



EUROPEAN COMMISSION
DG Competition

Case M.8134 - SIEMENS / GAMESA

Only the English text is available and authentic.

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

Article 6(1)(b) NON-OPPOSITION
Date: 13/03/2017

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EUROPEAN COMMISSION

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 Where possible the information omitted has been replaced by ranges of figures or a general description.

Brussels, 13.3.2017
C(2017) 1772 final

PUBLIC VERSION

To the notifying party

**Subject: Case M.8134 – SIEMENS/ GAMESA
Commission decision pursuant to Article 6(1)(b) of Council
Regulation No 139/2004¹ and Article 57 of the Agreement on the
European Economic Area²**

Dear Sir or Madam,

- (1) On 6 February 2017, the European Commission received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation (EC) by which Siemens Aktiengesellschaft ("Siemens", Germany) acquires within the meaning of Article 3(1)(b) of the Merger Regulation sole control over Gamesa Corporación Tecnológica, S.A. ("Gamesa", Spain) by way of purchase of shares (hereafter the "Transaction"). Siemens is referred to as the "Notifying Party" and collectively with Gamesa as the "Parties".

1. THE PARTIES

- (2) **Siemens** is active in a number of industrial areas including the supply of onshore and offshore wind turbines through its Wind Power and Renewables division.
- (3) **Gamesa** is primarily active in the supply of products and advanced solutions in the renewable energy sector, particularly of onshore wind turbines. It is also active in the supply of offshore wind turbines through its subsidiary Adwen Offshore SL ("Adwen"). Adwen was a 50/50 joint venture that Gamesa and Areva entered into in 2014 to exclusively supply both parent companies' offshore

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').

turbines. Gamesa has recently acquired Areva's 50% stake in Adwen in order to complete the proposed Transaction with Siemens. Gamesa's acquisition of sole control over Adwen has been cleared in Germany by the Bundeskartellamt³ and the transaction closed in January 2017.

2. THE OPERATION

- (4) Under the terms of the Merger Agreement, Siemens will acquire sole control of Gamesa through the merging of Gamesa with the Wind Power Business of Siemens, which will then be carved out from the rest of the Siemens Group. The proposed Transaction will result in Siemens holding 59% of Gamesa's shares. As a result of the proposed Transaction Siemens will be able to implement or veto strategic business decisions of Gamesa unilaterally, for instance concerning the budget or the business plan.
- (5) The Transaction therefore consists of the acquisition of sole control of Gamesa by Siemens within the meaning of Article 3(1)(b) of the Merger Regulation.

3. EU DIMENSION

- (6) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million⁴. Each of them has an EU-wide turnover in excess of EUR 250 million, but they do not achieve more than two-thirds of their aggregate EU-wide turnover within one and the same Member State. The notified operation therefore has an EU dimension within the meaning of Article 1(2) of the Merger Regulation.

4. MARKET DEFINITION

4.1. Manufacturing and supply of wind turbines

- (7) Wind turbines can be installed onshore and offshore to convert wind energy into electricity, for domestic power supply or sale through the electrical grid.

4.1.1. Product market definition

4.1.1.1. Distinction between onshore and offshore wind turbines

The Notifying Party's view

- (8) The Notifying Party submits that the market for the supply of wind turbines could be considered as a whole, without further segmentation according to the onshore or offshore environment in which the turbines are to be used. According to the Notifying Party, the function of the wind turbine and most of the components, including tower, nacelle and blades, is the same regardless of its onshore or offshore setting. Moreover, some of the largest customers are present both onshore and offshore and most suppliers of offshore wind turbines originated in

³ Case B5-141/16 (cleared on 5 October 2016).

⁴ Turnover calculated in accordance with Article 5 of the Merger Regulation.

the supply of onshore wind turbines.⁵ Nevertheless, in view of previous Commission decision making practice,⁶ the Notifying Party has provided the relevant information broken down according to onshore and offshore supply.⁷

Commission's assessment

- (9) The Commission has analysed wind turbine markets in the past and considered a potential segmentation between onshore and offshore turbines in light of the differences in power output, installation, operation and maintenance resulting from the harsher environmental conditions and difficulties to access offshore wind farms. However, the exact market definition was left open given that the transaction under review did not raise competition concerns in any case.⁸
- (10) For the purpose of the present case the Commission considers that separate markets exist for onshore and offshore wind turbines. Although onshore and offshore wind turbines may feature components that can be the same regardless of their onshore or offshore setting, the different conditions of the offshore environment affect the regulatory framework, planning and construction of offshore projects. This in turn results in differences in design, performance and costs of the turbines to be installed. Overall, the dynamics of the offshore market are different and result in different wind turbines required. The Commission will outline in more detail below the reasons for which it considers onshore and offshore turbines constitute separate markets.

