costs, nor import duties constitute significant barriers to trading EP(D)M across regions.

The Commission's assessment

(101) All respondents to the market investigation considered that the relevant geographic market for EP(D)M is worldwide.[120] Respondents to the market investigation considered that suppliers with plants located outside the EEA could credibly supply customers located in the EEA, and a majority of them expressed that they already did so. Respondents also pointed to the lack of significant barriers to purchasing worldwide.[121]

(102) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for EP(D)M, EPDM, or EPM can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

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118 See cases IV/M.663 - *Dow/DuPont*, decision of 21.02.1996 and COMP/M.3733 - *Dow/DDE*, decision of 26.04.2005. In case COMP/M.3733 - *Dow/DDE*, even though EPDM was defined as a separate product market, the Commission did not define the geographic market for EPDM, since this product was not affected under any plausible geographic market.

119 Form CO, paragraphs 684-688.

120 Responses to question 5 for *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

121 Responses to questions 6, 7 and 9 for *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

6.3.2. *Competitive assessment*

(103) Both Parties supply EP(D)M in the EEA and worldwide. Saudi Aramco produces EP(D)M through its affiliates Arlanxeo and Petro Rabigh (a joint venture with Sumitomo). Arlanxeo has manufacturing facilities in the Netherlands, Brazil, China and the United States. Petro Rabigh has a manufacturing facility in Rabigh, Saudi Arabia.

(104) Saudi Aramco is one of the leading EP(D)M suppliers, with market shares of [10-20]% at worldwide level, and [20-30]% at EEA level in 2018 (see *Table 6* below).

(105) SABIC is a much smaller player in EP(D)M, with market shares of [0-5]% at both worldwide and EEA levels in 2018. Moreover, SABIC is not active in EPM: SABIC only produces and sells EPDM. It is active in this segment through the Kemya JV, a 50/50 joint venture between SABIC and ExxonMobil that started producing EPDM in 2016. Consequently, SABIC does not have any manufacturing facility in the EEA.

(106) At worldwide level, the Transaction does not give rise to any potentially affected markets for EP(D)M.

(107) At EEA level, the Transaction gives rise to an affected market in the supply of EP(D)M, as well as on the narrower plausible sub-segment of EPDM.

(108) The Notifying Party's estimates of the Parties' and their competitors' market shares in EP(D)M in the EEA are shown in *Table 6* below:

Table 6: Market share estimates for EP(D)M in the EEA, 2018 (by volume)

Supplier	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[20-30]%*
SABIC	*[…]*	*[0-5]%*
Combined	**[…]**	**[20-30]%**
ENI	[…]	[20-30]%
ExxonMobil	[…]	[10-20]%
DowDuPont	[…]	[10-20]%
Lion Chem Capital	[…]	[5-10]%
JSR	[…]	[0-5]%
Kumho	[…]	[0-5]%
NKNK	[…]	[0-5]%
Lotte Chemical	[…]	[0-5]%
Others	[…]	[5-10]%
Total Market	*[…]*	*100%*

Source: The Parties' sales and IHS Markit competitors' sales and market size estimates

(109) Regarding the narrower plausible market for EPDM, the Notifying Party estimates that the Parties' shares would remain below [20-30]% worldwide, and would be [20-30]% in the EEA (compared with [20-30]% for EP(D)M). The Notifying Party did not provide market share estimates for its competitors, however, as it submits that the competitive conditions for EP(D)M and EPDM are similar, given that EPDM accounts for an estimated 85% of total global production of EP(D)M.

The Notifying Party's view

(110) The Notifying Party considers that the Transaction is unlikely to represent a significant impediment to effective competition in the market for EP(D)M or

EPDM.[122] In particular, the Notifying Party submits that the market share increment brought by SABIC is *de minimis* (below [0-5]%), and that the Parties are not close competitors for EP(D)M, including because Saudi Aramco is a well-established global supplier while SABIC is a new and fringe supplier with small capacity. The Notifying Party adds that SABIC is not a maverick entrant that could disrupt the segment, given that EP(D)M is a commodity product and that SABIC's product and production methods are the same as those of its competitors. Moreover, the Notifying Party submits that the combined entity would continue, post-Transaction, to face competition from a number of strong, well-established competitors, such as ENI, ExxonMobil and DowDuPont, with respective market shares in 2018 of [20-30]%, [10-20]% and [10-20]%[123], as well as from other smaller players. Lastly, the Notifying Party considers that the barriers to enter the EP(D)M business are minimal, and that the Parties' largest customers, who are global automotive manufacturers and suppliers, have significant buyer power.

The Commission's assessment

(111) As outlined in paragraph (107) above, the Transaction only gives rise to a horizontally affected market in the supply of EP(D)M and EPDM in the EEA.

(112) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable.[124] The Parties' combined market share for EP(D)M in the EEA was therefore around [20-30]% in 2018.

(113) Regarding potential non-coordinated effects, the Commission notes that the increment brought by SABIC is small (below [0-5]%), and the HHI increment remains below 150. Likewise, on a narrower segmentation for EPDM, the Parties' combined market share remains modest, at [20-30]%.

(114) In addition, the results of the market investigation broadly indicated that the Parties are not each other's closest competitors for EP(D)M in the EEA. While Saudi Aramco is firmly ranked among top suppliers such as ENI or Kumho, SABIC is considered by respondents to the market investigation to be a lesser competitor in this market. This holds true in a narrower segment for EPDM as well.[125] Even though the majority of suppliers expressed that entering or expanding into the market for the supply of EP(D)M in the EEA could be challenging, the majority of customers confirmed that, post-Transaction, they expected that there will remain a sufficient pool of credible suppliers to meet their needs.[126] Moreover, the majority of customers responding to the market investigation confirmed that they typically procure EP(D)M from a variety of suppliers, and, even though they have expressed that switching can be difficult given the need to qualify suppliers of EP(D)M, a large

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122 Form CO, paragraphs 689-746.

123 Source: Notifying Party's estimates.

124 Responses to questions 11, 12 and 13 of *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

125 Responses to questions 11, 12 and 13 of *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

126 Responses to questions 17, 18 and 19 of *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

majority expressed that they had in fact switched suppliers over the last 3 years.[127] Lastly, the majority of respondents to the market investigation did not consider that the Transaction would have any negative impact on prices, quality, choice or innovation for the EEA market for EP(D)M (nor for EPDM separately) and no material concerns were raised regarding the Parties' horizontal overlap for these products.[128]

(115) Regarding potential coordinated effects, while the three largest competitors (Saudi Aramco, ExxonMobil and ENI) appear to have similar market shares in the supply of EP(D)M in the EEA ([10-20]-[20-30]%), this market does not appear to be concentrated. The HHI for the market for EP(D)M in the EEA will indeed remain below 1650 post-Transaction and the market investigation confirmed that there are a number of smaller, but credible competitors outside these top three suppliers, such as DowDupont, Lion Chem Capital and Kumho.[129] Moreover, because SABIC only accounts for a share of [0-5]% of the market, the mere reduction in the number of firms in the market for EP(D)M in the EEA (through the loss of SABIC as a competitor) does not appear to be a factor that facilitates coordination. In light of these elements, as well as the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to potential coordinated effects in the market of EP(D)M in the EEA.[130]

(116) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for EP(D)M, regardless of whether the relevant product market is considered to be EP(D)M or EPDM.

6.4. Polyethylene

6.4.1. Market definition

(117) Polyethylene is a thermoplastic obtained through the polymerisation of ethylene, either alone or with a co-monomer, such as butene, hexene or propene. It is one of the most commonly used plastics; polyethylene resins are used in a wide array of applications, including films, coatings, packaging, bags, plastic pipes, bottles and various moulded plastic products. There are three main categories of polyethylene: high density polyethylene ("HDPE"), low density polyethylene ("LDPE") and linear low density polyethylene ("LLDPE").

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127 Responses to questions 14, 15 and 16 of *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

128 Responses to questions 20 and 21 of *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

129 Responses to questions 11, 12 and 13 of *Q4 - Questionnaire for competitors and customers of Ethylene propylene terpolymer rubber (EPDM)*.

130 For completeness, the Transaction would create a structural link between Saudi Aramco and ExxonMobil through the Kemya JV. However, as outlined in paragraph (61) in relation to butyl rubber, this structural link is not likely to increase the likelihood that Saudi Aramco and ExxonMobil can reach terms of coordination, as neither JV partner receives commercially sensitive information about the other. Moreover, ENI (the second largest player) is not a party to the JV.

(118) **HDPE** is manufactured by low pressure processes and is a stiff product with good chemical resistance and low permeability to gases and vapours due to its high density. It is mainly used in the manufacture of drain pipes, rigid containers (e.g. milk jugs, detergent bottles), toys and large blow mouldings (drums, automotive fuel tanks, large pipes).

(119) **LDPE** is manufactured by high pressure processes and is a more flexible product than HDPE, while still being crack resistant and having good water and gas resistance. It is used to produce more flexible plastic products, mainly films and coatings, as well as car bumpers, garden hoses and grocery bags.

(120) **LLDPE** was developed as a low-pressure manufacturing alternative to the high pressure LDPE process. It is stretchable and flexible, but is also resistant to high impact and puncture damage. LLDPE is principally used in film or packaging applications as well as in injection or roto-moulded articles, membranes and pipes. Within the LLDPE family, there are three main types depending on the co-monomer used in the manufacturing process: "C4 LLDPE", which uses butene as co-monomer, "C6 LLDPE", which uses hexene as co-monomer and "C8 LLDPE", which uses octene as co-monomer.

6.4.1.1. Product market definition

The Commission's precedents

(121) The Commission has considered the market for polyethylene and its potential sub-segments in previous decisions.[131] The Commission considered that HDPE constitutes a relevant market separate from LDPE and LLDPE in light of differences in the production methods, performance characteristics and end uses.[132] The Commission has also found that C8 LLDPE forms part of a separate relevant product market from LDPE as well as from other types of LLDPE (i.e. from C4 and C6 LLDPE).[133] However, the Commission has left open whether there is a single relevant product market for LDPE, C4 LLDPE and C6 LLDPE, or whether LDPE forms part of a separate relevant product market from C4 LLDPE and C6 LLDPE (together).[134]

The Notifying Party's view

(122) The Notifying Party considers that polyethylene could either be considered a single relevant product market or that it could be segmented between HDPE, LDPE and LLDPE.[135]

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131 See case COMP/M.1671 - *Dow Chemical/Union Carbicide*, decision of 3.05.2000. See also cases COMP/M.2345 - *Deutsche BP/ Erdölchemie*, decision of 26.04.2001, COMP/M.2806 *SABIC/DSM Petrochemicals*, decision of 18.06.2002, COMP/M.4426 *SABIC/Huntsman*, decision of 20.12.2006, COMP/M.4744 *INEOS/Borealis*, decision of 24.08.2007, COMP/M.7465 - *Arkema/Bostik*, decision of 28.01.2015.

132 See case COMP/M.1671 - *Dow Chemical/Union Carbicide*, decision of 3.05.2000 and case COMP/M.708 *Exxon/DSM*, decision of 15.10.1996.

133 See case COMP/M.1671 - *Dow Chemical/Union Carbicide*, decision of 3.05.2000.

134 See cases COMP/M.2345 - *Deutsche BP/ Erdölchemie*, decision of 26.04.2001, COMP/M.2806 *SABIC/DSM Petrochemicals*, decision of 18.06.2002.

135 Form CO, paragraphs 143-145.

The Commission's assessment

(123) The majority of respondents to the market investigation confirmed that polyethylene is not substitutable with other products in light of its product characteristics, explaining that for a number of applications polyethylene cannot be substituted with other materials without significant, costly and long-term changes to customers' production processes.[136] The majority of respondents confirmed that HDPE has different characteristics from LDPE and LLDPE, and so cannot be used as a substitute to them. The majority of respondents further indicated that substitutability between LDPE and LLDPE is limited as their different properties (such as different levels of resistance to heat) make them more suitable for different end applications.[137]

(124) The results of the market investigation indicated that LLDPE could be further segmented between C4, C6 and C8 LLDPE, with the caveat that C4 LLDPE and C6 LLDPE could be substitutable to an extent depending on the end use application.[138] It was noted that there are price differences between the three products, that customers may need to change their processes for manufacturing the end products to switch between C4, C6 and C8 LLDPE, and that it is not straightforward for suppliers to switch production between them.

(125) In any event, the Commission considers that, for the purposes of this Decision, the exact scope of the product market definition for polyethylene can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition.

6.4.1.2. Geographic market definition

The Commission's precedents

(126) In previous decisions, the Commission has considered the relevant geographic market for polyethylene and its potential sub-segments to be Western Europe or EEA-wide, and possibly global in scope.[139] However, the Commission ultimately left the geographic market for polyethylene and its potential sub-segments open.[140]

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136 Responses to question 3 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

137 Responses to questions 4 and 5 of *Q5 - Questionnaire to competitors and customers of Polyethylene*. Additionally, the majority of respondents did not consider LDPE to be substitutable with C4, C6 or C8 LLDPE - see responses to question 6.3 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

138 Responses to questions 6.1 and 6.2 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

139 See cases COMP/M.4744 - *INEOS/Borealis*, decision of 24.08.2007, COMP/M.7465 - *Arkema/Bostik*, decision of 28.01.2015 and COMP/M.1671 - *Dow Chemical/Union Carbicide*, decision of 3.05.2000.

140 See cases COMP/M.4744 - *INEOS/Borealis*, decision of 24.08.2007, COMP/M.7465 - *Arkema/Bostik*, decision of 28.01.2015 and COMP/M.1671 - *Dow Chemical/Union Carbicide*, decision of 3.05.2000.

The Notifying Party's view

(127) The Notifying Party submits that the geographic market for polyethylene and its sub-segments is EEA-wide or global, noting that polyethylene is widely traded, that there are significant imports into Europe, and that there are limited barriers to trade.[141]

The Commission's assessment

(128) The market investigation indicated that the relevant geographic market for polyethylene (and its plausible sub-segments) is likely worldwide.[142] Respondents pointed out that there are significant patterns of trade worldwide and that the same main suppliers are active worldwide.[143] Competitors explained that they can readily supply EEA customers from their production facilities based outside the EEA.[144] Polyethylene customers confirmed that they can and do source polyethylene from suppliers based outside the EEA for use in their facilities within the EEA.[145] On the other hand, respondents identified that there are some barriers to trading worldwide, namely tariffs, transport costs and long-lead times, though they emphasised that trade flows remain global.[146]

(129) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for polyethylene can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (EEA or worldwide).

6.4.2. Competitive assessment

(130) Both Parties supply polyethylene (including HDPE, LDPE and C4, C6 and C8 LLDPE) worldwide and in the EEA.

(131) At worldwide level, the Transaction does not give rise to any horizontally affected markets for polyethylene (or its plausible sub-segments).[147]

(132) In the EEA, the Transaction only gives rise to horizontally affected markets if the following plausible product markets: (i) the supply of C4 LLDPE,[148] (ii) the supply of C4 and C6 LLDPE, and (iii) the supply of LDPE, C4 and C6 LLDPE.

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141 Form CO, paragraphs 146-149.

142 The market investigation strongly indicated that a market limited to Western Europe would not be appropriate for polyethylene or any of its sub-segments for the purposes of the present Decision, so it is not considered further in this Decision.

143 Responses to question 7 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

144 Responses to question 8 of *Q5 - Questionnaire to competitors and customers of Polyethylene*

145 Responses to question 9 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

146 Responses to question 10 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

147 For completeness, the Notifying Party estimates that the Parties' combined worldwide market share in the supply of polyethylene was [5-10]% in 2018 (by volume) and that their combined market share would not exceed 20% under any plausible sub-segmentation at worldwide level. The Notifying Party also estimates that the Parties' combined market share in the EEA would be [10-20]% for polyethylene, and would only exceed 20% in the sub-segmentations listed in the paragraph.

148 There is no affected market in relation to C6 LLDPE as the Parties' market shares are only [5-10]% in the EEA in 2018.

(133) The Notifying Party's estimates of the Parties' and their largest competitors' market shares in these horizontally affected sub-segments are shown in Table 7 below.

Table 7: Market share estimates for C4 (only) / C4 and C6 LLDPE (together) / LDPE, C4 and C6 LLDPE (together) in the EEA, in 2018 (by volume)

C4 LLDPE			**C4 and C6 LLDPE**			**LDPE, C4 and C6 LLDPE**		
Supplier	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[0-5]%*	*Saudi Aramco*	*[…]*	*[0-5]%*	*Saudi Aramco*	*[…]*	*[0-5]%*
SABIC	*[…]*	*[30-40]%*	*SABIC*	*[…]*	*[20-30]%*	*SABIC*	*[…]*	*[10-20]%*
Combined	**[…]**	**[30-40]%**	**Combined**	**[…]**	**[20-30]%**	**Combined**	**[…]**	**[20-30]%**
DowDuPont	[…]	[20-30]%	DowDuPont	[…]	[20-30]%	INEOS	[…]	[10-20]%
ExxonMobil	[…]	[10-20]%	ExxonMobil	[…]	[10-20]%	DowDuPont	[…]	[5-10]%
INEOS	[…]	[5-10]%	INEOS	[…]	[5-10]%	LyondellBasell	[…]	[5-10]%
Mubadala Petroleum and Petrochemicals	[…]	[5-10]%	Mubadala Petroleum and Petrochemicals	[…]	[5-10]%	ExxonMobil	[…]	[5-10]%
ENI	[…]	[5-10]%	ENI	[…]	[5-10]%	Total	[…]	[5-10]%
-	-	-	NPC-Iran	[…]	[0-5]%	Mubadala Petroleum and Petrochemicals	[…]	[5-10]%
-	-	-	Total	[…]	[0-5]%	ENI	[…]	[5-10]%
-	-	-	OMV	[…]	[0-5]%	Repsol	[…]	[0-5]%
Others	[…]	[5-10]%	Others	[…]	[5-10]%	Others	[…]	[20-30]%
Total Market	**[…]**	**100%**	**Total market**	**[…]**	**100%**	**Total market**	**[…]**	**100%**

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(134) The Notifying Party submits that the Parties' combined shares are modest regardless of the product market definition adopted, that Saudi Aramco is a small supplier in the EEA and does not compete closely with SABIC, and that the combined entity will continue to be constrained by a number of competitors with shares greater than that of the increment from Saudi Aramco (as outlined in *Table 7* above).[149] Moreover, it submits that there is global spare capacity to constrain the combined entity, barriers to entry or expansion are low, and that customers are large manufacturers with significant buyer power and the ability to easily switch between suppliers. Therefore, the Notifying Party claims that the Transaction will not significantly impede effective competition in relation to these products.

The Commission's assessment

(135) As outlined in paragraph (131) above, the Transaction only gives rise to horizontally affected markets for polyethylene if the market is considered EEA-wide and sub-segmented such that C4 LLDPE (alone), C4 and C6 LLDPE (together) or LDPE, C4 and C6 LLDPE (together) are considered to form separate relevant product markets.

(136) In relation to C4 and C6 LLDPE in the EEA, the Parties' combined market shares range between [20-30]% and [20-30]%, depending on whether LDPE is considered

149 Form CO, paragraphs 161-202.

part of the relevant product market. The increment brought by Saudi Aramco is small ([0-5]% or less) and the HHI increment remains below 150. If the market is further segmented and only considered to be C4 LLDPE alone, the combined market share would amount to [30-40]%, the increment brought by Saudi Aramco would be [0-5]% and the HHI increment would be 256, in the context of a relatively fragmented market, where the HHI post-Transaction would remain below 2250.