Projects are different

- (11) Overall costs of development, construction and maintenance of an offshore wind farm require high investments and carry a higher associated risk for project developers as compared to onshore projects. As a result, the Commission notes that offshore and onshore projects have significant discrepancies in terms of time of development and construction, financing of the projects, size, wind class and even certification of projects, all of which impact the cost and risk of the projects and the selection of the turbine.⁹
- (12) The cost of installation of offshore projects comprises the cost of jack/up vessels, transmission platforms and sea cabling, which are significantly more costly and complex than in the case of an onshore project.¹⁰ Therefore, it may be more economical in the onshore segment to deploy a larger number of turbines of a lower output. This configuration may also be preferred to address regulatory restrictions. In contrast, offshore turbines generally need to be significantly larger to be able to produce enough energy to offset the costs of these projects and limit the number of turbines to be installed.
- (13) In light of the high sunk costs of installation, foundations and maintenance, offshore projects tend to be large-scale projects of 300 to 1,200 MW and

⁵ Form CO, paragraph 200.

⁶ M.6222 – GE Energy/ Converteam of 22 July 2011, paragraph 78.

⁷ Form CO, paragraphs 206 *et seq.*

⁸ M.6222 – GE Energy/ Converteam, paragraph 78.

⁹ Non-confidential replies to question 4 of Questionnaire 1 – Customers.

¹⁰ Form CO, paragraph 207 and Notifying Party's reply to question 4 of RFI 21, 3 March 2017.

comprised of 50 to 175 wind turbines. By contrast, onshore projects can be very small and can consist of a single turbine.¹¹

- (14) From a timing perspective, due to complex planning and the larger scale of projects, construction of offshore wind farms typically takes approximately 5 years, which are made up of 2 years of project planning and 3 years of installation of the turbines. Onshore projects generally take approximately 2 years to cover the entire process, and the installation of the turbines can be achieved within 9 to 18 months.¹²
- (15) Certifications of onshore and offshore projects also vary in terms of costs and timing. While the cost of onshore project certification will usually be less than EUR 100,000 and take up to six months, offshore project certification may cost in excess of EUR 500,000 and typically take between 12 and 24 months, depending on the size of the project.¹³
- (16) Finally, the capital expenditure and upfront investment required in an offshore project is completely different than onshore. Offshore projects are typically highly leveraged with heavy involvement of financial investors and creditors.¹⁴ This will also determine not only the profile of offshore customers, mainly consisting of large utilities, but also the higher standards applied in selecting suppliers and turbines, thereby limiting the number of players and accessibility to the market.

Turbines are different

- (17) The conditions of offshore projects translate into different requirements for the turbines to be installed. They must be suitable for different environmental (marine vs land), technical and economic considerations. As a result, offshore turbines are not substitutable with onshore turbines.
- (18) First, the size of the turbine, and especially the diameter of the rotor, is an essential feature of the turbine. It determines the power output and overall efficiency and performance of the turbine. Due to regulatory restrictions and logistical constraints stemming from the difficulties of road transportation of turbines, onshore wind turbines have reached maximum rotor sizes of 140m, which is equivalent to a power output range between 2 and 4MW. In contrast, offshore wind turbines currently offered in the market have rotor diameters of up to 180m and a power output range between 6 to 9MW. Due to their size and installation location, offshore turbines are transported by sea, making land transport restrictions irrelevant. In short, as a customer noted, "*offshore turbines are [...] currently much bigger than the onshore ones and should be considered as a different product.*"¹⁵
- (19) Second, as a consequence of the harsher environmental conditions offshore, development of offshore wind turbines is also more complicated and costly.

¹¹ Form CO, paragraph 345.

¹² Form CO, footnote 224.

¹³ Form CO, paragraph 74 and 751.

¹⁴ Form CO, paragraph 348.

¹⁵ Non-confidential minutes of a conference call with a customer, 3 October 2016.

Offshore wind turbines are specifically designed to be resistant to environmental conditions such as salt, corrosion etc. as well as more robust, allowing for increased remote monitoring and backup systems in order to avoid maintenance or repair as much as possible, given that difficulties in accessibility result in repair or intervention being significantly more costly offshore than onshore. As stated by a customer: "[o]nshore and offshore turbines are different products. Offshore turbines have different reliability and performance requirements than onshore turbines, especially regarding design for maintenance and operations. Offshore turbines are significantly more costly than onshore turbines (>30%-50%)."¹⁶

- (20) Turbine original equipment manufacturers ("OEMs") confirmed during the market investigation the output and design differences highlighted by their customers. For example, suppliers indicated that offshore turbines must be designed with stronger foundations to withstand maritime conditions.¹⁷ One supplier summarized the differences as follows: "[d]ifferences of on- and offshore turbines regarding power output and design are mainly subject to the requirements of the environmental requirements to withstand harsh and maritime climates in strong wind conditions."¹⁸
- (21) Finally, certifications for wind turbines to be installed in offshore projects also differ from onshore. While both turbines need to obtain both a type certificate and component certificates, they follow different processes to obtain type certificates. Onshore turbines obtain a type certificate based on a generic process where the entire turbine, including tower and foundation are certified and can be installed on any onshore project based on that type certificate. Offshore turbines are typically certified on the basis of two prototypes, one located onshore and one offshore. Once they are certified on the basis of a successful prototype, the foundation and the tower also need to be certified in the context of each project where they are to be installed. The type certificate for offshore turbines is therefore awarded on a project-by-project basis according to the specific characteristics of the site the turbines need to be adapted to.¹⁹
- (22) In addition, offshore sites in the EEA, as in most of the world, are characterised by higher wind speed and thus will require turbines certified for the highest wind class, namely IEC I. Onshore turbines are generally designed for wind classes IEC II or III.²⁰ In addition, offshore turbines continue to evolve in order to take advantage of the higher winds.²¹
- (23) During the market investigation, a customer summarized the differences between onshore and offshore wind turbines as follows: "*From about 2007, onshore and offshore wind turbine technologies have been substantially different in terms of size and total power output. Offshore wind turbines are much bigger, with a total power output in the range of 5-8MW, as opposed to onshore turbines with 2-*

¹⁶ Non-confidential replies to question 4.1 of Questionnaire 1 – Customers.

¹⁷ Non-confidential replies to question 6.1 of Questionnaire 2 – Competitors.

¹⁸ Non-confidential replies to question 5.1 of Questionnaire 2 – Competitors.

¹⁹ Form CO, paragraph 736. See also Non-confidential replies to question 9.1 of Questionnaire 2 – Competitors.

²⁰ Form CO, paragraph 260. See also non-confidential minutes of a conference call with customers, 29 September 2016 and 5 October 2016.

²¹ Form CO, paragraph 207.

*3MW. As the wind speed is stronger offshore, the average power output will be higher offshore than onshore. Different certification classes lead to limited substitutability between onshore and offshore wind turbines. Most onshore turbines will not be strong enough to operate on an offshore site. The majority of onshore wind turbines are certified for lower wind classes. Even if one compares an onshore turbine of the same class there will be a massive cost disadvantage for the onshore turbine as it is not designed for an offshore purpose and therefore will not be cost competitive for an offshore project."*²²

Suppliers and customers are different

- (24) From a supply-side point of view, suppliers of offshore turbines not only need to be at the forefront of technological innovation, but are also required to have a very solid track record and healthy balance sheet to be credible. As a result, only a handful of large suppliers are able to be active offshore, while the onshore market is significantly more fragmented.
- (25) Seven key players are active in the supply of onshore wind turbines in the EEA, namely Enercon, Gamesa, GE Alstom, Nordex/ Acciona, Senvion, Siemens and Vestas. Offshore, only five of them are present: the market investigation confirmed that, when organising offshore tenders, customers invite MHI-Vestas, Siemens, Senvion, GE Alstom and Gamesa ("Adwen").²³
- (26) The importance of a solid balance sheet to compete offshore is supported by the fact that onshore players are generally active in the offshore market through joint ventures. This is the case for Vestas which, despite being one of the main players onshore, entered into a joint venture with MHI for the offshore market, as well as Gamesa, which initially entered the offshore market by acquiring a stake in Adwen thereby creating a joint venture with Areva.
- (27) Similarly, customers on the offshore market are generally either large, sophisticated utilities with extensive experience, or consortiums comprising project developers, financial investors and, often, turbine OEMs capable of providing an equity contribution. Onshore, end customers²⁴ represent a significant share of the market.²⁵ These customers have different needs for their projects and do not require the same stringent criteria as customers of offshore projects.