(137) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that Saudi Aramco is a relatively small supplier of C4 and C6 LLDPE, as well as LDPE, in the EEA.[150] The majority of respondents confirmed that, post-Transaction, there will remain a number of strong competitors in the market to constrain the combined entity, such as DowDuPont,[151] ExxonMobil, INEOS, ENI and Total (as well as major global players such as Sinopec) and that customers will continue to have a sufficient choice of credible suppliers to meet their needs.[152] Moreover, the majority of customers responding to the market investigation confirmed that they typically procure C4 and C6 LLDPE, as well as LDPE, from multiple suppliers, can switch relatively easily and have switched supplier in the last 3 years.[153] The majority of respondents considered that it is relatively straightforward for an existing supplier to expand its sales of these products or to start selling them in a new country.[154] Finally, the majority of respondents to the market investigation did not consider that the Transaction would have any negative impact on prices, quality, choice or innovation for the EEA market for polyethylene (or its sub-segments) and no material concerns were raised regarding the Parties' horizontal overlap in relation to polyethylene or these sub-segments thereof.[155]

(138) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for polyethylene or its plausible sub-segments described above, regardless of whether the relevant geographic market is considered EEA-wide or worldwide, and of the product market definition adopted.

6.5. Polypropylene resins (PP resins)

6.5.1. Market definition

(139) Polypropylene resins ("PP resins") are thermoplastic polymers obtained by polymerisation of propylene, either alone or with a co-monomer, such as ethylene. They are low-cost commodity products, used in high volumes. PP resins are tough, flexible, lightweight and heat resistant. They are used in plastic applications, which

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150 Responses to questions 11, 13 and 14 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

151 As of June 1st, 2019, DowDuPont was separated into three independent companies (Dow, Dupont and Corteva). DowDuPont's performance plastics division remained within Dow.

152 Responses to questions 12, 13 and 20 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

153 Responses to questions 16, 17 and 18 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

154 Responses to question 19 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

155 Responses to question 21 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

include reusable containers, stationery, laboratory materials and packaging, among others.

6.5.1.1. Product market definition

The Commission's precedents

(140) In previous decisions, the Commission has considered whether the market for PP resins should be segmented between (i) homopolymers, (ii) impact (block) co-polymers and (iii) random co-polymers, but it has always left the exact product market definition open.[156]

The Notifying Party's view

(141) The Notifying Party submits that PP resins should be considered as a single relevant product market.[157]

The Commission's assessment

(142) The majority of respondents to the market investigation indicated that PP resins overall are not substitutable with other products and that, within PP resins, each type (i.e. homopolymer, impact (block) co-polymers and random co-polymers) is not substitutable with one another or with other products given the special properties that each type confers to the end product.[158] Moreover, the majority of respondents indicated that no further sub-division of the three types of PP resins is necessary.[159]

(143) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for PP resins can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. an overall market for PP resins, or sub-segments for homopolymers, impact (block) co-polymers and random co-polymers).

6.5.1.2. Geographic market definition

The Commission's precedents

(144) The Commission has previously left open whether the geographic market for PP resins was Western Europe, EEA-wide or global.[160]

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156 See cases COMP/M.8877 - *LyondellBasell Industries/A Schulman*, decision of 27.06.2018, COMP/M.4744 - *Ineos/Borealis*, decision of 24.08.2007, COMP/M.4426 - *SABIC/Huntsman Petrochemicals UK*, decision of 20.12.2006.

157 Form CO, paragraphs 373-374.

158 Responses to questions 3 and 4 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

159 Responses to question 5 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

160 See cases COMP/M.8877 - *LyondellBasell Industries/A Schulman*, decision of 27.06.2018, COMP/M.4744 - *Ineos/Borealis*, 24.08.2007, COMP/M.4426 - *SABIC/Huntsman Petrochemicals UK*, 20.12.2006.

The Notifying Party's view

(145) The Notifying Party submits that the geographic market for PP resins and its sub-segments is global or at least EEA-wide in scope, given the lack of trade barriers globally and in the EEA, the fact that PP resins are commodity products, and the fact that they can be easily transported for little cost (i.e. transport costs represent less than 5% of the product's total cost).[161]

The Commission's assessment

(146) The market investigation strongly indicated that the relevant geographic market for PP resins, as well as each of its sub-types, is likely worldwide or at least EEA-wide in scope.[162] The majority of respondents indicated that within the EEA there existed no major barriers to trading PP resins.[163] At worldwide level, the market investigation pointed to the existence of inter-regional product flows, which have been growing steadily for a number of years, customers' willingness to source globally, and customer's perception that suppliers located outside the EEA can credibly and competitively sell PP resins to customers in the EEA.[164]

(147) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for PP resins can be left open between EEA and worldwide, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (EEA or worldwide).

6.5.2. *Competitive assessment*

(148) Both Parties supply PP resins, including its three main types, worldwide, although Saudi Aramco is a much smaller supplier than SABIC. The markets for PP resins (generally), homopolymers, and random co-polymers are not affected at any plausible geographic level.[165] In relation to PP resins, the Transaction only gives rise to a horizontally affected market in the supply of impact (block) co-polymers in the EEA. The Transaction does not gives rise to an affected market for impact (block) co-polymers at worldwide level.

161 Form CO, paragraphs 377-378.

162 The market investigation strongly indicated that a market limited to Western Europe would not be appropriate for PP resins or any of its sub-segments for the purposes of the present Decision, so it is not considered further in this Decision.

163 Responses Responses to question 10 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

164 Responses to questions 7 and 9 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

165 The Parties' combined market shares are, in PP resins (generally), [5-10]% at worldwide level and [10-20]% in the EEA; in homopolymers, [5-10]% at worldwide level and [5-10]% in the EEA; and in random co-polymers, without increment as Saudi Aramco is not active in the supply of random co-polymers.

(149) The Notifying Party's estimates for the Parties' and their largest competitors' market shares for the supply of impact (block) co-polymers in the EEA are shown in *Table 8* below.

Table 8: Market share estimates for impact (block) copolymers in the EEA, 2018 (by volume)[166]

Supplier	Volume (kt)	Share
Saudi Aramco	*[…]*	*[0-5]%*
SABIC	*[…]*	*[20-30]%*
Combined	**[…]**	**[20-30]%**
LyondellBasell	[…]	[10-20]%
Mubadala Petroleum and Petrochemicals	[…]	[5-10]%
Total	[…]	[5-10]%
INEOS	[…]	[5-10]%
Repsol	[…]	[0-5]%
MOL	[…]	[0-5]%
PKN Orlen	[…]	[0-5]%
OMV	[…]	[0-5]%
Others	[…]	[20-30]%
Total Market	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(150) The Notifying Party submits that the Parties' low combined market shares in the supply of impact block co-polymers in the EEA ([20-30]%) is unlikely to raise any competition concerns. Moreover, it argues that the increment brought by the Transaction is very small ([0-5]%), and that therefore competition will remain effectively unchanged post-Transaction. It further submits that the combined entity will continue to face competition in this market from large players such as LyondellBasell, Mubadala Petroleum and Petrochemicals, Total, INEOS, Repsol, MOL Group, PKN Orlen or OMV, all of which are have larger shares in the affected market than Saudi Aramco.[167]

The Commission's assessment

(151) As outlined in paragraph (148) above, the Transaction only gives rise a horizontally affected market in the supply of impact (block) co-polymers at EEA level. The Parties' combined market shares are limited ([20-30]%), the increment brought by Saudi Aramco is small ([0-5]%) and the HHI increment remains below 150.

(152) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that the Parties are not close competitors, as Saudi Aramco is a small supplier of impact (block) co-polymers in the EEA.[168] The majority of respondents confirmed that, post-Transaction, there will

166 As indicated in paragraph (148) of this Decision, the Transaction does not give rise to affected markets at worldwide level with regard to PP resins (or any plausible sub-segmentation thereof). For the sake of completeness, based on the data submitted by the Notifying Party, the Parties' (2018 volume) share for the supply of impact (block) copolymers worldwide amounted to [5-10]% combined ([5-10]% for SABIC and [0-5]% for Saudi Aramco).

167 Form CO, paragraphs 379-387.

168 Responses to questions 13, 14 and 15 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

remain a number of strong competitors in the market to compete with the combined entity, such as Borealis, INEOS, Total or LyondellBasell, and that customers will continue to have a sufficient choice of credible suppliers to meet their needs.[169] Indeed, a customer explained that "*all competitors have a wide and excellent product range, covering many application as well as a good global footprint. All run world scale plants and are economically able to compete easily against SABIC/Saudi Aramco*".[170] Moreover, the majority of customers responding to the market investigation indicated that they typically procure impact (block) co-polymers from multiple suppliers, can switch with relative ease and have in fact switched suppliers in the last 3 years.[171] Finally, the majority of respondents to the market investigation did not consider that the Transaction would have any negative impact on prices, quality, choice or innovation in the EEA market for impact (block) co-polymers and no material concerns were raised regarding this horizontally affected market.[172]

(153) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for PP resins, regardless of whether the market is considered EEA-wide or worldwide or segmented by type of resin (i.e. homopolymers, impact (block) co-polymers, and random co-polymers).

6.6. Ethanolamines ("EOAs")

6.6.1. Market definition

(154) **EOAs** are colourless and viscous liquids, with an ammoniac smell. By controlling production parameters, manufacturers are able to obtain three main types of EOAs, namely mono-ethanolamine ("MEA"), di-ethanolamine ("DEA") and tri-ethanolamine ("TEA"). EOAs are produced from ethylene oxide and ammonia.

(155) **MEA**, **DEA** and **TEA** have applications in the production of lubricants, detergents, agricultural products, cement, and household and personal care products. They are also used as surfactants feedstock and as metal-working fluids.

(156) In particular, **DEA** is used in the production of glyphosate herbicide, in the personal care and detergent industries and in the production of synthetic metalworking fluids. DEA also has applications in the removal of acid gases from refinery streams. More recently, DEA has been used as a raw material for the production of diethanol isopropanolamine, a chemical product used as a cement grinding additive.

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169 Responses to questions 13, and 20 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

170 Response to question 15.1 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

171 Responses to questions 16, 17 and 18 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

172 Responses to questions 21 and 22 of *Q6 - Questionnaire to competitors and customers of Polypropylene resins*.

6.6.1.1. Product market definition

The Commission's precedents

(157) The Commission has in the past considered the market for EOAs and its potential sub-segments.[173] While acknowledging that MEA, DEA and TEA are used in different applications for which they are not substitutable, the Commission also noted that these three products might be substitutable to some extent when used as solvents. On the supply-side, the Commission noted that these three products are invariably produced together within the same production facilities, while pointing out that switching production between MEA, DEA and TEA can be difficult. The Commission ultimately left open whether EOAs constitutes a single product market or it should be further sub-segmented between MEA, DEA and TEA.

The Notifying Party's view

(158) The Notifying Party does not disagree with the Commission's precedents, but considers that for the purposes of the present Decision, the exact product market definition can be left open.[174]

The Commission's assessment

(159) The majority of respondents to the market investigation confirmed that EOAs are not substitutable with other products, explaining that EOAs are used in specific applications for which no substitute is available.[175] Further, respondents indicated that the different types of EOA (i.e. MEA, DEA and TEA) are generally not substitutable with each other from a customer perspective in light of their different properties, noting, however, that some applications might allow switching between these three products, though sometimes requiring different dosage to deliver the same outcome.[176] The majority of respondents confirmed that no further segmentation is necessary beyond the segmentation between different types of EOA (i.e. MEA, DEA and TEA).[177]

(160) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for EOAs can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. as an overall EOAs market or segmented between MEA, DEA and TEA).

6.6.1.2. Geographic market definition

The Commission's precedents

(161) In the past, the Commission has considered the relevant geographic market for EOAs and its potential sub-segments to be at least EEA-wide, and possibly global in scope.[178] However, while acknowledging that many arguments tend to support the

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173 See case COMP/M.4005 - *Ineos/Innovene*, decision of 09.12.2005.

174 Form CO, paragraphs 817-818.

175 Responses to question 3 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

176 Responses to question 4 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

177 Responses to question 5 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

178 See case COMP/M.4005 - *Ineos/Innovene*, decision of 09.12.2005.

global dimension of the EOAs market, the Commission ultimately left the geographic market for EOAs and its potential sub-segments open.

The Notifying Party's view

(162) The Notifying Party does not disagree with the Commission's precedents, but considers that for the purposes of the present Decision, the exact geographic market definition can be left open.[179]

The Commission's assessment

(163) The market investigation indicated that the relevant geographic market for all types of EOAs is likely worldwide. As regards DEA specifically (as the only plausible EOA product market in which there is an affected market), respondents generally considered the market for DEA to be worldwide, pointing to significant trade flows globally.[180] Customers responding to the market investigation confirmed that they can and do source DEA from suppliers based outside the EEA for use in their facilities within the EEA.[181] A majority of respondents considered that there are no barriers to trading DEA at worldwide level, though some respondents identified that there are some logistic barriers, as well as obstacles, such as the availability and costs of inputs, that would not allow a potential manufacturer to supply DEA worldwide from any location.[182]

(164) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for EOAs can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (EEA-wide or worldwide).

6.6.2. *Competitive assessment*

(165) At worldwide level, the Transaction does not give rise to any affected market, regardless of whether EOAs are considered as a single relevant market, or split between MEA, DEA and TEA.[183]

(166) At EEA level, the Transaction only gives rise to an affected market if the relevant product market is considered to be DEA.[184]

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179 Form CO, paragraphs 819-822.

180 Responses to question 6 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

181 Responses to question 8 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

182 Responses to questions 9.1.2 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

183 The Parties' (2018 volume) market share in EOAs at worldwide level was [10-20]%, with an increment of [5-10]% from SABIC. If EOAs are sub-segmented, the Parties would have a combined market share of [10-20]% in MEA (with a [0-5]% increment from SABIC), of [10-20]% in DEA (with a [5-10]% increment from Saudi Aramco) and [10-20]% in TEA (with a [0-5]% increment from SABIC).

184 At EEA level, the Parties' (2018 volume) market share in EOAs was [10-20]% (with an [5-10]% increment from SABIC), in MEA it is [10-20]% (with a [5-10]% increment from SABIC) and in TEA it is [10-20]% (with a [5-10]% increment from Saudi Aramco).

(167) The Notifying Party's estimates for the Parties' and their largest competitors' market shares for the supply of DEA in the EEA are shown in Table 9 below.

Table 9: Market share estimates for DEA in the EEA, in 2018 (by volume)

Supplier	Volume (kt)	Share
Saudi Aramco	*[…]*	*[10-20]%*
SABIC	*[…]*	*[5-10]%*
Combined	**[…]**	**[20-30]%**
BASF	[…]	[30-40]%
Akzo Nobel	[…]	[10-20]%
INEOS	[…]	[5-10]%
DowDuPont	[…]	[5-10]%
SASOL	[…]	[0-5]%
Grupo IDESA	[…]	[0-5]%
Huntsman Group	[…]	[0-5]%
Carlyle Group	[…]	[0-5]%
Others	[…]	[5-10]%
Total market	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(168) The Notifying Party submits that the Parties' combined shares are modest regardless of the product market definition adopted (less than [20-30]%), that Saudi Aramco is a small supplier worldwide (with a market share of only [0-5]%), which does not compete closely with SABIC, and that the combined entity will continue to be constrained by a number of competitors with shares greater than that of the increment from Saudi Aramco (as outlined in Table 9 above).[185] Moreover, it submits that barriers to entry are low (including entry by cross-regional players, as transport costs are minimal), and that customers are large manufacturers with significant buyer power and the ability to easily switch between suppliers. Therefore, the Transaction will not significantly impede effective competition in relation to the horizontally affected market of DEA in the EEA.[186]

The Commission's assessment

(169) As outlined in paragraph (165) above, the Transaction only gives rise to horizontally affected markets in the market for the supply of DEA at EEA level.

(170) At EEA level, the Parties' 2018 combined market share in the supply of DEA is [20-30]%, with a [5-10]% increment from SABIC. Moreover, the HHI increment remains below 250, in the context of a fragmented market, where the HHI remains below 2 000 post-Transaction.

(171) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that Saudi Aramco is a relatively modest supplier of DEA in the EEA.[187] The vast majority of respondents confirmed that, post-Transaction, there will remain a number of strong competitors in the market to constrain the combined entity at EEA level, and that customers will

185 Form CO, paragraphs 828-870.

186 Form CO, paragraphs 823-832.

187 Responses to questions 12 and 13 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

continue to have a sufficient choice of credible suppliers to meet their needs in the EEA.[188] Moreover, the majority of customers responding to the market investigation confirmed that they typically procure DEA from multiple suppliers, can switch fairly easily and have switched supplier in the last 3 years.[189] The majority of respondents considered that it is was relatively straightforward for an existing supplier to expand its sales of DEA in the EEA.[190] Finally, the majority of respondents to the market investigation did not consider that the Transaction would have any negative impact on prices, quality, choice or innovation for the EEA market for DEA and no material concerns were raised regarding the Parties' horizontal overlap in DEA at EEA level.

(172) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for EOAs, regardless of whether the market is considered EEA-wide or worldwide or if the product market is considered to be an overall EOAs market or sub-segmented between MEA, DEA and TEA.

6.7. Pygas

6.7.1. Market definition

(173) Pygas (or pyrolysis gasoline) is a high octane mixture of aromatics, olefins and other hydrocarbons. It is a by-product of the production of ethylene and propylene and is used in the production of benzene and toluene.

6.7.1.1. Product market definition

The Commission's precedents

(174) In previous decisions, the Commission has considered whether there is a distinct market for pygas (overall), or if there are separate markets for (i) untreated pygas, which is a very reactive material produced in the cracker by distillation, and (ii) treated pygas, which is treated with hydrogen to increase stability. Ultimately, the Commission left this question open.[191]

The Notifying Party's view

(175) The Notifying Party notes that untreated pygas has high reactivity and low stability and, as a result, it is rarely sold to third parties, and is instead converted by the same producer into treated pygas.[192] However, the Notifying Party does not disagree with the Commission's precedents and submits that for the purposes of the present Decision the product market definition can be left open.

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188 Responses to question 19 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

189 Responses to questions 15, 16 and 17 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

190 Responses to question 18 of *Q3 - Questionnaire to competitors and customers of Di-ethanolamine*.

191 See case COMP/M.4426 - *SABIC/Huntsman Petrochemicals*, decision of 20.12.2006. See also cases COMP/M.4734 - *Ineos/Kerling*, decision of 30.01.2008, COMP/M.4744 - *Ineos/Borealis*, decision of 24.08.2007, COMP/M.4401 - *Basell/Münchsmünster Cracker and Associated Assets*, decision of 21.12.2006, and COMP/M.4041, *Basell / Craqueur de l'Aubette*, decision of 22.12.2005.

192 Form CO, paragraphs 983-985.

The Commission's assessment

(176) The majority of respondents to the market investigation confirmed that pygas is not generally substitutable with other products, though some respondents pointed out that for particular applications there may be a degree of substitutability with other chemical products (for example, toluene might be used as a gasoline blending component in place of pygas).[193] Respondents to the market investigation generally considered that treated and untreated pygas are substitutable, though some pointed out that treated and untreated pygas have different product qualities and that untreated pygas is usually processed into treated pygas on-site, rather than being sold on the merchant market.[194]

(177) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for pygas can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. pygas overall, or segmented between treated pygas and untreated pygas).

6.7.1.2. Geographic market definition

The Commission's precedents

(178) In previous decisions, the Commission has considered the relevant geographic market for pygas and its potential sub-segments to be Western Europe or EEA-wide.[195] However, the Commission ultimately left the geographic market for pygas and its potential sub-segments open.

The Notifying Party's view

(179) The Notifying Party submits that the relevant geographic market for pygas is global or at least EEA-wide in scope.[196] It submits that pygas is a commodity product and that there are no barriers to trading pygas globally or within the EEA. It notes that Saudi Aramco supplies pygas on a global basis.

The Commission's assessment

(180) Respondents to the market investigation considered the relevant geographic market for pygas to be at least EEA-wide, if not global, confirming that are there no material barriers to trading within the EEA or worldwide.[197] Respondents noted that REACH authorisation may be required to supply pygas in the EEA, but did not consider this to be a material barrier to trading. Customers responding to the market investigation

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193 Responses to question 3 of *Q9 - Questionnaire to competitors and customers of Pygas*.

194 Responses to question 4 of *Q9 - Questionnaire to competitors and customers of Pygas*.

195 See case COMP/M.4426 - *SABIC/Huntsman Petrochemicals*, decision of 20.12.2006. See also cases COMP/M.4734 - *Ineos/Kerling*, decision of 30.01.2008, COMP/M.4744 - *Ineos/Borealis*, decision of 24.08.2007, COMP/M.4401 - *Basell/Münchsmünster Cracker and Associated Assets*, decision of 21.12.2006, and COMP/M.4041, *Basell / Craqueur de l'Aubette*, decision of 22.12.2005.

196 Form CO, paragraphs 986-988.

197 Responses to questions 6 and 9 of *Q9 - Questionnaire to competitors and customers of Pygas*. The market investigation strongly indicated that a market limited to Western Europe would not be appropriate for pygas or any of its sub-segments for the purposes of the present Decision, so it is not considered further in this Decision.

confirmed that they can and do source pygas from suppliers based outside the EEA for use in their facilities within the EEA.[198]

(181) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for pygas can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or global).

6.7.2. Competitive assessment

(182) SABIC and Saudi Aramco both produce pygas (the latter, through its joint venture with Dow, Sadara Chemical Company ("Sadara")). However, only SABIC sells treated and untreated pygas in the EEA and worldwide in the ordinary course of business. The Notifying Party submits that Saudi Aramco typically consumes its entire production of pygas internally ([…]) and does not sell it on the merchant market. Accordingly, in 2018 and 2019, Saudi Aramco did not sell any pygas to third parties. However, Saudi Aramco made some exceptional sales of untreated pygas on the merchant market in 2017, […].

(183) In light of the above, the Transaction would give rise to a horizontally affected market for the supply of pygas in the EEA on the basis of Saudi Aramco's sales in 2017 only, which is assessed below for the sake of completeness.[199] The Parties' combined market share in the supply of pygas in the EEA was [20-30]% in 2017.

(184) The Notifying Party's estimates of the Parties' and their largest competitors' market shares in the supply of pygas in the EEA in 2018 are shown in Table 10 below.[200]

Table 10: Market share estimates for pygas in the EEA, in 2018, (by volume)

Supplier	**Volume (kt)**	**Share**
Saudi Aramco [201]	-	-
SABIC	*[…]*	*[10-20]%*
Combined	**[…]**	**[10-20]%**
LyondellBasell	[…]	[30-40]%
ENI	[…]	[10-20]%
Total	[…]	[10-20]%
DowDuPont	[…]	[5-10]%
OMV	[…]	[5-10]%
Others	[…]	[5-10]%
Total Market	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

198 Responses to question 8 of *Q9 - Questionnaire to competitors and customers of Pygas.*

199 For completeness, pygas (and its relevant sub-segments) would not be affected at worldwide level because (i) in 2017, in accordance with the Notifying Party estimates, the Parties' combined share would remain below [0-5]% in 2017 and (ii) in 2018, only SABIC was active in the supply of pygas and, consequently, the Parties' activities did not overlap).

200 All of Saudi Aramco's pygas sales in 2017 were of untreated pygas. The Transaction would not give rise to serious doubts were the product market to be segmented between treated and untreated pygas for the reasons outlined in paragraph (188).

201 As noted above, Saudi Aramco did not sell pygas in the EEA in 2018. The Notifying Party's estimates for 2018 are presented in Table 10 to illustrate the most recent available data and the estimated size of SABIC and its largest competitors. In 2017, Saudi Aramco made exceptional sales of pygas of EUR […], meaning that Saudi Aramco held a market share of approximately [0-5]% worldwide and [0-5]% in the EEA in 2017, according to the Notifying Party's estimates.

The Notifying Party's view

(185) As shown in *Table 10* above, there is no affected market in relation to pygas in 2018. As regards 2017, the Notifying Party submits that the Parties' combined shares are modest (less than [20-30]%), that Saudi Aramco is not a supplier of pygas and only exceptionally made small sales in 2017, and that the combined entity will continue to face competition from a number of competitors in the EEA and worldwide, including LyondellBasell, DowDupont, ExxonMobil, Total and ENI.[202] Moreover, it submits that barriers to entry are low and that customers are large manufacturers with significant buyer power and the ability to easily switch between suppliers. Therefore, the Notifying Party submits that the Transaction will not significantly impede effective competition in relation to the horizontally affected market for pygas in the EEA.

The Commission's assessment

(186) As outlined in paragraph (183) above, the Transaction would only give rise to horizontally affected markets in the supply of pygas in the EEA on the basis of Saudi Aramco's exceptional sales in 2017.

(187) The Notifying Party estimates that the Parties' combined market share in the supply of pygas in the EEA was [20-30]% in 2017. The increment brought by Saudi Aramco is small ([0-5]%) and the HHI increment remains below 150.

(188) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that Saudi Aramco is a negligible supplier of pygas in the EEA.[203] The majority of respondents confirmed that, post-Transaction, there will remain a number of strong competitors on the market to constrain the combined entity, such as LyondellBasell, Dow, BASF, INEOS and Total and that customers will continue to have a sufficient choice of credible suppliers to meet their needs.[204] The respondents did not consider SABIC and Saudi Aramco to be close competitors for the supply of pygas.[205] Moreover, the majority of customers responding to the market investigation confirmed that they typically procure pygas from multiple suppliers, can switch relatively easily and have switched suppliers in the last 3 years.[206] The majority of respondents considered that it is relatively straightforward for an existing supplier to expand its sales of pygas or begin selling in a new country.[207] Finally, the majority of respondents to the market investigation did not consider that the Transaction would have any negative impact on prices, quality, choice or innovation for the EEA-wide market for pygas (or its sub-segments) and no material concerns were raised regarding pygas.[208]

202 Form CO, paragraphs 993-1012.

203 Responses to questions 13 and 14 of *Q9 - Questionnaire to competitors and customers of Pygas*.

204 Responses to questions 10, 11, 12 and 19 of *Q9 - Questionnaire to competitors and customers of Pygas*.

205 Responses to question 14 of *Q9 - Questionnaire to competitors and customers of Pygas*.

206 Responses to questions 15 and 16 of *Q9 - Questionnaire to competitors and customers of Pygas*.

207 Responses to question 18 of *Q9 - Questionnaire to competitors and customers of Pygas*.

208 Responses to question 20 of *Q9 - Questionnaire to competitors and customers of Pygas*.

(189) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for pygas, regardless of whether the market is considered EEA-wide or worldwide or segmented between treated and untreated pygas.

6.8. Tailgas

6.8.1. Market definition

(190) Tailgas is a flammable gas mixture containing combustible components as well as sulphur components. It is produced as a by-product from the cracking of various feedstocks, such as LPG, naphta and natural gas liquids, and from the processing of crude oil. Tailgas can be used to start the furnaces of crackers or burned in an incineration unit. Tailgas can also be called "*refinery fuelgas*".[209]

6.8.1.1. Product market definition

The Commission's precedents

(191) The Commission has not previously considered the market definition for the production and sale of tailgas.

The Notifying Party's view

(192) The Notifying Party considers that tailgas could be considered as a separate relevant product market, but submits that, for the purposes of the case at hand, the exact product market definition can be left open as the Transaction would not lead to competitive concerns regardless of the precise market definition.[210]

The Commission's assessment

(193) The results of the market investigation were not conclusive as to whether tailgas is substitutable with other products.[211] However, the responses to the market investigation indicated that there are no further subcategories of tailgas,[212] and that consequently tailgas requires no further sub-segmentation.

(194) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for tailgas can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition.

6.8.1.2. Geographic market definition

The Commission's precedents

(195) The Commission has not previously considered the geographic market definition for the production and sale of tailgas.

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209 Email to the case team from a market participant dated 7 February 2020.

210 Form CO, paragraphs 960-961.

211 Responses to question 3 of *Q8 - Questionnaire to competitors and customers of Tailgas.*

212 Responses to question 4 of *Q8 - Questionnaire to competitors and customers of Tailgas*.

The Notifying Party's view

(196) The Notifying Party considers that the geographic market is global or at least EEA-wide in scope, because there are no barriers to trading tailgas globally and especially within the EEA.[213] The Notifying Party considers, however, that for the case at hand, the exact scope of the geographic market definition can be left open as the Transaction will not lead to competitive concerns regardless of the precise market definition.

The Commission's assessment

(197) The results of the market investigation were somewhat inconclusive, but indicate that the geographic market for tailgas may be national, as wide as the relevant pipeline network, or EEA-wide. A market participant explained that gas streams require a pipeline network, which is typically national or regional.[214] According to this respondent, there are technical barriers to purchasing or selling tailgas at competitive terms at a worldwide level, because tailgas is transported via a gas stream and cannot be easily shipped.[215] In addition, the market investigation indicated that tailgas customers located in the EEA source from within the EEA and that only plants in the EEA can credibly supply tailgas customers located in the EEA.[216]

(198) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for tailgas can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (national, as wide as the relevant pipeline network, EEA-wide, or even worldwide).

6.8.2. Competitive assessment

(199) While SABIC only sells tailgas in the EEA, all of Saudi Aramco's sales were achieved outside the EEA, namely in the United States. Consequently, the Parties' activities do not overlap when looking at the tailgas market within the EEA (at national or EEA level). The Parties would only overlap horizontally in the supply of tailgas to the extent that the market is considered worldwide. Although the market investigation suggested the relevant geographic market would likely be narrower than worldwide, as the results were somewhat inconclusive, this potential horizontal overlap on a worldwide market is assessed below for completeness.

(200) The Notifying Party does not provide market shares estimates for tailgas at worldwide level on the grounds that there is no reliable data regarding the total sales of tailgas worldwide. However, the Notifying Party provided the value of the sales generated by the Parties in 2018 for tailgas worldwide, which amounted to EUR […] for SABIC (exclusively in the EEA) and EUR […] for Saudi Aramco (exclusively in the United States).

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213 Form CO, paragraphs 962-963.

214 Response to question 5 of *Q8 - Questionnaire to competitors and customers of Tailgas*.

215 Response to question 8 of *Q8 - Questionnaire to competitors and customers of Tailgas*.

216 Response to questions 6-7 of *Q8 - Questionnaire to competitors and customers of Tailgas*.

The Notifying Party's view

(201) The Notifying Party submits that the Parties' sales of tailgas are modest, and that they do not overlap in the EEA, since Saudi Aramco's sales were generated only in the United States.[217]

The Commission's assessment

(202) The market investigation did not provide sufficient information to enable the Commission to reconstruct the total market size or the Parties' market shares for tailgas worldwide, which is the only geographic market definition on which the Parties overlap.[218]

(203) However, the market investigation indicated that the merchant market for tailgas is limited.[219] Market respondents explained that tailgas is produced by refineries as a by-product, typically for internal consumption (i.e. captive use).[220]

(204) In addition, the market investigation indicated that, while entry and expansion for tailgas is rather difficult, because the production of tailgas requires a refinery,[221] sufficient credible suppliers will remain in the market post-Transaction, both in the EEA and at worldwide level.[222]

(205) No market respondent expects the Transaction to have a negative competitive impact in terms of price, quality, choice, or innovation on the tailgas market, be it EEA-wide (or narrower) or worldwide.[223]

(206) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for tailgas, regardless of whether the market is considered as national, as wide as the available pipeline network, EEA-wide or worldwide.

6.9. Raffinate-2

6.9.1. Market definition

(207) Raffinate-2 is a colourless, highly flammable gas obtained as a by-product of the separation of isobutylene from raffinate-1. It consists of n-butene, butane and potentially residual butadiene. Raffinate-2 is mainly used for the manufacture of secondary butyl alcohol and methyl ethyl ketone. It also used as a heating gas in industrial facilities.

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217 Form CO, paragraphs 964-966.

218 Responses to question 9 of *Q8 - Questionnaire to competitors and customers of Tailgas*.

219 Responses to question 3.1 of *Q8 - Questionnaire to competitors and customers of Tailgas*.

220 Responses to question 17 of *Q8 - Questionnaire to competitors and customers of Tailgas*. Email to the case team from a market participant dated 7 February 2020.

221 Responses to question 17 of *Q8 - Questionnaire to competitors and customers of Tailgas*

222 Responses to question 18 of *Q8 - Questionnaire to competitors and customers of Tailgas*.

223 Responses to question 18 of *Q8 - Questionnaire to competitors and customers of Tailgas*

6.9.1.1. Product market definition

The Commission's precedents

(208) The Commission has not previously considered the product market definition for the production and sale of raffinate-2.

The Notifying Party's view

(209) The Notifying Party submits that raffinate-2 should be considered as a separate relevant product market.[224]

The Commission's assessment

(210) The majority of respondents to the market investigation indicated that raffinate-2 is not substitutable with other products, and in particular it is not substitutable with its precursors in the naphtha cracking process (namely, crude C4 and raffinate-1).[225] The vast majority of respondents also confirmed that no further segmentation of raffinate-2 is necessary.[226]

(211) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for raffinate-2 can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition.

6.9.1.2. Geographic market definition

The Commission's precedents

(212) The Commission has not previously considered the geographic market definition for the production and sale of raffinate-2.

The Notifying Party's view

(213) The Notifying Party submits that the geographic market for raffinate-2 is global or at least EEA-wide in scope.[227] The Notifying Party argues that the absence of trade barriers globally and especially within the EEA is the main reason why the geographic market for raffinate-2 should be considered to be global or at least EEA-wide in scope.

The Commission's assessment

(214) The market investigation indicated that the relevant geographic market for raffinate-2 is likely EEA-wide, or potentially worldwide. Most respondents consider the market for raffinate-2 to be EEA-wide, pointing to significant limitations to the transportation of the product, such as logistics and high transport costs due to the fact that raffinate-2 is a flammable gas that needs to be liquefied in order to be

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224 Form CO, paragraphs 560-561.

225 Responses to question 3 of *Q7 - Questionnaire to competitors and customers of Raffinate-2*.

226 Responses to question 4 of *Q7 - Questionnaire to competitors and customers of Raffinate-2*.

227 Form CO, paragraphs 562-563.

transported.[228] However, some customers indicated that some international trade flows exist between Europe and the USA.[229]

(215) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for raffinate-2 can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (EEA-wide or worldwide).

6.9.2. Competitive assessment

(216) SABIC only supplies raffinate-2 within the EEA. On the other hand, Saudi Aramco supplies raffinate-2 both within the EEA and worldwide. However, 99% of Saudi Aramco's sales were achieved in North America and Asia (i.e. outside the EEA).

(217) The Notifying Party did not provide market shares estimate for raffinate-2 on the grounds that there is no reliable data regarding the size of the market in the EEA and worldwide. However, the Notifying Party provided the value of the sales of raffinate-2 generated by the Parties in 2018, which amounted to EUR […]for SABIC (exclusively in the EEA) and EUR […]for Saudi Aramco (out of which EUR […]was generated in the EEA).

The Notifying Party's view

(218) The Notifying Party claims that the Parties are not close competitors. This is mainly because they operate in different geographic areas, with SABIC being only present in the EEA, and Saudi Aramco only making around 1% of its sales of raffinate-2 in the EEA. Moreover the Notifying Party claims that SABIC's sales in the EEA were made essentially to one customer.

The Commission's assessment

(219) Using the sales figures provided by the Notifying Party and other market participants in response to the market investigation, the Commission was able to partially reconstruct the market, thus yielding some conservative estimates for the Parties' market shares.[230]

(220) At EEA level, the data gathered allowed the Commission to establish that the market for raffinate-2 would not be affected by the Transaction. The Parties' combined market shares will remain below 20%, with a negligible increment of less than [0-5]% from SABIC and a HHI increment below 150.

(221) At worldwide level, the data gathered by the Commission did not suffice to confirm that raffinate-2 would not be a horizontally affected market. However, most respondents indicated that there are over 20 credible suppliers of raffinate-2 worldwide.[231] When asked to list the top five suppliers for raffinate-2 worldwide, none of the respondents mentioned Saudi Aramco, and only one mentioned SABIC,

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228 Responses to questions 5 and 8 of *Q7 - Questionnaire to competitors and customers of Raffinate-2.*

229 Responses to question 6 of *Q7 - Questionnaire to competitors and customers of Raffinate-2.*

230 Responses to question 9 of *Q7 - Questionnaire to competitors and customers of Raffinate-2.*

231 Responses to question 10 of *Q7 - Questionnaire to competitors and customers of Raffinate-2.*

ranking it as number four supplier worldwide.[232] None of the respondents identified the Parties as close competitors.[233] A majority of respondents confirmed that customers will continue to have a sufficient choice of credible suppliers to meet their needs.[234] Finally, all respondents to the market investigation consider that the Transaction would not have any negative impact on prices, quality, choice or innovation in the worldwide market for raffinate-2 and no material concerns were raised regarding the Parties' horizontal overlap in raffinate-2.[235]

(222) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for raffinate-2, regardless of whether the market is considered EEA-wide or worldwide.

6.10. Polybutadiene rubber (PBR)

6.10.1. Market definition

(223) PBR is an elastomer derived from the polymerisation of butadiene through a solution process. The tyre industry accounts for the majority of global PBR consumption. PBR is also used as an additive to improve the toughness of plastics such as polystyrene, in addition to other minor uses. Both Parties are active in the production and sale of PBR, primarily for the tyre application.

6.10.1.1. Product market definition

The Commission's precedents

(224) In *Bayer/Hüls*, the Commission identified a separate product market for PBR.[236] This distinction was reasserted in *Wacker/Air products*. The Commission has previously also found that synthetic latex products should not be further divided into submarkets according to the grade qualities of the latex dispersions.[237]

The Notifying Party's view

(225) The Notifying Party agrees with the Commission's precedents that PBR forms a separate product market.[238]

The Commission's assessment

(226) The vast majority of respondents to the market investigation confirmed that PBR is not substitutable with other products. Respondents explained that even though some degree of substitutability might be attainable in certain applications, for the majority

232 Responses to question 11 of *Q7 - Questionnaire to competitors and customers of Raffinate-2*.

233 Responses to question 13 of *Q7 - Questionnaire to competitors and customers of Raffinate-2*.

234 Responses to question 18 of *Q7 - Questionnaire to competitors and customers of Raffinate-2*.

235 Responses to question 21 of *Q7 - Questionnaire to competitors and customers of Raffinate-2*.

236 See case IV/M.751 - *Bayer/Hüls*, decision of 03.07.1996 and case IV/M.1097 - *Wacker/Air products*, decision of 04.08.1998.