Conclusion on onshore versus offshore

- (28) The Commission considers that, given the different dynamics of the onshore and offshore environments that result in different requirements and features for the wind turbines, the relevant market should be segmented according to the onshore or offshore setting of wind turbines.

²² Non-confidential reply to question 4.1 of Questionnaire 1 – Customers.

²³ Non-confidential replies to question 9 of Questionnaire 1 – Customers.

²⁴ End customers: independent power producers as well as financial investors or (in the case of onshore wind turbines) communities or small landowners like farmers.

²⁵ Form CO, paragraphs 140 to 142; see also non-confidential minutes of a conference call with a competitor, 5 October 2016.

4.1.1.2. Distinction based on various power output of wind turbines

The Notifying Party's view

- (29) The Notifying Party submits that the market should not be segmented based on power (MW) output of wind turbines because customers base their choice of turbine on a combination of criteria including, but not limited to, power output.²⁶

Commission's assessment

- (30) The Commission considers for the purpose of the present case that, while the characteristics of markets for wind turbines justify segmentation between onshore and offshore, they should not be segmented further according to power output.
- (31) The Commission has in the past considered segmenting a market by power output with regard to gas turbines, although the exact market definition was ultimately left open.²⁷ This type of segmentation has not been contemplated in respect of wind turbines.
- (32) The Commission considers that the markets for wind turbines, especially offshore, are highly innovative and in constant evolution. Suppliers strive to bring to market improved platforms that will maintain the economic sustainability of the wind market.
- (33) Regarding procurement practices, customers choose turbines based on project specific criteria and will rely on the overall assessment of each supplier's offer, not only on the power output of a proposed turbine. Customers have explained that, for both onshore and offshore projects, they do not include a specific power output requirement for the turbines in their call for tenders (although a minimum output is laid out).²⁸ Instead, they indicate the total power output of the wind farm. It is then up to the suppliers to suggest in their offer the most appropriate product leading to the lowest levelised cost of energy ("LCoE")^{29,30} In that respect, a large majority of respondents to the market investigation stated it is possible to compete with higher output turbines offering a turbine of a smaller output, especially in onshore tenders.³¹
- (34) Nevertheless, while there is certain flexibility in the sense that, "*within the onshore and offshore markets, turbines with different power output (e.g. 6MW and 8MW turbines offshore) compete with each other depending on the specificities of the site such as the wind class*",³² there is a limit to the competitive constraint that lower rated turbines can exercise, especially offshore, where the market is driven towards ever-larger turbines. Most customers indicated to the

²⁶ Form CO, paragraph 12.

²⁷ M.7284 – Siemens/ John Wood Group/ Rolls-Royce (2014), paragraphs 20 to 25.

²⁸ Non-confidential minutes of a conference call with a customer, 29 September 2016.

²⁹ The levelised cost of energy is the net cost of electricity per unit over the lifetime of the generating asset.

³⁰ Non-confidential minutes of a conference call with a customer, 5 October 2016.

³¹ Non-confidential replies to question 20 of Questionnaire 1 – Customers; see also non-confidential minutes of a conference call with a customer, 29 September 2016.

³² Non-confidential minutes of a conference call with a customer, 5 October 2016.

Commission that wind turbines below 6MW are no longer competitive.³³ They further indicated that, already, *"it is difficult for 5-6MW turbines to compete against turbines of 7-8MW."*³⁴

- (35) At the time when a new platform is introduced, competition with the previous platform will take place in terms of costs and reliability.³⁵ While the new platform is more productive by virtue of its larger power output, it is also more costly and less proven, therefore previous platforms can still exert a competitive constraint on the new platform for a certain amount of time and to a certain extent. There is no disruption, but rather a progressive replacement in the sense that the old platform is not immediately and completely outdated when the new one is released, especially considering that, in view of the long time lag of project development offshore, at the time when the new platform starts to be included in bids it only exists in paper and the old platform is actually being installed. That said, the release of a new platform marks the beginning of the decline of the old one until it is no longer considered competitive.
- (36) The remaining competitive lifetime of the previous platform is determined primarily by the difference in output between the two platforms: the larger the difference in MW output, the larger the gap will be in terms of their performance. As a result, a larger difference in MW output will mean a weaker competitive constraint by the old platform and a shorter period of time before it becomes outdated.
- (37) In light of the foregoing, the Commission considers for the purposes of this case that there is meaningful competitive interplay between wind turbine products and platforms of different output levels. Accordingly, it is not appropriate in this case to further segment the offshore and onshore market segments according to the power output of turbines.