237 See cases M.5355 - *BASF/CIBA*, decision of 12.03.2009; M.5424 - *Dow/Rohm and Haas*, decision of 08.01.2009; and M.1993 - *Rhodia/Raisio/*JV, decision of 20.07.2000.

238 Form CO, paragraphs 497-498

of applications, and in particular for its main application in tyre manufacturing, PBR is not substitutable with other products.[239] The majority of respondents indicated that no further segmentation is necessary.[240] While some respondents acknowledge that PBR exists in different grades, and can be produced using different types of catalysts for the polymerisation process, they also consider that these sub-types are usually substitutable with each other and price differences are minimal, so that these products should be considered as part of the same market.[241]

(227) The Commission considers that, for the purposes of the present Decision, and in line with previous Commission decisions, PBR can be considered to form a single relevant product market.

6.10.1.2. Geographic market definition

The Commission's precedents

(228) The Commission has previously considered the relevant geographic market for all types of synthetic latex products (including PBR) to be EEA-wide.[242] In particular, the Commission pointed to differences in price levels between regions and the fact that the flow of supply between continents was not significant.

The Notifying Party's view

(229) The Notifying Party argues that the relevant geographic market for PBR is global or at least EEA-wide in scope.[243] The Notifying Party submits that each major PBR manufacturer has a global presence and that this is also true of the major PBR customers, which are global tyre manufacturers with worldwide presence. The Notifying Party further explains that there are significant trade flows across regions, the top PBR manufacturers being located in the US, the EEA, South Korea, Russia and Japan. In addition, the Notifying Party claims that production costs are roughly comparable between various worldwide production facilities and that neither transportation costs, nor import duties constitute significant barriers to trading PBR across regions.

The Commission's assessment

(230) The market investigation indicated that the relevant geographic market for PBR is likely worldwide or at least EEA-wide. Respondents generally considered the market for PBR to be worldwide, pointing to significant patterns of trade worldwide, such as exports from the EEA to Asia and America, as well as imports from China into the EEA and the USA, and the fact that PBR is a commodity product.[244] Customers

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239 Responses to question 33 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

240 Responses to question 34 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*

241 Responses to question 34 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

242 See case case IV/M.751 - *Bayer/Hüls*, decision of 03.07.1996 and case IV/M.1097 - *Wacker/Air products*, decision of 04.08.1998.

243 Form CO, paragraphs 499-503.

244 Responses to question 35 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

responding to the market investigation confirmed that they can and do source PBR from suppliers based outside the EEA for use in their facilities within the EEA.[245] On the other hand, respondents identified that there are some tariffs and import duties between regions and that logistics and transportation costs might acts as barriers to purchasing or selling PBR at a worldwide level. The differences in input costs between regions were mentioned as a factor likely to make imports into the EEA less economically viable.[246] Moreover, some respondents also explained that the competitive pressure exerted by imports of PBR into the EEA is limited by the fact that inputs (and especially butadiene) are usually more expensive outside the EEA.[247]

(231) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for PBR can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

6.10.2. Competitive assessment

(232) Both Parties supply PBR in the EEA and worldwide. Saudi Aramco produces PBR through its affiliate Arlanxeo, with manufacturing facilities in Brazil, France, Germany, Singapore and USA. SABIC is active in PBR through the Kemya JV, a 50/50 JV between SABIC and ExxonMobil that started commercial production of PBR in 2017.

(233) The Notifying Party's estimates of the Parties' and their largest competitors' market shares worldwide and in the EEA are as follows.

Table 11: Market share estimates for PBR worldwide and in the EEA (in 2018, by volume)

Worldwide			**EEA-wide**		
Supplier	**Volume (kt)**	**Share**		**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[10-20]%*	*Saudi Aramco*	*[…]*	*[0-5]%*
SABIC	*[…]*	*[0-5]%*	*SABIC*	*[…]*	*[0-5]%*
Combined	**[…]**	**[10-20]%**	**Combined**	**[…]**	**[10-20]%**
SINOPEC	[…]	[5-10]%	NKNK	[…]	[10-20]%
Kumho	[…]	[5-10]%	ENI	[…]	[5-10]%
Goodyear	[…]	[5-10]%	Sibur Petrochemicals	[…]	[5-10]%
CNPC	[…]	[5-10]%	ZSK Yefremov	[…]	[5-10]%
NKNK	[…]	[0-5]%	Trinseo	[…]	[5-10]%
LG Group	[…]	[0-5]%	Synthos	[…]	[5-10]%
Bridgestone	[…]	[0-5]%	Michelin	[…]	[0-5]%
Ube Industries	[…]	[0-5]%	Goodyear	[…]	[0-5]%
Others	[…]	[40-50]%	Others	[…]	[20-30]%
Total market	*[…]*	*100%*	*Total market*	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

245 Responses to question 37 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

246 Responses to question 38 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*.

247 Responses to question 35 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber*. See also para. (305) and Responses to questions 5 and 6 of *Q17 - Questionnaire to competitors and customers of Butadiene*.

(234) The Transaction does not give rise to an affected market for PBR at worldwide or EEA levels on the basis of the most recently available market shares (i.e. 2018 figures).[248] However, given that the Parties' market shares appear to be close to the 20% threshold for a market to be considered as horizontally affected, the Commission has assessed this overlap on a conservative basis.

The Notifying Party's view

(235) According to the Notifying Party's estimates, in the EEA the Parties had a combined market share of [10-20]%in volume in 2018, with a limited increment of [0-5]% from SABIC and a HHI increment of <150.[249] The Notifying Party submits that, on this market, the combined entity would continue to face competition from a number of strong competitors, such as NKNK ([10-20]%) and ENI ([5-10]%), as well as other smaller players. The Notifying Party also submits that the Parties' largest customers are global tyre manufacturers, with significant countervailing buying power, and the ability to easily switch between suppliers and procure PBR from suppliers located in other regions. Finally, the Notifying Party considers that, while Saudi Aramco is a well-established global supplier of PBR, SABIC is a new entrant on this market and is a fringe supplier, lacking the production and distribution scale of its larger competitors. However, the Notifying Party adds that SABIC is not a maverick entrant that could disrupt the segment, given that PBR is a commodity product and that SABIC's product and production methods are the same as those of its competitors.

The Commission's assessment

(236) The results of the market investigation broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that SABIC is a relatively small supplier of PBR worldwide as well as in the EEA.[250] The majority of respondents confirmed that, post-Transaction, there will remain a number of strong competitors on the market in the EEA to constrain the combined entity, such as ENI, NKNK, Sibur Petrochemicals, Synthos and Trinseo, and that customers will continue to have a sufficient choice of credible suppliers to meet their needs.[251] Moreover, the majority of customers responding to the market investigation confirmed that they typically procure PBR from multiple suppliers, can switch relatively easily and have switched supplier in the last 3 years.[252] The majority of respondents considered that it is relatively straightforward for an existing supplier to expand its sales of PBR or begin selling in a new country.[253] Finally, the majority of respondents to the market investigation did not consider that the Transaction would

[248] Form CO, paragraphs 504-507.

[249] According to the Notifying Party's estimates, the market shares of the Parties did not substantially differ in the past three years, and were even lower than in 2018, and market shares in value would not substantially differ from market shares in volume.

[250] Responses to questions 41.1, 41.2 and 42 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

[251] Responses to questions 43 and 48 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

[252] Responses to questions 44, 45 and 46 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

[253] Responses to question 47 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

have any negative impact on prices, quality, choice or innovation in the market for PBR at EEA level, and no material concerns were raised regarding the Parties' horizontal overlap in PBR.[254]

(237) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the market for PBR, regardless of whether the market is considered EEA-wide or worldwide.

6.11. General conclusion of horizontal effects

(238) In light of the considerations set out in paragraphs (27) to (237), and taking account of the results of the market investigation and of the evidence available to it, the Commission concludes that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to non-coordinated and coordinated horizontal effects.

7. VERTICAL LINKS – MARKET DEFINITION AND COMPETITIVE ASSESSMENT

7.1. Hydrogen (upstream) with hydrogenated nitrile butadiene rubber (HNBR) (downstream)

7.1.1. Market definitions

7.1.1.1. Hydrogen

(239) Hydrogen is one of the most widely used industrial gases, with applications in chemical, food, and glass production. Its principal use is for the synthesis of ammonia. It can be supplied both as a liquid and as a gas, and can be distributed via different channels (tonnage, bulk, and cylinders).

7.1.1.1.1. Product market definition

The Commission's precedents

(240) In previous decisions, the Commission has held that each industrial gas, including hydrogen, belongs to a separate product market because of their different chemical and physical properties and because of the general lack of demand-side or supply-side substitutability.[255] In addition, it concluded that each distribution channel (tonnage, bulk and cylinders) forms a distinct relevant product market.[256]

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254 Responses to questions 49.1, 49.2 and 50 of *Q1 - Questionnaire to competitors and customers of Butyl rubber and Polybutadiene rubber.*

255 See case COMP/M.8480 - *Praxair/Linde*, decision of 28.08.2018, case COMP/M.1641 - *Linde/AGA*, decision of 9.02.2000, case COMP/M.3314 - *Air Liquide/Messer Targets*, decision of 15.03.2004.

256 See case COMP/M.8480 - *Praxair/Linde*, decision of 28.08.2018, COMP/M.1641 - *Linde/AGA*, decision of 9.02.2000 and case COMP/M.3314 - *Air Liquide/Messer Targets*, decision of 15.03.2004.

The Notifying Party's view

(241) The Notifying Party submits that it does not disagree with the Commission's precedents.[257]

The Commission's assessment

(242) The majority of respondents to the market investigation confirmed that hydrogen is not substitutable with other products, even though it might compete to an extent with other products (e.g. batteries, fuel) in emerging mobility applications.[258] Further, respondents indicated that the different modes of delivery for hydrogen (i.e. tonnage, bulk and cylinders) are not substitutable with each other from a customer perspective since they respond to distinct customer needs.[259] The majority of respondents confirmed that no further segmentation is necessary beyond the segmentation between different modes of delivery of hydrogen.[260]

(243) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for hydrogen can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. as an overall hydrogen market or segmented between hydrogen supplied by tonnage, bulk and cylinders).

7.1.1.1.2. Geographic market definition

The Commission's precedents

(244) In previous decisions, the Commission considered that the geographic market for hydrogen supplied in tonnage was EEA-wide, whereas it was national for hydrogen supplied in bulk and in cylinder.[261]

The Notifying Party's view

(245) The Notifying Party submits that the geographic market definition for the production and supply of hydrogen is global or at least EEA-wide in scope, given the lack of trade barriers globally and in particular within the EEA.

The Commission's assessment

(246) The market investigation confirmed the Commission's precedents that the geographic market for hydrogen supplied in tonnage is EEA-wide. Respondents to the market investigation indicated that global suppliers compete against each other for opportunities to supply tonnage hydrogen within the EEA and even to some extent at worldwide level. On the other hand, results of the market investigation indicated that the supply tonnage of hydrogen in the EEA requires a local presence in the EEA, for instance concerning maintenance organization and operating

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257 Form CO, paragraphs 2397-2406.

258 Responses to question 3 of *Q11 - Questionnaire to competitors and customers of Hydrogen*.

259 Responses to question 4 of *Q11 - Questionnaire to competitors and customers of Hydrogen*.

260 Responses to question 5 of *Q11 - Questionnaire to competitors and customers of Hydrogen*.

261 See cases COMP/M.1641 - *Linde/AGA*, decision of 9.02.2000, COMP/M.3314 - *Air Liquide/Messer Targets*, decision of 15.03.2004 and Case COMP/M.4823 - *Yara/Praxair*, decision of 28.11.2007.

structure. Regarding hydrogen supplied in cylinder, market respondents indicated that the geographic market remained national. Regarding hydrogen supplied in bulk, the results of the market investigation also pointed towards a national or EEA-wide market.[262] Respondents indicated that it is possible to transport bulk hydrogen over several hundred kilometres, i.e. cross-borders.[263]

(247) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for hydrogen can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition.

7.1.1.2. Hydrogenated nitrile butadiene rubber (HNBR)

7.1.1.2.1. Product market definition

(248) Hydrogenated nitrile butadiene rubber ("HNBR") is a synthetic rubber known for its physical strength and retention of properties after long-term exposure to heat, oil and chemicals. It is produced through selective hydrogenation of nitrile butadiene rubber in an organic solvent. The process can yield a number of different grades of HNBR with different acrylonitrile content, hydrogenation levels, and polymer viscosity. These properties and composition will render certain grades more suitable for different end-use applications.

(249) HNBR is used to produce dynamic and static seals, hoses, and belts for automotive applications, as well as rolls for steel and paper mills for industrial applications. It is also used in the food, pharmaceutical and medical industries.

The Commission's Precedents

(250) The Commission has not previously considered the product market definition for the production and sale of HNBR.

The Notifying Party's view

(251) The Notifying Party submits that all grades of HNBR are part of a single product market. In the Notifying Party's view, although there are multiple grades of HNBR available in the market, they all have the same key qualities, such as physical strength and retention of properties after long-term exposure to heat, oil, and chemicals.[264] It also submits that there is a high-level of supply-side substitutability between the various grades of HNBR.

The Commission's assessment

(252) Despite providing examples of potential substitution between HNBR and other types of synthetic rubber, the result of the market investigation indicated that it may be appropriate to define a separate product market for HNBR, though it was inconclusive on this point. In particular, the majority of respondents consider that no

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262 Responses to question 6 of *Q11 - Questionnaire to competitors and customers of Hydrogen*.

263 Responses to questions 6, 7, 8 and 9 of *Q11 - Questionnaire to competitors and customers of Hydrogen*.

264 Form CO, paragraphs 2454-2460.

further segmentation of this product (by grade for instance) is relevant or necessary.[265]

(253) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for HNBR can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition.

7.1.1.2.2. Geographic market definition

The Commission's precedents

(254) The Commission has not previously considered the geographic market definition for the production and sale of HNBR.

The Notifying Party's view

(255) The Notifying Party submits that the geographic market is global or at least EEA-wide in scope, as the major suppliers are active across the principal economic regions of the world, operate on a global basis, and transport costs remain low (below 5% of the sales price).[266]

The Commission's assessment

(256) The market investigation indicated that the relevant geographic market for HNBR is likely worldwide. Respondents generally considered the market for HNBR to be worldwide, pointing to significant patterns of trade worldwide and the fact that HNBR is used and sourced worldwide by global automotive manufacturers.[267] All customers that responded to the market investigation considered that suppliers' plants based outside the EEA can credibly sell HNBR to customers in the EEA.[268] None of the respondents identified any barriers to purchasing or selling HNBR at a worldwide level at competitive terms.[269]

(257) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for HNBR can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

7.1.2. Competitive assessment

(258) The Transaction gives rise to a vertically affected link concerning the supply of hydrogen (upstream) by SABIC and the supply of HNBR (downstream) by Saudi Aramco.

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265 Responses to questions 3 and 4 of *Q12 - Questionnaire to competitors and customers of HNBR.*
266 Form CO, paragraphs 2454-2460.
267 Responses to questions 3 and 4 of *Q12 - Questionnaire to competitors and customers of HNBR.*
268 Responses to questions 3 and 4 of *Q12 - Questionnaire to competitors and customers of HNBR.*
269 Responses to questions 3 and 4 of *Q12 - Questionnaire to competitors and customers of HNBR.*

(259) Upstream, SABIC is active in the supply of hydrogen, but exclusively by tonnage. SABIC has hydrogen plants in Saudi Arabia as well as in the Netherlands. Saudi Aramco does not produce or sell hydrogen.

(260) Downstream, Saudi Aramco produces and sells HNBR through its subsidiary Arlanxeo. Arlanxeo has two production facilities for the manufacture of HNBR, in Germany and in the United States. SABIC is not active in the HNBR business.

(261) According to the market share estimates provided by the Notifying Party, HNBR is a (downstream) vertically affected product market in the EEA, where Saudi Aramco had a market share of [60-70]% in 2018. Worldwide, while HNBR does not give rise to any vertically affected markets in 2018, a vertically affected market arises based on 2016 value market shares.[270] In the present Decision, the Commission therefore analyses this vertical link in the EEA and, for completeness, at worldwide level.

(262) The Notifying Party's estimates for the Parties' and their largest competitors' market shares in the supply of hydrogen (upstream) and HNBR (downstream) worldwide and in the EEA are shown in Tables 12 and 13 below.

(263) The Notifying Party did not provide market share estimates based on the plausible hydrogen sub-segmentations by delivery mode (and in particular for delivery by tonnage, which is the only mode in which SABIC is active), on the grounds that it does not have reliable data regarding the size of the market in the EEA and worldwide. However, the Notifying Party claimed that SABIC's market share in the potential sub-segment of hydrogen supplied in tonnage would remain below 30% at both at EEA and worldwide levels.

Table 12: Market share estimates for hydrogen (upstream) worldwide and in the EEA, 2018 (by volume)[271]

Worldwide			**EEA-wide**		
Supplier	**Volume (kt)**	**Share**		**Volume (kt)**	**Share**
Saudi Aramco	-	-	*Saudi Aramco*	-	-
SABIC	*[…]*	*[0-5]%*	*SABIC*	*[…]*	*[0-5]%*
Combined	**[…]**	**[0-5]%**	**Combined**	**[…]**	**[0-5]%**
-	-	-	Air Liquide	*[…]*	[30-40]%
-	-	-	Air Products	*[…]*	[10-20]%
Others	*[…]*	[90-100]%	Others	*[…]*	[30-40]%
Total market	*[…]*	*100%*	*Total market*	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

270 According to the Notifying Party's estimates, Saudi Aramco had a worldwide market share of [30-40]% in value in 2016. The value market shares were [30-40]% in 2016, [20-30]% in 2017 and [20-30]% in 2018. The volume market shares were [20-30]% in 2016 and [20-30]% in 2017.