4.1.1.3. Other potential segmentations

- (38) The Commission does not consider that segmentations of the onshore and offshore wind turbine markets according to technology, namely direct drive or geared, as well as to wind speed would be justified.
- (39) Concerning technology, the market investigation revealed that customers do not generally request a specific technology in their tenders and both are considered competitive in terms of output and cost.³⁶ Moreover, suppliers often have in their portfolio turbines with different technologies.³⁷ Therefore, the Commission concludes that wind turbines should not be split into different markets according to their technology.
- (40) As regards wind speed, turbines are certified according to IEC wind classes and are generally not suitable to operate under a different wind class or would not be

³³ Non-confidential replies to question 6 of Questionnaire 1 – Customers.

³⁴ Non-confidential minutes of a conference call with a customer, 29 September 2016.

³⁵ Non-confidential replies to question 20.1 of Questionnaire 1 – Customers.

³⁶ Non-confidential minutes of conference calls with customers, 29 September 2016, 5 October 2016; see also non-confidential replies to questions 21 and 22 of Questionnaire 1 – Customers.

³⁷ Non-confidential minutes of a conference call with a competitor, 14 October 2016.

as efficient.³⁸ However, from a supply-side perspective generally most suppliers have turbines for all wind classes in their portfolio. Where they do not have them, platforms can be upgraded in order to fit other wind speeds.³⁹

- (41) In any event, in the EEA all offshore sites are high wind sites. There is therefore no possible sub-segmentation based on wind speed. Onshore, Siemens has no product for low winds, while all competitors are present in other wind speeds. As a result the exact market definition for onshore can be left open given that it will not impact the competitive assessment.

4.1.2. Geographic market definition

The Notifying Party's view

- (42) The Notifying Party considers the geographic scope of the market for the supply of onshore and offshore wind turbines to be at least EEA-wide, and potentially global in scope, although the exact definition could be left open. The Notifying Party argues that in any case all major suppliers of both onshore and offshore markets for current installation in the EEA are EEA-based.⁴⁰

Commission's assessment

- (43) In the past, the Commission considered the geographic market for supply of wind turbines to be at least EEA-wide based on the fact that customers would source turbines from all over the EEA, but left the exact definition open.⁴¹
- (44) The Commission considers for the purpose of the present case that, due to the cost and risk of transportation as well as the need for a service team to be located near the wind farms, the geographic scope of both onshore and offshore markets for wind turbines are not larger than EEA-wide.

4.1.2.1. Offshore wind turbines

- (45) From a supply-side, all worldwide suppliers of wind turbines have a base in the EEA from which they serve EEA projects, both onshore and offshore. Although they may source different components of the turbines, notably blades, towers and nacelles, from manufacturing sites located worldwide, assembly is carried out in the EEA as close as possible to the customer's site in order to avoid logistical challenges and to lower the transportation costs. A customer explained that "*[t]here is a distinction to be made between manufacturing and assembly of wind turbines. While sourcing turbines' components can be done globally, the assembly factories are not global, but at most regional*".⁴² Accordingly, both Parties serve their EEA customers from facilities located within the EEA.⁴³

³⁸ Non-confidential replies to questions 15.1 and 16.1 of Questionnaire 1 – Customers.

³⁹ Non-confidential minutes of a conference call with a competitor, 11 October 2016.

⁴⁰ Form CO, paragraphs 264.

⁴¹ M.6222 – GE/ Converteam (2011), paragraph 79.

⁴² Non-confidential minutes of a conference call with a customer, 21 October 2016.

⁴³ Form CO, paragraph 787.

- (46) All suppliers indicated during the market investigation that they are able to take part in any tender in the EEA⁴⁴ For instance, Siemens has facilities in Denmark and has delivered projects in the UK.
- (47) The bidding data also proves that all EEA suppliers effectively compete and are awarded tenders everywhere in the EEA regardless of where exactly their facilities are located.⁴⁵ All suppliers have the capabilities to deploy servicing teams close to the sites from their bases within the EEA.
- (48) Offshore turbines are assembled and shipped from the closest harbour to the wind farm. Logistics to transport the turbines and install them at sea are highly specialised and include the need for jack-up vessels that cost in the range of EUR 150,000 per day, with installation of a single turbine taking several days. The installation of a single turbine implies costs of several hundred thousand euro.⁴⁶
- (49) Consequently, transportation costs for turbine OEMs that do not have a base in the EEA translate into increased prices for EEA customers and prevent these suppliers from effectively competing with suppliers located in the EEA.⁴⁷
- (50) From a customer side, the market investigation has shown that customers also take into consideration the risk that accompanies transportation.⁴⁸ Depending on the contractual terms agreed between the turbine supplier and its customer, the ownership of the turbines will be transferred to the customer either at the site or directly at the harbour, which determines which party bears the costs of transportation as well as the associated risk.⁴⁹ As explained by a customer: "*[t]ransport is also a cost and a risk factor. Having the turbines assembled close to the project reduces such a risk. In that sense there are no differences between onshore and offshore requirements – it is clearly advantageous to produce the large components close to the site.*"⁵⁰
- (51) Furthermore, customers require suppliers to be located in the vicinity of the project for servicing purposes. First of all, the supply of wind turbines comes with a warranty period of, on average, 2 years for onshore turbines and 5 years for offshore turbines which includes "availability guarantees" by virtue of which the turbine OEM guarantees the turbine will be available for production for approximately 95 to 97% of the time.⁵¹ Therefore, closeness to the site is essential. It was confirmed during the market investigation that "*[i]t is very important to have an operation base close to the site in order to maximize the availability of the WTGs and therefore the profitability of the projects (both for offshore and onshore).*"⁵²

44 Non-confidential replies to question 24 of Questionnaire 2 – Competitors.

45 Form CO, annex 26.

46 Form CO, paragraph 786.

47 Non-confidential minutes of a conference call with a competitor, 23 November 2016.

48 Non-confidential replies to question 23.1 of Questionnaire 1 – Customers.

49 Form CO, paragraph 786.

50 Non-confidential minutes of a conference call with a customer, 21 October 2016.

51 Onshore: [...]; Offshore: [...]. Notifying Party's reply to question 1 of RFI 21, 3 March 2017.

52 Non-confidential reply to question 27.1 of Questionnaire 1 – Customers.

- (52) As a result, an overwhelming majority of offshore customers that replied to the market investigation stated that a service team needs to be located in the close vicinity to the wind farm.⁵³ Although a base could theoretically be set up after the award of a project, the additional costs involved will put the supplier at a disadvantage as compared with suppliers that do not need to incur such cost.⁵⁴
- (53) In light of the above, the Commission considers that the geographic scope for the offshore market for wind turbines cannot be considered wider than the EEA.

4.1.2.2. Onshore wind turbines

- (54) Transportation costs are all the more crucial for onshore turbines given the complexities of transporting large turbines by road and the higher proportion these costs represent.
- (55) As in the case of the offshore market, servicing is also expected from the supplier to take place within a short timeframe that requires suppliers to have a base or a service team in the vicinity of the wind farm.⁵⁵
- (56) The results of the market investigation are homogenous for the onshore and the offshore turbines, therefore the arguments made above with respect to the geographic scope of offshore wind turbines apply *mutatis mutandis* to the onshore market.
- (57) By way of summary, a competitor explained during the market investigation: *"Onshore: Having a service team in the vicinity of a wind park is an important means for the service provider to allow for short response times in case of downtimes. Thereby it reduces the service provider's risk exposure in terms of compensation of revenue losses suffered by the operator of the project, which the service provider is (usually) liable to compensate in accordance with the service provider's availability warranty for the WTG. In addition to this, having a service team in the vicinity of a wind park allows to reduce travel cost of service teams for onsite interventions."*⁵⁶
- (58) In view of the above, the Commission considers that the geographic scope for the onshore market for wind turbines cannot be considered wider than the EEA.

4.2. Wind turbines' input products

- (59) The Parties have activities in relation to the supply to third party turbine suppliers of certain components and products related to grid connection of wind turbines. Both Parties produce (i) gearboxes and (ii) generators for onshore and offshore wind turbines, although the vast majority of Gamesa's production is supplied internally ([...] gearboxes per year and [...] % of generators, accounting for [0-5] % of the market, supplied externally). Therefore, these would not give rise to

⁵³ Non-confidential reply to question 27 of Questionnaire 1 – Customers.

⁵⁴ Non-confidential minutes of a conference call with a customer, 21 October 2016; see also non-confidential minutes of a call with a competitor, 5 October 2016.