271 The Notifying Party did not provide market shares for hydrogen supplied in tonnage. However, responses to the market investigation indicate that, on a very conservative basis, regarding the narrower market for hydrogen supplied in tonnage, the Parties' market share in the EEA would remain below [0-5]% by value, and below [10-20]% by volume. See responses to question 10 in *Q11 – Questionnaire to competitors and customers of hydrogen.*

Table 13: Market share estimates for HNBR (downstream) worldwide and in the EEA, 2018 (by volume)

Worldwide			**EEA-wide**		
Supplier	**Volume (kt)**	**Share**		**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[20-30]%*	*Saudi Aramco*	*[…]*	*[60-70]%*
SABIC	-	-	*SABIC*	-	-
Combined	**[…]**	**[20-30]%**	**Combined**	**[…]**	**[60-70]%**
Zeon	[…]	[50-60]%	Zeon	[…]	[10-20]%
Zannan Scitech	[…]	[5-10]%	Zannan Scitech	[…]	[0-5]%
PetroChina (subsidiary of CNPC)	[…]	[0-5]%	PetroChina (subsidiary of CNPC)	[…]	[0-5]%
Others	[…]	[10-20]%	Others	[…]	[20-30]%
Total market	*[…]*	*100%*	*Total market*	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(264) The Notifying Party considers that post-Transaction, the combined entity will not have the ability or incentive to engage in customer foreclosure either at EEA or at worldwide level.[272]

(265) First, the Notifying Party considers that the combined entity would lack the ability to engage in a customer foreclosure strategy because hydrogen is a product that has many applications other than the manufacture of HNBR, meaning that more than 99% of the produced hydrogen is sourced for downstream uses other than HNBR. It submits that the Parties thus jointly represent only [0-5]% of the overall purchases of hydrogen in the EEA and [0-5]% worldwide. Moreover, the Notifying Party submits that Arlanxeo only purchases hydrogen for the manufacture of HNBR from […] suppliers ([…]), which are the only upstream rivals theoretically at risk of customer foreclosure. In […] cases, the hydrogen suppliers' plant is connected to several other customers, which purchase hydrogen in larger quantities than Arlanxeo, so that, for these […] upstream rivals, Arlanxeo only represents a minor amount of hydrogen sales at plant level and even more so at EEA and worldwide level.

(266) Second, the Notifying Party considers that the combined entity would lack the incentive to engage in a customer foreclosure strategy because SABIC's hydrogen division is less efficient than its current competitors for the supply of hydrogen to Arlanxeo's HNBR plant, so that any customer foreclosure strategy by the Parties would translate into increased costs for their downstream HNBR business. These costs would be further increased by the necessity to make additional investments due to the lack of current infrastructure for the transportation of hydrogen between SABIC and Arlanxeo. Moreover, the Notifying Party argues that even if the prices for hydrogen were to increase as a result of a successfully implemented customer foreclosure strategy, SABIC's very modest market share in the market for the sales of hydrogen, [0-5]% in the EEA and [0-5]% worldwide level, would severely limit the benefits that the combined entity would reap from such a strategy.

272 Form CO, paragraphs 2520-2532.

The Commission's assessment

(267) Given the Parties' (through SABIC) small market shares in the upstream market for hydrogen and in any of its plausible sub-segments, and consequently the combined entity's inability to foreclose access to hydrogen post-Transaction, input foreclosure will not be assessed in the present Decision.

(268) Regarding potential customer foreclosure risks, the results of the Commission's market investigation indicated that the combined entity is unlikely to be able to successfully engage in any customer foreclosure strategy in relation to hydrogen rivals (upstream) through its downstream position in HNBR.

(269) First, as regards ability, the market investigation confirmed the Notifying Party's estimates that Saudi Aramco is a large supplier of HNBR in the EEA and worldwide.[273] However, the market investigation confirmed that the combined entity would not have the ability to engage in a customer foreclosure strategy towards hydrogen suppliers. It strongly confirmed that major suppliers of hydrogen are international companies with a customer base that extends well beyond just HNBR producers.[274] It accordingly confirmed that Saudi Aramco is a relatively small purchaser of hydrogen in the EEA and worldwide.[275] In light of the above, it is unlikely that the combined entity would have the ability to foreclose suppliers of hydrogen (upstream) through a customer foreclosure strategy.

(270) Second, as regards incentive, the market investigation has broadly confirmed that the Notifying Party's market share estimates for hydrogen are reliable and, in particular, that SABIC is considered a minor supplier of hydrogen at both worldwide and EEA levels, irrespective of the delivery channel (i.e. tonnage, bulk or cylinders).[276] This supports the Notifying Party's claim that the Parties' very modest market share in this market would severely limit the benefits that the combined entity would reap from a customer foreclosure strategy.

(271) Third, even if the combined entity completely ceases to purchase hydrogen from upstream rivals post-Transaction, such foreclosure is unlikely to have an adverse impact in the downstream market for HNBR in the EEA or worldwide. As explained above, the combined entity is a small purchaser of hydrogen. Consequently, an insufficient fraction of hydrogen output (upstream) would be affected by the revenue decreases resulting from the fact that the combined entity would, post-Transaction, completely cease to purchase hydrogen from upstream rivals. Moreover, even if the impact were concentrated on one upstream supplier who faces a cost increase as a result, there are a number of strong suppliers of hydrogen (such as Air Liquide, Air Products and Linde)[277] who would be unaffected by the foreclosure, and customers have confirmed that switching is easy.[278] Therefore, it is unlikely that a customer foreclosure attempt would have an impact upstream, but even if it did, downstream

273 Responses to question 11 of *Q12 - Questionnaire to competitors and customers of HNBR.*

274 Responses to question 1 of *Q11 - Questionnaire to competitors and customers of Hydrogen.*

275 Responses to questions 10 and 13 of *Q11 - Questionnaire to competitors and customers of Hydrogen* and Form CO, Annex D.

276 Responses to question 12 of *Q11 - Questionnaire to competitors and customers of Hydrogen.*

277 Responses to questions 11 and 12 of *Q11 - Questionnaire to competitors and customers of Hydrogen.*

278 Responses to questions 14 and 15 of *Q11 - Questionnaire to competitors and customers of Hydrogen.*

customers would have an effective and timely counter-strategy to any foreclosure attempt.

(272) Moreover, all hydrogen manufacturers that responded to the market investigation confirmed that they do not have any material concerns about a potential customer (or input) foreclosure strategy that the Parties might try to put in place and that, post-Transaction, they would still have enough customers to sell hydrogen to, at both worldwide and EEA level.[279] Respondents to the market investigation also indicated that they do not expect that the Transaction would have any negative impact on prices, quality, choice or innovation for the market for HNBR (or indeed hydrogen) at either EEA or worldwide level and no material concerns were raised regarding either product.[280]

(273) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that it is unlikely that the Transaction could lead to customer foreclosure risks from the vertical link between hydrogen (upstream) and HNBR (downstream). As a result, this vertical link is unlikely to significantly impede effective competition.

7.2. Ethylene oxide (upstream) with ethylene glycols (downstream)

7.2.1. Market definitions

1. 7.2.1.1. Ethylene oxide ("EO")

(274) EO is a colourless, hazardous and flammable gas obtained through the partial oxidation of ethylene. It is mostly used as a raw material for the production of other chemicals, such as EG, glycol ethers, ethoxylates, EOA, and polyalkylene glycols. EO also has applications as a disinfectant, for instance to sterilize surgical instruments in hospitals or to remove pests and microorganisms from spices or furs, among others.

7.2.1.1.1. Product market definition

The Commission's precedents

(275) In past decisions, the Commission has considered that EO constitutes a separate product market because EO is characterized by low substitutability with other products, especially when used as a direct raw material in chemical reactions.[281] In more recent cases, the Commission left the precise market definition open.[282] In *Ineos/BP Dormagen,*[283] the Commission also considered whether onsite supplies (i.e. long-term arrangements with customers whose plants that convert EO are located on, or adjacent to, the EO supplier's site and connected via pipeline) and off-

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279 Responses to question 18 of *Q11 - Questionnaire to competitors and customers of Hydrogen.*

280 Responses to questions 18.1 and 18.2 of *Q11 - Questionnaire to competitors and customers of HNBR and* responses to questions 19.1, 19.2 and 20 of *Q11 - Questionnaire to competitors and customers of Hydrogen.*

281 See cases COMP/M.4005 - *Ineos/Innovene*, decision of 09.12.2005 and COMP/M.2345 - *Deutsche BP/Erdölchemie*, decision of 26.04.2001.

282 See cases COMP/M.5927 - *BASF/Cognis*, decision of 30.11.2010, COMP/M.4094 - *Ineos/BP Dormagen*, decision of 10.08.2006.

283 See case COMP/M.4094 - *Ineos/BP Dormagen*, decision of 10.08.2006.

site supplies (i.e. supplies to other customers involving transport) constituted two separate markets, but ultimately left the exact market definition open.

The Notifying Party's view

(276) The Notifying Party submits that, for the case at hand, and given the Parties' very limited sales of EO in the EEA (amounting to less that EUR […] in value), the competitive assessment should be done based on a product market encompassing all EO sales.[284]

The Commission's assessment

(277) The majority of respondents to the market investigation indicated that EO is not substitutable with other products, explaining that it has specific properties and applications for which there are no substitutes available.[285] Some respondents indicated that a distinction between offsite EO (which is generally purified EO) and onsite EO (which is generally crude EO) may be justified, however, the majority of respondents did not consider that any segmentation of EO is necessary.[286]

(278) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for EO can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. as an overall EO market or segmented between onsite and off-site supplies).

7.2.1.1.2. Geographic market definition

The Commission's precedents

(279) In the past, the Commission has considered the relevant geographic market for EO and its potential sub-segments to be Western Europe (EEA plus Switzerland) or regional (Northern or Southern Europe), given the difficulties and costs associated with the transportation of this hazardous product,[287] but ultimately left the exact geographic market definition open.[288]

The Notifying Party's view

(280) The Notifying Party submits that, for the case at hand, there precise geographic market definition for EO can be left open given the very limited sales in the EEA of the Parties, whose market shares remain far below 30% regardless of the precise geographic market definition.[289]

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284 Form CO, paragraphs 1766-1767.

285 Responses to question 3 of *Q16 - Questionnaire to competitors and customers of Ethylene oxide*.

286 Responses to question 4 of *Q16 - Questionnaire to competitors and customers of Ethylene oxide*.

287 See cases COMP/M.5927 - *BASF/Cognis*, decision of 30.11.2010, COMP/M.4094 - *Ineos/BP Dormagen*, decision of 10.08.2006, COMP/M.4005 - *Ineos/Innovene*, decision of 09.12.2005 and COMP/M.2345 - Deutsche *BP/Erdölchemie*, decision of 26.04.2001.

288 See case COMP/M.5927 - *BASF/Cognis*, decision of 30.11.2010.

289 Form CO, paragraph 1768.

The Commission's assessment

(281) The market investigation indicated that the relevant geographic market for EO is likely regional or EEA-wide in scope, pointing to significant cross-border trade flows within, as well as beyond, the EEA.[290] Respondents generally considered that, due to the hazardous nature of the product, which makes transportation difficult, there is little or no overseas transportation of EO. Moreover, several market participants indicated that, in their view, the relevant geographic market for EO is wider than Western Europe and should also include Poland, Slovakia and Romania, and possibly go as far as Russia.[291]

(282) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for EO can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. regional or EEA-wide).

7.2.1.2. Ethylene glycols ("EG")

(283) As explained above in paragraph (72) onwards, the exact product and geographic market definitions for EG can be left open as no competitive concerns arise under any plausible product market definition (i.e. EG overall, or segmented between MEG, DEG and TEG) or geographic market definition (i.e. worldwide or EEA-wide).

7.2.2. Competitive assessment

(284) The Transaction gives rise to a vertically affected link concerning the supply of EO (upstream) and the supply of EG (downstream).

(285) Upstream, Saudi Aramco sells limited amounts of EO, at both worldwide and EEA level. More specifically, Saudi Aramco only sells EO through its affiliates […]. In turn, SABIC is not active in EO.

(286) Downstream, Saudi Aramco and SABIC both produce and sell EG. Saudi Aramco has no sales of EG in the EEA. SABIC sells EG at both EEA and worldwide levels (see section 6.2.2).

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290 Responses to question 5 of *Q16 - Questionnaire to competitors and customers of Ethylene oxide*. The market investigation strongly indicated that a market limited to Western Europe would not be appropriate for EO or for the purposes of the present Decision, so it is not considered further in this Decision.

291 Responses to question 8 of *Q16 - Questionnaire to competitors and customers of Ethylene oxide*.

(287) The Transaction gives rise to a vertically affected market between EO and EG because, despite the Parties' very limited shares, upstream, for the supply of EO, the downstream market shares for EG, MEG and DEG in the EEA of the Parties (generated by SABIC alone) accounted for respectively [30-40]%, [30-40]% and [30-40]% of the market(s) in 2018. Neither EG or its potential sub-segments are vertically affected at worldwide level.

(288) The Notifying Party's estimates of the Parties' and their largest competitors' market shares in EO[292] are in *Table 14* below.

Table 14: Market share estimates for EO (upstream) in the EEA, 2018 (by volume)[293]

Supplier	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*<[0-5]%*
SABIC	-	-
Combined	**[…]**	**<[0-5]%**
INEOS	[…]	[50-60]%
BASF	[…]	[10-20]%
Royal Dutch Shell	[…]	[10-20]%
Cristian Lay	[…]	[5-10]%
Akzo Nobel	[…]	[0-5]%
-	-	-
-	-	-
-	-	-
Others	[…]	[10-20]%
Total Market	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

(289) The Notifying Party's estimates of the Parties' and their largest competitors' market shares in EG in the EEA for 2018 are shown in *Table 15* below.

292 If the relevant product market for EO were segmented between EO supplied onsite and EO supplied offsite, the Notifying Party estimates that Saudi Aramco's market share would not exceed [0-5]% in each of these hypothetical sub-segments for the supply of EO in the EEA. In light of this fact, Saudi Aramco's negligible sales of EO in the EEA (EUR […] in value terms) and of the reasons set out in paragraph (294) below, serious doubts would not arise on these alternative market definitions.

293 This Table sets out market share estimates for the EEA. Worldwide, Saudi Aramco's (2018 volume) share would only be [0-5]%. The Notifying Party has not provided market share estimates on a narrower geographic market (e.g. regional) or a wider market encompassing Russia. Nevertheless, in light of Saudi Aramco's negligible sales of EO in the EEA (EUR […] in value terms) and of the reasons set out in paragraph (294) below, serious doubts would not arise on these alternative market definitions.

Table 15: Market share estimates for EG (downstream) in the EEA, 2018 (by volume)

EG (overall)			**MEG**			**DEG**		
Supplier	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**
Saudi Aramco	-	-	*Saudi Aramco*	-	-	*Saudi Aramco*	-	-
SABIC	*[…]*	*[30-40]%*	*SABIC*	*[…]*	*[30-40]%*	*SABIC*	*[…]*	*[30-40]%*
Combined	**[…]**	**[30-40]%**	**Combined**	**[…]**	**[30-40]%**	**Combined**	**[…]**	**[30-40]%**
INEOS	[…]	[10-20]%	INEOS	[…]	[20-30]%	INEOS	[…]	[5-10]%
BASF	[…]	[10-20]%	BASF	[…]	[10-20]%	Kuwait Government	[…]	[5-10]%
Royal Dutch Shell	[…]	[5-10]%	Royal Dutch Shell	[…]	[5-10]%	DowDuPont	[…]	[5-10]%
PKN Orlen	[…]	[0-5]%	PKN Orlen	[…]	[0-5]%	BASF	[…]	[5-10]%
Clariant	[…]	[0-5]%	Clariant	[…]	[0-5]%	Reliance Industries	[…]	[0-5]%
DowDuPont	[…]	[0-5]%	-	-	-	Royal Dutch Shell	[…]	[0-5]%
ExxonMobil	[…]	[0-5]%	-	-	-	ExxonMobil	[…]	[0-5]%
Kuwait Government	[…]	[0-5]%	-	-	-	Clariant	[…]	[0-5]%
Others	[…]	[5-10]%	Others	[…]	[5-10]%	Others	[…]	[40-50]%
Total Market	[…]	100%	**Total market**	[…]	**100%**	**Total market**	[…]	**100%**

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(290) The Notifying Party considers that post-Transaction, the combined entity will be unlikely to engage in any customer foreclosure strategy by restricting its purchases of EO from its upstream rivals.[294]

(291) In particular, the Notifying Party submits that Saudi Aramco and SABIC do not purchase EO externally, but satisfy the entirety of their needs of EO for the manufacture of EG through their internal EO production. The Notifying Party claims that, since the Parties do not purchase EO from upstream rivals, and consequently there are no EO suppliers to foreclose, the combined entity would lack the ability to engage in any customer foreclosure strategy post-Transaction.

The Commission's assessment

(292) Given the Parties' (through Saudi Aramco) small market shares in the upstream market for EO, and consequently the combined entity's inability to foreclose access to EO post-Transaction, input foreclosure will not be assessed in the present Decision.

(293) Regarding potential customer foreclosure risks, the results of the Commission's market investigation indicated that the combined entity is unlikely to be able to successfully engage in any customer foreclosure strategy in relation to EO rivals (upstream) through its downstream position in EG.

(294) First, as regards ability, the market investigation confirmed the Notifying Party's estimates that the combined entity will be a large supplier of EG in the EEA. However, the market investigation indicated that the combined entity would not

294 Form CO, paragraphs 1791-1799.

have the ability to engage in a customer foreclosure strategy. The market investigation broadly confirmed that the vast majority of EG suppliers are already vertically integrated and produce EO to address their internal needs, and in general do not source this product externally, which considerably restrains the Parties' ability to engage in any customer foreclosure strategy.[295] Importantly, as the Parties do not procure EO from third parties they cannot foreclose any EO suppliers (e.g. by reducing or stopping purchases of EO from them). All EO manufacturers that responded to the market investigation confirmed that they do not have any material concerns about a potential customer foreclosure strategy and that, post-Transaction, they would still have enough customers to sell EO to at both worldwide and EEA level.[296] In light of the above, it is unlikely that the combined entity would have the ability to foreclose manufacturers of EO (upstream) through a customer foreclosure strategy.

(295) Second, as regards incentive, the market investigation has broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that Saudi Aramco is considered a very minor supplier of EO at EEA level.[297] This would tend to support the view that even if such a customer foreclosure was possible, and was efficiently implemented so that it successfully managed to bring up the prices for EO in the EEA, the Parties' very modest market share in this market would significantly limit the benefits that the combined entity would reap from such a strategy.

(296) Third, such a strategy is unlikely to have an adverse impact in the downstream market for EG in the EEA or worldwide, mainly because the vast majority of EG suppliers are vertically integrated for their EO supply. The majority of respondents confirmed that, post-Transaction, there will remain a number of strong suppliers of EO who will continue to constrain the combined entity at both worldwide and EEA level, such as INEOS, BASF and Royal Dutch Shell.[298] The market investigation moreover confirmed that non-integrated customers of EO typically procure EO from multiple suppliers, can switch fairly easily and that they do switch in practice.[299] Therefore, customers will have effective and timely counter-strategies to any attempt by the combined entity to increase prices or reduce sales upstream. Moreover, respondents do not expect that the Transaction would have any negative impact on prices, quality, choice or innovation for the market for EG (or indeed EO) at either EEA or worldwide level and no material concerns were raised regarding either product.[300]

(297) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that it is unlikely that the

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295 Responses to question 5 of *Q16 - Questionnaire to competitors and customers of Ethylene Oxide*. Also note that the Commission has already in the past adjudicated on the validity of this general argument to dispel any competitive concern as regards the vertical relationship between EO and EG in case COMP/M.4094 - *Ineos/BP Dormagen*, decision of 10.08.2006.

296 Responses to question 17 of *Q16 - Questionnaire to competitors and customers of Ethylene Oxide*.

297 Responses to question 12 of *Q16 - Questionnaire to competitors and customers of Ethylene Oxide*.

298 Responses to question 17 of *Q16 - Questionnaire to competitors and customers of Ethylene Oxide*.

299 Responses to questions 13, 14 and 15 of *Q16 - Questionnaire to competitors and customers of Ethylene Oxide*.

300 Responses to question 22 of *Q2 - Questionnaire to competitors and customers of Ethylene Glycols*, and responses to questions 18.1, 18.2 and 19 of *Q16 - Questionnaire to competitors and customers of Ethylene Oxide*.

Transaction would lead to customer foreclosure risks from the vertical link between EO (upstream) and EG (downstream).

7.3. Butadiene (upstream) with chloroprene rubber (downstream)

7.3.1. Market definitions

7.3.1.1. Butadiene

(298) Butadiene is a reactive, colourless gas generally stored and supplied in pressurised and refrigerated tanks or pipelines. It can be produced by extractive distillation from crude C4, which is a by-product of ethylene and propylene production, or as a by-product of the steam cracking of naphtha. Butadiene is used as an input to manufacture a number of products. It is used to produce (i) "rubber type" polymers (e.g. chloroprene rubber, polybutadiene rubber, styrene butadiene rubber), which are used in automotive tyres, hoses, conveyor belts, footwear, flooring, additives, gloves, etc., and (ii) "plastic type" polymers, which are used in consumer and industry electronics, automotive parts, etc. Production of two types of synthetic rubber, namely polybutadiene rubber and styrene butadiene rubber, accounts for nearly 55% of global butadiene demand.

7.3.1.1.1. Product market definition

The Commission's precedents

(299) The Commission has considered the market for butadiene in previous decisions.[301] The Commission has previously considered that butadiene is a separate product market,[302] but in more recent decisions it left the precise market definition open.[303] In addition, the Commission's market investigation in a previous case suggested that there is only one grade of butadiene.[304]

The Notifying Party's view

(300) The Notifying Party submits that, for the purposes of the present Decision, the exact product market definition can be left open because the Transaction will not lead to competition concerns regardless of the market definition adopted.[305]

The Commission's assessment

(301) The majority of respondents to the market investigation indicated that butadiene is not substitutable with other products given its specific properties.[306] The majority

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301 See case COMP/M.6905 - *Ineos/Solvay*, decision of 8.05.2014. See also case COMP/M.4041 *Basell/Société du Craqueur de l'Aubette*, decision of 22.12.2015 and case COMP/M.2345 *Deutsche BP/ Erdölchemie*, decision of 26.04.2001.

302 See case COMP/M.2345 *Deutsche BP/ Erdölchemie*, decision of 26.04.2001.

303 See case COMP/M.6905 - *Ineos/Solvay*, decision of 8.05.2014 and COMP/M.4041 *Basell/Société du Craqueur de l'Aubette*, decision of 22.12.2015.

304 See case COMP/M.6905 - *Ineos/Solvay*, decision of 8.05.2014. See also case COMP/M.4041 *Basell/Société du Craqueur de l'Aubette*, decision of 22.12.2015 and case COMP/M.2345 *Deutsche BP/ Erdölchemie*, decision of 26.04.2001.

305 Form CO, paragraphs 471-473.

306 Responses to question 3 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

also confirmed that no further segmentation is necessary (for instance by grade) and that butadiene is a commodity product.[307]

(302) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for butadiene can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition.

7.3.1.1.1. Geographic market definition

The Commission's precedents

(303) In a past decision, the Commission found that the relevant geographic market for butadiene was Western Europe.[308] In more recent decisions, the Commission has considered the relevant geographic market for butadiene could be at least "Western Europe +", (i.e. including Western Member States, Poland and the Czech Republic) but ultimately left the geographic market for butadiene open.[309]

The Notifying Party's view

(304) The Notifying Party submits that the relevant geographic market for butadiene is global or at least EEA-wide in scope, arguing that there are no trade barriers, that manufacturers of butadiene supply customers around the world with significant trade flows and that the EEA is a large net exporter of butadiene to other regions.[310]

The Commission's assessment

(305) The market investigation indicated that the relevant geographic market for butadiene could be EEA-wide or even worldwide.[311] The majority of respondents considered that the market for butadiene is worldwide or EEA-wide, noting that butadiene is traded around the world and that the EEA is a net exporter of butadiene due to comparatively low feedstock prices in Europe.[312] Competitors explained that, given the favourable feedstock prices within the EEA, imports to the EEA are relatively limited.[313] However, the majority of customers responding to the market investigation confirmed that they could credibly source butadiene from suppliers based outside the EEA for use in their facilities within the EEA.[314] The respondents

307 Responses to question 4 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

308 See case COMP/M.2345 *Deutsche BP/Erdölchemie*, decision of 26.04.2001

309 See case COMP/M.6905 - *Ineos/Solvay*, decision of 8.05.2014. See also case COMP/M.4041 *Basell/Société du Craqueur de l'Aubette*, decision of 22.12.2015 and case COMP/M.2345 *Deutsche BP/Erdölchemie*, decision of 26.04.2001.

310 Form CO paragraphs 474-477.

311 The market investigation strongly indicated that a market limited to Western Europe+ would not be appropriate for butadiene or any of its sub-segments for the purposes of the present Decision, so it is not considered further in this Decision.

312 Responses to question 5 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

313 Responses to questions 5 and 6 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

314 Responses to question 7 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

to the investigation confirmed that, provided prices are favourable, there are no barriers to selling butadiene EEA-wide or worldwide.[315]

(306) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for butadiene can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

7.3.1.2.Chloroprene rubber

(307) Chloroprene rubber (also referred to as polychloroprene or neoprene) is a synthetic rubber with a high chlorine content that is produced by polymerising chloroprene. Chloroprene rubber has good mechanical strength, low flammability and good resistance to ozone, weather, aging and chemicals. Chloroprene rubber is used mainly for technical rubber parts (such as cables and hoses), which are often used in the automotive industry, as well as for adhesives (in particular in the shoe and furniture industries) and as latex for diving equipment, bitumen modifications and the inner sole of shoes.

7.3.1.2.1 Product market definition

The Commission's precedents

(308) In a past decision, the Commission found that the chloroprene rubber forms a separate product market.[316] In particular, the Commission noted that synthetic elastomers, such as chloroprene rubber, have specific characteristics and/or costs which define the applications for which they may be used.

The Notifying Party's view

(309) The Notifying Party submits that, for the purposes of the present Decision, the exact product market definition can be left open, because the Transaction would not lead to any competitive concerns, regardless of the precise market definition.[317]

The Commission's assessment

(310) The majority of respondents to the market investigation indicated that chloroprene rubber is not substitutable with other products given its specific properties and applications.[318] A majority of customers also indicated that it may be appropriate to further segment chloroprene rubber by grade, in particular as certain applications require chloroprene rubber with a low monomer content.[319]

(311) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for chloroprene rubber

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315 Responses to questions 8.1 and 8.2 of *Q17 - Questionnaire to competitors and customers of Butadiene*. Some respondents noted that REACH authorisation may be necessary to sell within the EEA, but this was not considered a material barrier.

316 See case COMP IV/M.663 - *Dow/Dupont*, decision of 21.02.1996.

317 Form CO, paragraphs 2080-2081.

318 Responses to question 3 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

319 Responses to question 4 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. chloroprene rubber overall or segmented by grade).

7.3.1.2.2. Geographic market definition

The Commission's precedents

(312) In a past decision, the Commission has considered the relevant geographic market for chloroprene rubber to be EEA-wide, if not wider, but ultimately left the precise market definition open[320] In a past cartel decision relating to chloroprene rubber, the Commission noted that "*the major suppliers and customers are present in each of the principal economic regions of the world and operated on a global basis*".[321]

The Notifying Party's view

(313) The Notifying Party submits that the relevant geographic market for chloroprene rubber is global or at least EEA-wide in scope, arguing that there are no trade barriers, manufacturers of chloroprene rubber supply customers around the world and transportation costs are low.[322] However, the Notifying Party submits that for the purposes of the present Decision, the exact geographic market definition can be left open as the Transaction will not will not lead to any competitive concerns regardless of the definition adopted.

The Commission's assessment

(314) The market investigation indicated that the relevant geographic market for chloroprene rubber is likely worldwide or at least EEA-wide. The majority of respondents considered there are no barriers to selling chloroprene rubber EEA-wide.[323] While responses were split on whether there are barriers to selling chloroprene rubber worldwide, respondents explained that chloroprene rubber is in practice shipped worldwide and considered the market for chloroprene rubber to be worldwide.[324] Competitors explained that they can readily supply EEA customers from their production facilities based outside the EEA.[325] Customers responding to the market investigation confirmed that they can and do source chloroprene rubber from suppliers based outside the EEA for use in their facilities within the EEA (citing examples of sourcing from Japan, the US and China).[326]

(315) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for chloroprene rubber can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

320 See case COMP/M.663 - *Dow/Dupont*, decision of 21.02.1996.

321 See case COMP/38629 *Chloroprene Rubber*, Commission decision of 05.12.2007.

322 Form CO, paragraphs 2082-2085.

323 Responses to question 8.1 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

324 Responses to questions 5 and 8.2 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

325 Responses to question 6 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

326 Responses to question 7 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

7.3.2. *Competitive assessment*

(316) The Transaction gives rise to a vertically affected link concerning the supply of butadiene (upstream) and the supply of chloroprene rubber (downstream).

(317) Upstream, both Parties supply butadiene in the EEA and worldwide – SABIC through its facilities in the UK, the Netherlands and Saudi Arabia; and Saudi Aramco through a joint venture with SINOPEC, located in China.

(318) Downstream, Saudi Aramco produces chloroprene rubber in Germany and sells it in the EEA and worldwide, but SABIC is not active.

(319) According to the Notifying Party's estimates, this link is vertically affected due to the market shares of the Parties (through Saudi Aramco) in the downstream supply of chloroprene rubber in the EEA (which was [40-50]% in 2018). At worldwide level, the supply of chloroprene rubber is not vertically affected as the Parties' shares remain below 30%.[327]

(320) The Notifying Party's estimates for the Parties' and their largest competitors' market shares in the supply of butadiene (upstream) and chloroprene rubber (downstream) worldwide and in the EEA in 2018 are shown in Tables 16 and 17 below.

Table 16: Market share estimates for butadiene (upstream) worldwide and in the EEA, 2018 (by volume)

Worldwide			**EEA-wide**		
Supplier	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[0-5]%*	*Saudi Aramco*	*[…]*	*<[0-5]%*
SABIC	*[…]*	*[0-5]%*	*SABIC*	*[…]*	*[10-20]%*
Combined	**[…]**	**[0-5]%**	**Combined**	**[…]**	**[10-20]%**
Royal Dutch Shell	[…]	[5-10]%	DowDuPont	[…]	[10-20]%
TPC Group	[…]	[5-10]%	Evonik Industries	[…]	[10-20]%
LyondellBasell	[…]	[5-10]%	LyondellBasell	[…]	[10-20]%
Formosa	[…]	[0-5]%	INEOS	[…]	[5-10]%
SINOPEC	[…]	[0-5]%	BASF	[…]	[5-10]%
ExxonMobil	[…]	[0-5]%	Repsol	[…]	[5-10]%
Total	[…]	[0-5]%	Total	[…]	[5-10]%
BASF	[…]	[0-5]%	Royal Dutch Shell	[…]	[5-10]%
Others	[…]	[50-60]%	Others	[…]	[20-30]%
Total Market	*[…]*	*100%*	*Total Market*	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

327 According to the Notifying Party's estimates, Saudi Aramco's worldwide market share in chloroprene rubber (downstream) was [10-20]% in volume in 2018.

Table 17: Market share estimates for chloroprene rubber (downstream) in the EEA, 2018 (by volume)[328]

Supplier	Volume (kt)	Share
Saudi Aramco	*[…]*	*[40-50]%*
SABIC	-	-
Combined	**[…]**	**[40-50]%**
Denka Company	[…]	[20-30]%
TOSOH	[…]	[10-20]%
Showa Denko	[…]	[5-10]%
AkzoNobel	[…]	[0-5]%
Mitsui & Co.	[…]	[0-5]%
-	-	-
-	-	-
Others	[…]	[5-10]%
Total Market	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(321) The Notifying Party submits that the Transaction will not give rise to any competition concerns based on customer foreclosure on the basis that a number of large suppliers of butadiene will remain post-Transaction and a sufficient customer base for butadiene will remain.[329] More specifically, it argues that the combined entity will not have any ability to engage in a customer foreclosure strategy, as the Parties have a small combined share on the upstream market for butadiene in the EEA ([10-20]%) and only a small proportion (less than 5% worldwide) of the butadiene sold on the merchant market is used to produce chloroprene rubber. It argues that Saudi Aramco's purchases of butadiene represent a small proportion of the overall merchant market purchases of butadiene in the EEA (around [10-20]% in 2018)[330] and that [Information about Saudi Aramco's supply arrangements] which cannot be terminated before the end of […]. The Notifying Party argues further that the combined entity will not have any incentive to engage in a customer foreclosure strategy, as it is a relatively small purchaser of butadiene from one of the world's largest suppliers and so any foreclosure attempt is unlikely to be successful, […].[331]

The Commission's assessment

(322) Given the Parties' small market shares in the upstream market for butadiene, and consequently the combined entity's inability to foreclose access to butadiene post-Transaction, input foreclosure will not be assessed in the present Decision.

(323) Regarding potential customer foreclosure risks, the results of the Commission's market investigation indicated that the combined entity is unlikely to be able to successfully engage in any customer foreclosure strategy in relation to butadiene rivals (upstream) through its downstream position in chloroprene rubber.[332]

328 At worldwide level, the Notifying Party estimates that the (2018 volume) market share of the Parties (generated via SABIC) for the supply of chloroprene rubber amounted to [10-20]%.

329 Form CO, paragraphs 2086-2186.

330 Form CO, Annex D.

331 Form CO paragraph 2182.

332 For the purposes of this Decision, when assessing the potential for customer foreclosure risks arising as a result of the Parties' vertical link between butadiene (upstream) and chloroprene rubber (downstream), the Commission analysed the downstream product market overall, i.e. at the level of

(324) First, as regards ability, the market investigation confirmed the Notifying Party's estimates that Saudi Aramco is a large supplier of chloroprene rubber in the EEA.[333] However, the market investigation confirmed that the combined entity would not have the ability to engage in a customer foreclosure strategy. The market investigation confirmed that butadiene is a commodity product, and respondents noted that it is used to manufacture a range of rubber products.[334] This, together with the responses and data received as part of the market investigation,[335] supports the Notifying Party's arguments that Saudi Aramco only represents a modest proportion of purchases of butadiene in the EEA. Moreover, the majority of respondents did not expect the Transaction to have a significant impact on the market for butadiene and, in particular, the majority of suppliers that expressed a view considered that there will remain a sufficient pool of customers to which they can sell butadiene post-Transaction.[336] In light of the above, it is unlikely that the combined entity would have the ability to foreclose butadiene suppliers (upstream) by attempting a customer foreclosure strategy.

(325) Second, as regards incentives, the market investigation has broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that Saudi Aramco is a very minor supplier of butadiene at EEA level.[337] This would tend to support the view that even if such customer foreclosure was possible, and was efficiently implemented so that it successfully managed to bring up the prices for butadiene in the EEA, the Parties' very modest market share in this market would significantly limit the benefits that the combined entity would reap from such a strategy. However, some respondents to the market investigation considered that the combined entity may have an incentive to vertically integrate its supply of butadiene with the manufacture of downstream products (such as chloroprene rubber), though others noted that this may not be feasible from a logistical perspective.[338]

(326) Third, even if the combined entity completely ceases to purchase butadiene from upstream rivals post-Transaction, such a strategy is unlikely to have an adverse impact in the downstream market for chloroprene rubber in the EEA. As explained above, the combined entity is a small purchaser of butadiene. Consequently, an

chloroprene rubber. Even if the (downstream) product market for chloroprene rubber were segmented by grade and the combined entity were to be the sole supplier of a particular grade, for the same reasons as for chloroprene rubber, the Transaction would not raise serious doubts as to its compatibility as a result of this vertical link. Indeed, (i) all plausible grades of chloroprene rubber use butadiene as an input, and (ii) regardless of the plausible sub-segmentation of chloroprene rubber, for the reasons described in this Section (in particular, the Parties' low share of purchases of butadiene, their low share of sales of butadiene, and the fact that respondents to the market investigation did not raise any concerns regarding a potential foreclosure risk), the Parties will lack the ability and incentive to engage in a customer foreclosure strategy, and even if they do, such strategy is unlikely to have an adverse impact in the downstream market for chloroprene rubber (or any of its sub-segments) in the EEA.

333 Responses to questions 11.1 and 12 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

334 Responses to questions 3, 4 and 14 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

335 Responses to question 9 of *Q17 - Questionnaire to competitors and customers of Butadiene*, and Form CO Annex D.

336 Responses to questions 17 and 18 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

337 Responses to questions 9, 10, 11 and 12 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

338 Responses to question 18 of *Q17 - Questionnaire to competitors and customers of Butadiene* and question 18 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber.*

insufficient fraction of butadiene output (upstream) would be affected by the revenue decreases resulting from the fact that the combined entity would, post-Transaction, completely cease to purchase butadiene from upstream rivals. Accordingly, some respondents stated that even if Saudi Aramco were to vertically integrate its butadiene and chloroprene rubber activities they do not expect this to have a material impact on the market for chloroprene rubber given that chloroprene rubber production is a small use of butadiene.[339] Moreover, even if the impact were concentrated on one upstream supplier who faces a cost increase as a result, there are a number of strong suppliers of butadiene, including Evonik, INEOS, BASF, Dow, PKN Orlen, Total and others,[340] who would be unaffected, and customers can switch fairly easily.[341] Finally, while butadiene appears to be a material input cost in the manufacture of chloroprene rubber ([20-30]%, according to the Notifying Party),[342] a number of respondents explained that the market for butadiene is "long" in the EEA, in that there is a greater supply of butadiene than demand because feedstock prices in the EEA are competitive.[343] Therefore, it is unlikely that a customer foreclosure attempt would have an impact upstream, but even if it did, downstream customers would have an effective and timely counter-strategy to any foreclosure attempt.

(327) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the vertical link between butadiene (upstream) and chloroprene rubber (downstream) and, in particular, that it is unlikely that this vertical link would lead to customer foreclosure risks.

7.4. Ethylene (upstream) with C4 LLDPE (downstream); butene-1 (upstream) with C4 LLDPE (downstream)

(328) In this Section, the Commission analyses the vertical effects arising from the Transaction because of the vertically affected market in the supply of C4 LLDPE (where both Parties are active), which is vertically linked with the supply of two products: ethylene (where both Parties are active) and butene-1 (where only SABIC is active).

7.4.1. Market definitions

2. 7.4.1.1. Ethylene

(329) Ethylene is the simplest olefin hydrocarbon, and the most widely produced organic compound worldwide. It occurs naturally in crude oil and natural gas, but it is mostly produced industrially by cracking heavier hydrocarbons such as naphtha, liquid petroleum gas, or ethane.

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339 Responses to question 18 of *Q18 - Questionnaire to competitors and customers of Chloroprene rubber*.

340 Responses to questions 9 and 11 of *Q17 - Questionnaire to competitors and customers of Butadiene.*

341 Responses to questions 13, 14 and 15 of *Q17 - Questionnaire to competitors and customers of Butadiene*.

342 Form CO, paragraph 2171

343 Responses to questions 5, 6 and 7 of *Q17 - Questionnaire to competitors and customers of Butadiene*.

(330) Ethylene is used to produce polyethylene, ethylene oxide, or ethylbenzene, which themselves serve to produce a number of second-level derivatives including EG.