⁵⁵ Non-confidential replies to question 29 of Questionnaire 1 – Customers; see also non-confidential replies to questions 19, 20 of Questionnaire 2 – Competitors.

⁵⁶ Non-confidential reply to question 19.1 of Questionnaire 2 – Competitors.

horizontally affected markets but rather to potential vertical relationships between the Parties.

4.2.1. *Manufacture and supply of gearboxes*

4.2.1.1. Product market definition

- (60) Gearboxes are mounted between the low speed shaft attached to the wind turbine rotors and the generator and convert the low speed incoming rotation of the blades into high speed rotation suitable for generating electricity.
- (61) The Notifying Party submits that gearboxes are the same in onshore and offshore turbines and should not be segmented into different markets. Gearboxes are lodged inside the nacelle without contact with the environment and thus there is no specific requirement in that respect. Moreover, gearboxes are compatible with most turbine variations and can be accommodated accordingly.⁵⁷
- (62) In the past, the Commission has investigated a potential segmentation in gearboxes according to the setting of the wind turbines and come to the conclusion that such segmentation is not necessary based on supply-side substitutability, although the exact definition was ultimately left open.⁵⁸
- (63) Throughout the investigation of the proposed Transaction, the Commission has found that, from the demand-side, customers do not consider gearboxes for onshore and offshore turbines to be substitutable,⁵⁹ but that suppliers can easily adapt gearboxes in order to fit the specific features of the wind turbine depending on where it is going to be deployed. The market investigation also revealed that Independent Service Providers ("ISPs") can and do develop alternative gearboxes that can replace OEMs' originals.⁶⁰
- (64) As a result, the Commission considers in the present case that there should be no segmentation between gearboxes for onshore or offshore turbines. This is consistent with past Commission decisions. However, the exact market definition can be left open given that the proposed Transaction does not in any case raise serious doubts as to its compatibility with the internal market.

4.2.1.2. Geographic market definition

- (65) The Notifying Party argues that the market for the supply of gearboxes should be considered as global since small adjustments are needed to manufacture gearboxes for different areas of the world and transport costs are not an obstacle.⁶¹ However, contrary to the Notifying Party's claim, the Commission found in the past that the geographic scope of the market for gearboxes was likely to be EEA-wide based on transport costs and technical specifications differing per region.⁶²

⁵⁷ Form CO, paragraph 269.

⁵⁸ M.6361 – ZF/ Hansen (2011), paragraph 11.

⁵⁹ Non-confidential reply to question 45 of Questionnaire 2 – Competitors.

⁶⁰ Non-confidential minutes of calls with an ISPs, 20 October 2016, 10 November 2016.

⁶¹ Form CO, paragraph 273.

⁶² M.6361 – ZF/ Hansen (2011), paragraphs 16-17.

- (66) Although gearboxes may need to conform to different regulations and limitations applying to the electricity grid, the market investigation has revealed that all customers of gearboxes for wind turbines regularly procure them outside the EEA.⁶³ Nevertheless, given that the proposed Transaction does not raise serious doubts as to its compatibility with the internal market, the exact definition can be left open.

4.2.2. *Manufacture and supply of generators*

4.2.2.1. Product market definition

- (67) Generators take mechanical energy from the spinning drive shaft connected to the turbine rotor and turn the mechanical energy into electrical energy. Generators are designed to fit the technology of the turbine, geared or direct drive. Geared turbines generally use induction generators whereas direct drive wind turbines use synchronous generators. The activities of the Parties would only overlap in relation to induction generators for geared turbines, given that Gamesa does not offer direct drive wind turbines or synchronous generators. Moreover, Siemens offers synchronous generators for direct drive wind turbines but does not currently sell them.⁶⁴
- (68) The Notifying Party explains that there is no difference with regard to the onshore or offshore setting of the wind turbine the generator fits in, but rather differs depending on the technology type of the turbine: geared turbines use induction generators while direct drive wind turbines use synchronous generators.⁶⁵
- (69) Regardless of the exact product market definition, for the purposes of this decision the Commission has focused its assessment on induction generators for geared turbines given Gamesa does not use or sell synchronous generators in its turbines onshore or offshore. In any case, the exact market definition can be left open given that the proposed Transaction does not raise serious doubts as to its compatibility with the internal market regardless of the exact market definition for generators..