7.4.1.1.1. Product market definition

The Commission's precedents

(331) The Commission has previously considered ethylene to be a separate relevant product market.[344]

The Notifying Party's view

(332) The Notifying Party does not disagree with the Commission's precedents.[345]

The Commission's assessment

(333) The market investigation has largely confirmed the Commission's precedents that ethylene is a separate relevant product market. Market respondents generally agreed that ethylene is a commodity product with a single grade and is not substitutable with any other products.[346]

(334) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for ethylene can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition.

7.4.1.1.2. Geographic market definition

The Commission's precedents

(335) The Commission previously considered that the relevant geographic market for ethylene should be as broad as the available pipeline networks, given its highly flammable nature that makes it unsuitable for road or rail transport.[347]

The Notifying Party's view

(336) The Notifying Party submits that the market for ethylene is global or at least EEA-wide in scope.[348] This is due to the fact that there are no trade barriers globally and especially between EEA countries, and that transport between various global regions has significantly increased over the past years. For instance, the Notifying Party notes that the ethylene it sells to the EEA is [Information on Saudi Aramco's commercialization of ethylene in the EEA], and that a portion of the ethylene it produces in the EEA is sold to China. Therefore, the Notifying Party considers that the Commission's precedents are overly narrow and should be widened to include at least the territory of the EEA.

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344 See case COMP/M.4744 - *Ineos/Borealis*, decision of 24.08.2007 and case COMP/M.2345 - *Deutsche BP/Erdölchemie*, decision of 26.04.2001.

345 Form CO, paragraphs 125-126.

346 Responses to questions 3 and 4 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

347 See case COMP/M.4744 - *Ineos/Borealis*, decision of 24.08.2007 and case COMP/M.2345 - *Deutsche BP/Erdölchemie*, decision of 26.04.2001.

348 Form CO, paragraphs 129-135.

The Commission's assessment

(337) The market investigation confirmed that while ethylene can be and is shipped globally, the viability of trading it in EEA is limited by the need to have access to the pipeline network and to coastal storage facilities via an existing terminal.[349] Therefore, respondents to the market investigation appeared to equate the EEA with the pipeline network. The majority of customers reported purchasing ethylene for use in the EEA from EEA-based suppliers, and saw no major barriers to purchasing from anywhere in the EEA.[350] Additionally, the majority of suppliers indicated that they sold ethylene on a global scale, and the majority of customers considered that suppliers' plants outside EEA could credibly sell ethylene to customers in the EEA.[351]

(338) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for ethylene can be left open between EEA and worldwide, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition.

7.4.1.2.Butene-1 (C4)

(339) Butene-1 is the shortest type of Linear Alpha Olefin ("LAO"), which are classified by the length of the hydrocarbon chain, varying from four carbons (butene-1) to more than thirty (expressed as C30+). LAOs have a wide range of applications. Butene-1 (C4) is primarily used as a co-monomer in the production of some differentiated types of polyethylene (HDPE and C4 LLDPE). Butene-1 is also used as an intermediary in the production of various chemical products including butyl mercaptan, aldehyde intermediates, alcohols and other C4 derivatives.

7.4.1.2.1. Product market definition

The Commission's precedents

(340) The Commission has not previously considered butene-1 as a separate relevant product market. It has treated LAOs as a separate market, but it has also left open whether LAOs should be further sub-segmented.[352]

The Notifying Party's view

(341) The Notifying Party does not disagree with the Commission's precedents.[353]

The Commission's assessment

(342) Most respondents to the market investigation considered LAOs can be substituted with each other and therefore constitute a single relevant product market. However, some indicated that for the manufacture of polyethylene, substitution between

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349 Responses to questions 5 and 6 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

350 Responses to questions 9 and 10 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

351 Responses to questions 7 and 8 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

352 See case COMP/M.1293 - *BP/Amoco*, decision of 11.12.1998 and case COMP/M.2299 - *BP Chemicals/Solvay/HDPE JV*, decision of 29.11.2001.

353 Form CO, paragraph 1419.

different types of LAOs might prove costly and would require reformulation as well as approval work.[354]

(343) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for butene-1 can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. as an overall LAO market or a narrower market for butene-1).

7.4.1.2.2. Geographic market definition

The Commission's precedents

(344) The Commission has not previously considered the geographic scope of a plausible market for butene-1. It has, however, considered that the geographic market for all LAOs (including butene-1) would be global or at least EEA-wide.[355]

The Notifying Party's view

(345) The Notifying Party submits that the geographic market for the production and sale of all LAOs is global or at least EEA-wide in scope, as there are no trade barriers globally and especially in the EEA.[356]

The Commission's assessment

(346) The Commission's market investigation confirmed that all LAOs are globally traded with ease and with no major barriers impeding it.[357] Suppliers indicated that they would be able to easily supply the EEA from plants outside it, and customers considered that plants outside the EEA can credibly sell LAOs to customers in the EEA.[358]

(347) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for butene-1 can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

7.4.1.3.C4 LLDPE

(348) As explained above in paragraphs (117) onwards, the exact product and geographic market definitions can be left open as no competitive concerns arise under any plausible product market definition (including if polyethylene is segmented between LDPE, LLDPE and HDPE or by comonomer, for example to the level of C4 LLDPE) or geographic market definition (worldwide or EEA-wide).

354 Responses to question 4 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

355 See case COMP/M.1293 - *BP/Amoco*, decision of 11.12.1998 and case COMP/M.2299 - *BP Chemicals/Solvay/HDPE JV*, decision of 29.11.2001.

356 Form CO, paragraphs 1420-1421.

357 Responses to questions 5 and 8 of Q*15 - Questionnaire to competitors and customers of Hexene-1*.

358 Responses to questions 6 and 7 of Q*15 - Questionnaire to competitors and customers of Hexene-1*.

7.4.2. Competitive assessment

3. 7.4.2.1. Ethylene (upstream) with C4 LLDPE (downstream)

(349) The Transaction gives rise to a vertically affected link concerning the supply of ethylene (upstream) and the supply of C4 LLDPE (downstream). Upstream, both Parties produce ethylene (upstream) and sell it worldwide and in the EEA. Downstream, both Parties produce C4 LLDPE and sell it worldwide and in the EEA.

(350) This link is vertically affected in the EEA because of the Parties' market shares in 2018 in the potential downstream market for C4 LLDPE (SABIC: [30-40]%; Saudi Aramco: [0-5]%; combined: [30-40]%). Worldwide, the market for C4 LLDPE does not give rise to a vertically affected market as the Parties' market share remain below 30%.

(351) The Notifying Party's estimates of the Parties' and their largest competitors' market shares in ethylene worldwide and in the EEA for 2018 are shown in *Table 18* below. In addition, the Notifying Party's estimates of the Parties' market shares in C4 LLDPE (downstream) in the EEA for 2018 can be seen in Table 7 above.

Table 18: Market share estimates for ethylene (upstream) worldwide and in the EEA, 2018 (by volume)

Worldwide			**EEA-wide**		
Supplier	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[0-5]%*	*Saudi Aramco*	*[…]*	*[0-5]%*
SABIC	*[…]*	*[0-5]%*	*SABIC*	*[…]*	*[10-20]%*
Combined	**[…]**	**[0-5]%**	**Combined**	**[…]**	**[10-20]%**
Royal Dutch Shell	[…]	[5-10]%	BP	[…]	[10-20]%
DowDuPont	[…]	[5-10]%	Total	[…]	[10-20]%
Mubadala Petroleum and Petrochemicals	[…]	[5-10]%	Royal Dutch Shell	[…]	[10-20]%
CPC-Taiwan	[…]	[0-5]%	BASF	[…]	[10-20]%
BASF	[…]	[0-5]%	DowDuPont	[…]	[5-10]%
Others	[…]	[60-70]%	Others	[…]	[10-20]%
Total Market	*[…]*	*100%*	*Total Market*	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(352) The Notifying Party submits that the combined entity would lack the ability or incentive to engage in a customer foreclosure strategy. This is due to the Parties' relatively low market shares in C4 LLDPE and the existence of a sufficient customer base for ethylene downstream post-Transaction.[359]

The Commission's assessment

(353) Given the Parties' small market shares in the upstream market for ethylene, and consequently the combined entity's inability to foreclose access to ethylene post-Transaction, input foreclosure will not be assessed in the present Decision.

(354) Regarding potential customer foreclosure risks, the results of the market investigation indicated that the combined entity is unlikely to be able to successfully

359 Form CO, paragraphs 1526-1531.

engage in any customer foreclosure strategy in relation to ethylene rivals (upstream) through its downstream position in C4 LLDPE.

(355) First, as regards ability, the data provided by the Notifying Party and received pursuant to the market investigation confirmed that the combined entity is a relatively small purchaser of ethylene in the EEA and worldwide.[360] The majority of respondents did not expect the Transaction to have a significant impact on the market for ethylene and, in particular, the majority of suppliers that expressed a view considered that there will remain a sufficient pool of customers to which they can sell ethylene post-Transaction.[361] In light of the above, it is unlikely that the combined entity would have the ability to foreclose ethylene suppliers (upstream) by attempting a customer foreclosure strategy.

(356) Second, as regards incentive, the market investigation has broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that Saudi Aramco is considered a very minor supplier of ethylene, at both worldwide and EEA level, and irrespective of the precise market definition considered.[362] This supports the idea that even if such a customer foreclosure was possible, and was efficiently implemented so that it successfully managed to bring up the prices for ethylene in the EEA or worldwide, the Parties' modest market share in this market would severely limit the benefits that the combined entity would reap from such a strategy.

(357) Third, even if the combined entity completely ceases to purchase ethylene from upstream rivals post-Transaction, such a strategy is unlikely to have an adverse impact in the downstream market for C4 LLDPE in the EEA. As explained above, the combined entity is a small purchaser of ethylene. Consequently, an insufficient fraction of ethylene output (upstream) would be affected by the revenue decreases resulting from the fact that the combined entity would, post-Transaction, completely cease to purchase ethylene from upstream rivals. Moreover, even if the impact were concentrated on one upstream supplier who faces a costs increase as a result, the market investigation confirmed that there are a number of strong suppliers of ethylene in the EEA that will remain post-Transaction, including BASF, BP, Dow, Shell, Total and others.[363] The majority of customers also confirmed that they multi-source and that switching between suppliers of ethylene (which they indicated is a commodity product) is easy.[364] Therefore, it is unlikely that a customer foreclosure attempt would have an impact upstream, but even if it did, downstream customers would have an effective and timely counter-strategy to any foreclosure attempt.

(358) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, for the purposes of the present Decision the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the vertical link between ethylene (upstream) with C4 LLDPE (downstream), regardless of whether the market is considered to be EEA-wide or worldwide.

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360 Responses to question 11 of *Q13 - Questionnaire to competitors and customers of Ethylene* and Form CO, Annex D.

361 Responses to question 19 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

362 Responses to question 13 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

363 Responses to question 13.1 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

364 Responses to questions 15 and 16 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

7.4.2.2.Butene-1 (upstream) with C4 LLDPE (downstream)

(359) SABIC produces and sells butene-1 (upstream) worldwide, but it does not sell it in the EEA. Saudi Aramco is not active in the production or supply of butene-1 (be it in the EEA or worldwide). Both Parties sell C4 LLDPE (downstream) worldwide and in the EEA. This link is vertically affected in the EEA because of the Parties' market shares in 2018 in the potential downstream market for C4 LLDPE (SABIC: [30-40]%; Saudi Aramco: [0-5]%; combined: [30-40]%). The Parties' market shares in C4 LLDPE for 2018 can be seen in *Table 7* above. The link with butene-1 worldwide is assessed below.

(360) The Parties' market shares in butene-1 are in *Table 19* below:[365]

Table 19: Market share estimates for butene-1 worldwide, 2018 (by volume)[366]

Supplier	**Volume (kt)**	**Share**
Saudi Aramco	-	-
SABIC	*[…]*	*[0-5]%*
Combined	**[…]**	**[0-5]%**
Evonik Industries	[…]	[20-30]%
TPC Group	[…]	[10-20]%
Royal Dutch Shell	[…]	[10-20]%
Sumitomo Chem.	[…]	[0-5]%
TASCO	[…]	[0-5]%
Others	[…]	[40-50]
Total Market	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(361) The Notifying Party submits that the combined entity would lack the ability or incentive to engage in a customer foreclosure strategy. This is due to the fact that butene-1 has a variety of applications other than C4 LLDPE, and the fact that the combined entity's market shares in butene-1 are small, preventing it from benefiting from higher prices that might result from a theoretical customer foreclosure strategy.[367]

The Commission's assessment

(362) Given SABIC's negligible market shares in the upstream market for butene-1, and consequently the combined entity's inability to foreclose access to butene-1 post-Transaction, input foreclosure will not be assessed further in the present Decision.

(363) Regarding potential customer foreclosure risks, the results of the Commission's market investigation indicated that the combined entity is unlikely to be able to successfully engage in any customer foreclosure strategy in relation to butene-1 rivals (upstream) through its downstream position in C4 LLDPE.

365 The Parties not being active on this market in the EEA, Table 19 only reflects the Parties' market shares at worldwide level.

366 As mentioned in paragraph (359) above, none of the Parties is active in the supply of butene-1 in the EEA.

367 Form CO, paragraphs 1977-1981.

(364) First, as regards ability, the market investigation confirmed that SABIC is a large supplier of C4 LLDPE in the EEA.[368] However, data submitted by the Notifying Party indicates that the combined entity will be a small purchaser of butene-1.[369] In addition, the majority of respondents did not expect the Transaction to have a significant impact on the upstream market for LAOs, including in the market for butene-1, and, in particular, all LAO manufacturers that expressed a view considered that the Transaction would have no significant impact on their business.[370] In light of the above, it is unlikely that the combined entity would have the ability to foreclose butene-1 suppliers (upstream) by attempting a customer foreclosure strategy.

(365) Second, as regards incentive, the market investigation has broadly confirmed that the Notifying Party's market share estimates are reliable and, in particular, that SABIC is only a minor supplier of LAOs, at both worldwide and EEA level, and irrespective of the precise market definition considered (while Saudi Aramco does not manufacture LAOs).[371] This would tend to support the view that even if such a customer foreclosure was possible, and was efficiently implemented so that it successfully managed to bring up the prices for butene-1 or LAOs in the EEA or worldwide, the Parties' very modest market share in this market would severely limit the benefits that the combined entity would reap from such a strategy.

(366) Third, even if the combined entity completely ceases to purchase butene-1 from upstream rivals post-Transaction, such a strategy is unlikely to have an adverse impact in the downstream market for C4 LLDPE in the EEA. As explained above, the combined entity is a small purchaser of butene-1. Consequently, an insufficient fraction of butene-1 output (upstream) would be affected by the revenue decreases resulting from the fact that the combined entity would, post-Transaction, completely cease to purchase ethylene from upstream rivals. Moreover, even if the impact were concentrated on one upstream supplier who faces a costs increase as a result, the market investigation confirmed that there will remain a number of strong suppliers of LAOs to constrain the combined entity post-Transaction and customers have confirmed that customers multi-source and have switched customer in the last three years.[372] Therefore, it is unlikely that a customer foreclosure attempt would have an impact upstream, but even if it did, downstream customers would have an effective and timely counter-strategy to any foreclosure attempt.

(367) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the vertical link between butene-1 (upstream) with C4 LLDPE (downstream), regardless of whether the market is considered EEA-wide or worldwide.

368 Responses to question 11, 12, 13 of *Q5 - Questionnaire to competitors and customers of Polyethylene*.

369 Form CO, Annex D.

370 Responses to questions 18 and 19 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

371 Responses to questions 11 and 12 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

372 Responses to questions 10, 11, 13, 15 and 17 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

7.5. Ethylene (upstream) with ethylene propylene terpolymer rubber (EPDM) (downstream); propylene (upstream) with EPDM (downstream); and hexene-1 (upstream) with EPDM (downstream)

(368) In this Section, the Commission analyses the vertical effects arising from the Transaction because of the vertically affected market in the supply of EP(D)M (where both Parties are active), which is vertically linked with the supply of two products (upstream to EP(D)M): ethylene (where both Saudi Aramco and SABIC are active), propylene (where both Saudi Aramco and SABIC are active), and hexane-1 (where SABIC is active).

7.5.1. Market definitions

4. 7.5.1.1. Ethylene

(369) As explained above in paragraphs (329) onwards the exact product and geographic market definitions for ethylene can be left open as no competitive concerns arise under any product or geographic market definition.

7.5.1.2.Propylene

(370) Propylene is the second simplest member of the olefins family after ethylene. It is a non-toxic, non-corrosive and colourless gas of a highly flammable nature. It is produced via a steam cracking process from a variety of feedstock, including from naphtha and from liquefied petrol gas. As a building block compound, its main use is to be processed into polypropylene resins, which accounts for more than half of the global propylene consumption. Other uses of propylene include the production of propylene oxide, acrylic acid, or butanol, among others.

7.5.1.2.1. Product market definition

The Commission's precedents

(371) In past decisions, the Commission has considered propylene as a separate relevant product market,[373] or left the precise product market definition open.[374]

The Notifying Party's view

(372) The Notifying Party does not disagree with the Commission's precedents, but submits that the precise product market definition can be left open as the Transaction would not significantly impede effective competition irrespective of the precise product market definition.[375]

The Commission's assessment

(373) The market investigation has largely confirmed the Commission's precedents that view propylene as a separate relevant product market. Market respondents generally agreed that propylene is not substitutable with any other products.[376] However,

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[373] See case COMP/M.2345 - *Deutsche BP/Erdölchemie*, decision of 26.04.2001.

[374] See Case COMP/M.7162 - *Ineos/SSG Solvents Business*, decision of 5.05.2014.

[375] Form CO, paragraphs 354-355.

[376] Responses to question 3 of *Q14 - Questionnaire to competitors and customers of Propylene*.

respondents drew a distinction between three grades: polymer grade (purity of ~99.5%), chemical grade (purity of ~90-95%) and industrial or refinery grade (lower purity, ~60%). Respondents strongly indicated that the market is weighted towards the highest two grades, as refinery grade propylene is usually consumed captively, rather than being traded widely and can only be used after upgrading it to chemical or polymer grade. [377] As one supplier explained *"polymer grade is the product universally traded (...) the other grades are normally consumed captively (...) where they are traded, they are traded in much smaller volumes and their price is a percentage of the polymer grade contract price"*.[378] Moreover, suppliers indicated that there is high supply-side substitutability, as all different production processes are capable of producing propylene with different purities.[379]

(374) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for propylene can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition.

7.5.1.2.2. Geographic market definition

The Commission's precedents

(375) In past decisions, the Commission has considered that the relevant geographic market for propylene is at least Western European and possibly EEA-wide,[380] or left the precise geographic market definition open.[381]

The Notifying Party's view

(376) The Notifying Party does not disagree with the Commission's precedents, but submits that the precise market definition can be left open as the Transaction would not significantly impede effective competition irrespective of the precise geographic market definition.[382]

The Commission's assessment

(377) The market investigation suggested that the market for propylene is global,[383] as there are steady flows of propylene between regions and the supply, demand and pricing conditions are influenced by global trends.[384] This appears to be particularly true for the EEA, where feedstock price differences with other regions make imports

377 Responses to question 4 of *Q14 - Questionnaire to competitors and customers of Propylene*.

378 Supplier's response to question 4 of *Q14 - Questionnaire to competitors and customers of Propylene*.

379 Supplier's response to question 4 of *Q14 - Questionnaire to competitors and customers of Propylene*.

380 See, e.g., case COMP/M.5424 - *Dow/Rohm and Haas*, decision of 8.01.2009.

381 See case COMP/M.7162 - *Ineos/SSG Solvents Business*, decision of 5.05.2014.

382 Form CO, paragraphs 356-360.

383 The market investigation strongly indicated that a market limited to Western Europe would not be appropriate for propylene for the purposes of the present Decision, so it is not considered further in this Decision.

384 Responses to question 5 of *Q14 - Questionnaire to competitors and customers of Propylene*.

attractive.[385] Moreover, the majority of customers considered that supplier's plants outside the EEA could credibly supply customers inside the EEA.[386]

(378) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for propylene can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA or worldwide).

7.5.1.3.Hexene-1 (C6)

(379) Hexene-1 is a type of Linear Alpha Olefin ("LAO"), which are classified by the length of the hydrocarbon chain, varying from four carbons (butene-1) to more than thirty (expressed as C30+). LAOs have a wide range of applications. Hexene-1 (C6) is primarily used as a co-monomer in the production of some differentiated types of polyethylene and EP(D)M.

7.5.1.3.1. Product market definition

The Commission's precedents

(380) In past decisions, the Commission found that LAOs constitute a separate market, and left open the question as to whether LAOs should be further sub-segmented.[387] In particular, the Commission has not assessed whether hexene-1 forms a separate relevant product market.

The Notifying Party's view

(381) The Notifying Party does not disagree with the Commission's precedents.[388]

The Commission's assessment

(382) The market investigation indicated that, for the production of polyethylene, hexene-1 can partially be substituted by other LAOs such as butene-1 and octene-1, but not for the synthesis of other chemicals, where it delivers specific properties to the final product.[389] In addition, most respondents indicated that no further segmentation of hexene-1 is required.[390]

(383) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the product market definition for hexene-1 can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible product market definition (i.e. as an overall LAO market or a narrower market for hexene-1).

385 Responses to question 8 of *Q14 - Questionnaire to competitors and customers of Propylene*.

386 Responses to question 7 of *Q14 - Questionnaire to competitors and customers of Propylene*.

387 See case COMP/M.1293 - *BP/Amoco*, decision of 11 December 1998 and case COMP/M.2299 - *BP Chemicals/Solvay/HDPE JV*, decision of 29.11.2001.

388 Form CO, paragraph 1419.

389 Responses to question 3 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

390 Responses to question 4 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

7.5.1.3.2. Geographic market definition

The Commission's precedents

(384) The Commission has not previously considered the geographic scope of a plausible market for hexene-1. It has, however, considered that the geographic market for all LAOs (including hexene-1) would be global or at least EEA-wide.[391]

The Notifying Party's view

(385) The Notifying Party submits that the geographic market for the production and sale of all LAOs is global or at least EEA-wide in scope, as there are no trade barriers globally and especially in the EEA.[392]

The Commission's assessment

(386) The Commission's market investigation confirmed that all LAOs, including hexene-1, are globally traded with ease and with no major barriers impeding it.[393] Suppliers indicated that they would be able to easily supply customers within the EEA from plants outside it, and customers confirmed that plants outside the EEA can credibly sell hexene-1 to customers in the EEA.[394]

(387) In any event, the Commission considers that, for the purposes of the present Decision, the exact scope of the geographic market definition for hexene-1 can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, under any plausible geographic market definition (i.e. EEA-wide or worldwide).

7.5.1.4.Ethylene propylene terpolymer rubber (EPDM)

(388) As explained above in paragraphs (92) onwards, ethylene propylene terpolymer rubber ("EPDM") is a synthetic rubber obtained by polymerisation of ethylene and propylene in the presence of a diene component. The ethylene-propylene elastomer family also comprises another type of rubber, which is ethylene propylene co-polymer ("EPM"). For the purposes of the present Decision, EPDM and EPM will be referred to jointly as "EP(D)M". As explained above in paragraphs (95) onwards, the exact product and geographic market definitions for EP(D)M can be left open as no competitive concerns arise under any product or geographic market definition.

7.5.2. Competitive assessment

5. 7.5.2.1. Ethylene (upstream) with EP(D)M (downstream)

(389) The Transaction gives rise to a vertically affected link concerning the supply of ethylene (upstream) and the supply of EP(D)M (downstream). Upstream, both Parties produce and sell ethylene worldwide and in the EEA. Downstream, both Parties also produce and sell EP(D)M worldwide and in the EEA.

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391 See case COMP/M.1293 - *BP/Amoco*, decision of 11.12.1998 and case COMP/M.2299 - *BP Chemicals/Solvay/HDPE JV*, decision of 29.11.2001.

392 Form CO, paragraphs 1420-1421.

393 Responses to questions 5 and 8 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

394 Responses to questions 6 and 7 of *Q15 - Questionnaire to competitors and customers of Hexene-1*.

(390) According to the Notifying Party's estimates, this link is vertically affected due to the Parties' combined market shares, downstream, in the supply of EP(D)M in the EEA in 2017 and 2016. The combined shares accounted for [30-40]% in 2017 (Saudi Aramco: [30-40]%; SABIC: [0-5]%;) and [30-40]% in 2016 (Saudi Aramco: [30-40]%; SABIC: [0-5]%). The EP(D)M market is not vertically affected if defined as worldwide in scope, or when looking at 2018 data.

(391) The Notifying Party's estimates for the Parties' and their largest competitors' market shares in the supply of ethylene (upstream) and EP(D)M (downstream) in the EEA are shown in *Table 6* and *Table 18* above.

The Notifying Party's view

(392) The Notifying Party submits that the combined entity would lack the ability or incentive to engage in a customer foreclosure strategy.[395] This is due to the Parties' relatively low market shares in EP(D)M, the existence of a sufficient customer base for ethylene and competition in the upstream market for ethylene, and the fact that EP(D)M producers represent a small customer base compared to other downstream purchasers of ethylene (as only 10% of EEA demand for ethylene comes from the EP(D)M industry).

The Commission's assessment

(393) The relationship between ethylene and EP(D)M would not represent an affected market on the basis of the most recently available market shares (i.e. 2018 figures). However, the Commission has assessed this link on a conservative basis.

(394) Given the Parties' negligible market shares in the upstream market for ethylene, and consequently the combined entity's inability to foreclose access to ethylene post-Transaction, input foreclosure will not be assessed in the present Decision.

(395) Regarding potential customer foreclosure risks, the results of the Commission's market investigation indicated that the combined entity is unlikely to be able to successfully engage in any customer foreclosure strategy in relation to ethylene rivals through its downstream position in EP(D)M in the EEA.

(396) Firstly, as regards ability to foreclose access to EP(D)M customers from ethylene rivals, the Parties have a modest position in the downstream market for EP(D)M based on the most recent market data (2018). Participants to the market investigation generally confirmed that the Parties' market share estimates are largely accurate.[396] In a market with a post-merger HHI below 2 000, and possessing small-to-moderate market shares ([10-20]% (worldwide) and [20-30]% (EEA)), the Notifying Party is unlikely to have the ability to foreclose suppliers of a significant downstream customer base.[397] As outlined in paragraph (355) above, the combined entity will be a small purchaser of ethylene and many other customers are available, and so is unlikely to have the ability to foreclose upstream suppliers.

395 Form CO, paragraphs 1505-1512.

396 Responses to questions 11, 12 and 13 of *Q4 - Questionnaire to competitors and customers of Ethylene propylene terpolymer rubber (EP(D)M)*.

397 *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings* (2008/C/ 265/07), paragraph 25.

(397) Secondly, as regards incentive, with a combined market share of [0-5]% worldwide and [10-20]% in the EEA in the merchant market for ethylene, the Notifying Party would not have a significant presence in the upstream market and so its benefits from a foreclosure strategy would likely be limited.

(398) Thirdly, such a strategy is unlikely to have an adverse impact in the downstream market for EP(D)M in the EEA or worldwide. As outlined in paragraph (357) above, there are a number of strong suppliers of ethylene in the EEA, customers multi-source and can switch easily. This lack of impact was confirmed during the market investigation, where respondents confirmed that they do not expect the Transaction to have any negative impact on prices, quality, choice on innovation for the market for EP(D)M (or indeed ethylene) in the EEA or worldwide and no material concerns were raised regarding either product.[398]

(399) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, for the purposes of this Decision the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the vertical link between ethylene (upstream) with EP(D)M (downstream), regardless of whether the market is considered to be EEA-wide or worldwide.

6. 7.5.2.2. Propylene (upstream) with EP(D)M (downstream)

(400) Both Parties produce propylene (upstream) and sell it worldwide and in the EEA as well as producing EP(D)M (downstream) and selling it worldwide and in the EEA. This link is vertically affected in the EEA due to the Parties' combined market shares in EP(D)M in the EEA in 2017 (Saudi Aramco: [30-40]%; SABIC: [0-5]%; combined: [30-40]%) and for 2016 (Saudi Aramco: [30-40]%; SABIC: [0-5]%; combined: [30-40]%). The Parties' market shares in EP(D)M for 2018 can be seen in *Table 6* above.

[398] Responses to questions 19 and 20 of Q4 – *Questionnaire to competitors and customers of Ethylene propylene terpolymer rubber (EP(D)M)* and responses to question 19 and 20 of *Q13 - Questionnaire to competitors and customers of Ethylene*.

(401) The Notifying Party's estimates of the Parties' and their largest competitors' market shares for propylene worldwide and in the EEA are shown Table 20 below.

Table 20: Market share estimates for propylene (upstream) worldwide and in the EEA, 2018 (by volume)

Worldwide			**EEA-wide**		
Supplier	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**
Saudi Aramco	*[…]*	*[0-5]%*	*Saudi Aramco*	*[…]*	*[0-5]%*
SABIC	*[…]*	*[0-5]%*	*SABIC*	*[…]*	*[5-10]%*
Combined	**[…]**	**[0-5]%**	**Combined**	**[…]**	**[5-10]%**
Enterprise	[…]	[5-10]%	ENI	[…]	[10-20]%
Royal Dutch Shell	[…]	[5-10]%	BP	[…]	[10-20]%
JXTG Nippon Oil & Energy	[…]	[0-5]%	DowDuPont	[…]	[5-10]%
Phillips 66	[…]	[0-5]%	Royal Dutch Shell	[…]	[5-10]%
CPC-Taiwan	[…]	[0-5]%	Total	[…]	[5-10]%
TAKREER	[…]	[0-5]%	ExxonMobil	[…]	[0-5]%
Valero	[…]	[0-5]%	Rosneft	[…]	[0-5]%
BP	[…]	[0-5]%	OMV	[…]	[0-5]%
Others	[…]	[60-70]%	Others	[…]	[20-30]%
Total Market	*[…]*	*100%*	*Total Market*	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(402) The Notifying Party submits that the combined entity would lack the ability or incentive to engage in a customer foreclosure strategy.[399] This is due to the Parties' limited presence in the downstream market for EP(D)M, the fact that most EP(D)M producers are vertically integrated or rely on alternative production methods, and the fact that the EP(D)M industry only drives a very small amount of the propylene demand (only 2% of the overall demand for propylene).

The Commission's assessment

(403) The relationship between propylene and EP(D)M would not represent an affected market on the basis of the most recently available market shares (i.e. 2018 figures). However, the Commission has assessed this link on a conservative basis.

(404) Given the Parties' negligible market shares in the upstream market for propylene, and consequently the combined entity's inability to foreclose access to propylene post-Transaction, input foreclosure will not be assessed further in the present Decision.

(405) Regarding potential customer foreclosure risks, the results of the Commission's market investigation indicated that the combined entity is unlikely to be able to successfully engage in any customer foreclosure strategy in relation to propylene rivals through its downstream position in EP(D)M.

(406) Firstly, as regards ability to foreclose access to EP(D)M customers from propylene rivals, the Parties have a modest position in the downstream market for EP(D)M based on the most recent market data (2018). Participants to the market investigation

399 Form CO, paragraphs 1655-1661.

generally confirmed that the Parties' shares are largely accurate.[400] In a market with a post-merger HHI below 2 000, and possessing small-to-moderate market shares ([10-20]% (worldwide) and [20-30]% (EEA)), the Notifying Party is unlikely to have the ability to foreclose suppliers of a significant downstream customer base.[401] As only a small percentage (less than 2%) of all propylene production is used as an input for EP(D)M, the combined entity will be a small purchaser of propylene, and so is unlikely to have the ability to foreclose upstream suppliers.[402]

(407) Secondly, as regards incentive, with a combined market share of [0-5]% worldwide and [5-10]% in the EEA in the merchant market for propylene, the Notifying Party would not have a significant presence in the upstream market, and so its benefits from a foreclosure strategy would likely be limited.

(408) Thirdly, such a strategy is unlikely to have an adverse impact in the downstream market for EP(D)M in the EEA or worldwide. This was confirmed during the market investigation, where all competitors in the market for propylene expressed that they expect to continue having access to a sufficient pool of customers post-Transaction, and most respondents expressed that they do not expect the Transaction have any negative impact on prices, quality, choice or innovation in the market for EP(D)M (or propylene) in the EEA or worldwide.[403]

(409) In light of the above, taking account of the results of the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the vertical link between propylene (upstream) with EP(D)M (downstream), regardless of whether the market is considered EEA-wide or worldwide.

7.5.2.3. Hexene-1 (upstream) with EP(D)M (downstream)

(410) SABIC produces hexene-1 (upstream) and sells it worldwide and in the EEA. Both Parties produce EP(D)M (downstream) and sell it worldwide and in the EEA. This link is vertically affected in the EEA due to the Parties' combined market shares in EP(D)M in the EEA in 2017 (Saudi Aramco: [30-40]%; SABIC: [0-5]%; combined: [30-40]%) and for 2016 (Saudi Aramco: [30-40]%; SABIC: [0-5]%; combined: [30-40]%). The Parties' market shares in EP(D)M for 2018 can be seen in *Table 6* above.

400 Responses to questions 11, 12 and 13 of Q4 - *Questionnaire to competitors and customers of Ethylene propylene terpolymer rubber (EP(D)M)*.

401 *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings* (2008/C/ 265/07), paragraph 25.

402 Form CO, paragraph 1660.

403 Responses to questions 17 and 18 of Q14 - *Questionnaire to competitors and customers of Propylene*; responses to question 20 of *Q4 – Questionnaire to competitors and customers of Ethylene propylene terpolymer rubber (EP(D)M)*.

(411) The Notifying Party's estimates of the Parties' market shares for hexene-1 worldwide and in the EEA are shown Table 21 below.

Table 21: Market share estimates for hexene-1 (upstream) worldwide and in the EEA, 2018 (by volume)

Worldwide			**EEA-wide**		
Supplier	**Volume (kt)**	**Share**	**Supplier**	**Volume (kt)**	**Share**
Saudi Aramco	-	-	*Saudi Aramco*	-	-
SABIC	*[…]*	*[0-5]%*	*SABIC*	*[…]*	*[5-10]%*
Combined	**[…]**	**[0-5]%**	**Combined**	**[…]**	**[5-10]%**
Others	[…]	[90-100]%	Others	[…]	[90-100]%
Total Market	*[…]*	*100%*	*Total Market*	*[…]*	*100%*

Source: Notifying Party's estimates (based on the Parties' sales and IHS Markit data)

The Notifying Party's view

(412) The Notifying Party submits that the combined entity would lack the ability or incentive to engage in a customer foreclosure strategy.[404] This is due to the fact that only a small amount of hexene-1 is purchased for the production of EP(D)M (the majority of hexene-1 is used for the production of LLDPE and HDPE), and the fact that the combined entity's market shares in EP(D)M and hexene-1 are small, preventing it from benefiting from higher prices that might result from a theoretical customer foreclosure strategy.

The Commission's assessment

(413) Given that the relationship between hexene-1 and EP(D)M would not represent an affected market on the basis of the most recently available market shares (i.e. 2018 figures), the Commission has looked at this link only on a conservative basis. Given SABIC's negligible market shares in the upstream market for hexene-1, and consequently the combined entity's inability to foreclose access to hexene-1, input foreclosure will not be assessed further in the present Decision.

(414) Regarding potential customer foreclosure risks, the results of the Commission's market investigation indicated that the combined entity is unlikely to be able to successfully engage in any customer foreclosure strategy in relation to hexene-1 rivals through its downstream position in EP(D)M in the EEA.

(415) Firstly, as regards ability to foreclose access to EP(D)M customers from propylene rivals, the Parties have a modest position in the downstream market for EP(D)M based on the most recent market data (2018). Participants to the market investigation generally confirmed that the Parties' shares are largely accurate.[405] In a market with a post-merger HHI below 2 000, and possessing small-to-moderate market shares ([10-20]% (worldwide) and [20-30]% (EEA)), the Notifying Party is unlikely to have the ability to foreclose suppliers of a significant downstream customer base.[406] As only a small percentage only a small amount of all hexene-1 production is used

404 Form CO, paragraphs 2043-2049.

405 Responses to questions 11, 12 and 13 of Q4 - *Questionnaire to competitors and customers of Ethylene propylene terpolymer rubber (EP(D)M)*.

406 *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings* (2008/C/ 265/07), paragraph 25.

as an input for EP(D)M (the majority being used for polyethylene (37%), oxo alcohols (16%), and oil field chemicals (7%)), the combined entity will be a small purchaser of hexene-1, and so is unlikely to have the ability to foreclose upstream suppliers.[407]

(416) Secondly, with a combined market share of [0-5]% worldwide and [5-10]% in the EEA in the merchant market for hexene-1, the Notifying Party would not have a significant presence in the upstream market, and so its benefits from a foreclosure strategy would likely be limited.

(417) Thirdly, such a strategy is unlikely to have an adverse impact in the downstream market for EP(D)M in the EEA or worldwide. Thus, the availability of a significant amount of alternative customers would void a customer foreclosure strategy of its desired effect. This was confirmed during the market investigation, where all competitors in the market for hexene-1 expressed that they expect to continue having access to a sufficient pool of customers post-Transaction, and most respondents expressed that they do not expect that the Transaction will have any negative impact on prices, quality, choice or innovation in the market for EP(D)M (or hexene-1) in the EEA or worldwide.[408]

(418) In light of the above, taking account of the results on the market investigation and of all the evidence available to it, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market in relation to the vertical link between hexene-1 (upstream) with EP(D)M (downstream), regardless of whether the market is considered EEA-wide or worldwide.

7.6. General conclusion on vertical effects

(419) In the light of the considerations in paragraphs (239) to (418) the Commission concludes that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to vertical effects.

407 Form CO, paragraph 2046.

408 Responses to question 17 and 18 of Q*15 - Questionnaire to competitors and customers of Hexene-1;* responses to question 20 of *Q4 – Questionnaire to competitors and customers of Ethylene propylene terpolymer rubber (EP(D)M)*.

8. CONCLUSION

(420) For the above reasons, the European Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the EEA Agreement. This Decision is adopted in application of Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(Signed)
Margrethe VESTAGER
Executive Vice-President