4.2.2.2. Geographic market definition

- (70) The Notifying Party submits that the geographic scope of the market for generators is at least EEA-wide given that technology is the same worldwide and customers source them globally.⁶⁶ Respondents to the market investigation confirmed that they procure generators from beyond the EEA.⁶⁷
- (71) In any case, the exact market definition can be left open given that the proposed Transaction does not raise doubts as to its compatibility with the internal market.

⁶³ Non-confidential replies to question 41 of Questionnaire 2 – Competitors.

⁶⁴ Form Co, paragraph 181.

⁶⁵ Form CO, paragraph 275.

⁶⁶ Form CO, paragraph 279.

⁶⁷ Non-confidential replies to question 41 of Questionnaire 2 – Competitors.

5. COMPETITIVE ASSESSMENT

5.1. Horizontal overlaps

5.1.1. Manufacturing and supply of offshore wind turbines

The Notifying Party's views

- (72) The Notifying Party submits that the proposed Transaction does not raise any concerns on the offshore market for wind turbines in the EEA. First, the Notifying Party clarifies that Siemens faces strong competition on the offshore market especially from GE Alstom and MHI Vestas, which can be qualified as "Tier I" suppliers. Second, [confidential information with respect to Adwen's relatively weak past performance]. Finally, Adwen has not won any tender in the last 3 years, and most importantly during this period has not won any tender with its most recent technology, the AD8-180 turbine which has a power output of 8MW and a rotor diameter of 180m, while its former turbine AD5-135, a 5MW turbine with 135m rotor diameter, is [confidential information with respect to the track record and current competitiveness of Adwen's 5MW turbine]. The Notifying Party argues that the window of opportunity for 8MW turbines is now very short and larger turbines (10+MW) will soon start to be bid by all competitors except Adwen.⁶⁸

Commission's assessment

- (73) The Commission received a number of complaints from market participants that considered that Adwen is an important competitor on the offshore market and the proposed Transaction would reduce competition on this market.
- (74) However, the Commission has investigated the market dynamics and competitive landscape and has come to the conclusion that Adwen is not a significant competitive constraint on Siemens and thus the proposed Transaction will not raise serious doubts as to its compatibility with the internal market, for the reasons set out below.

5.1.1.1. Market shares

- (75) The Notifying Party has submitted two different data sets as regards market shares on the offshore market for wind turbines. Market shares have been presented on an installation base as well as per award year. According to the Notifying Party the market share data based on award year better reflects the competitive conditions of the offshore market. This is because offshore projects have a time lag of approximately 5 years between award and installation, therefore installed based market shares do not accurately reflect competitive conditions today, but rather 5 years ago.⁶⁹

⁶⁸ Form CO, paragraphs 341 *et seq.*

⁶⁹ Form CO, paragraph 368.

Table 1: Total EEA market shares and HHIs for offshore wind turbines by installation⁷⁰

Total EEA market shares and HHIs for offshore wind turbines by installation								
Turbine supplier	2013		2014		2015		2013-2015	
	MW	(%)	MW	(%)	MW	(%)	MW	(%)
SIEMENS	[...]	[70-80]%	[...]	[80-90]%	[...]	[50-60]%	[...]	[60-70]%
ADWEN (Gamesa)	[...]	[0-5]%	[...]	[0-5]%	[...]	[10-20]%	[...]	[10-20]%
COMBINED	[...]	[70-80]%	[...]	[80-90]%	[...]	[70-80]%	[...]	[70-80]%
MHI-VESTAS	[...]	[5-10]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%
GE/ALSTOM	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
SENVION	[...]	[5-10]%	[...]	[0-5]%	[...]	[5-10]%	[...]	[5-10]%
OTHERS	[...]	[10-20]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
TOTAL	[...]	100%	[...]	100%	[...]	100%	[...]	100%
HHI pre-merger	[...]		[...]		[...]		[...]	
HHI post-merger	[...]		[...]		[...]		[...]	
HHI delta	[...]		[...]		[...]		[...]	

Table 2: Total EEA market shares and HHIs for offshore wind turbines by award year (by capacity)⁷¹

Market shares and HHIs for EEA tenders - offshore - all turbine power outputs - by award year (by capacity)										
Turbine supplier	2013		2014		2015		2016		2013-2016	
	MW	(%)	MW	(%)	MW	(%)	MW	(%)	MW	(%)
SIEMENS	[...]	[20-30]%	[...]	[80-90]%	[...]	[30-40]%	[...]	[30-40]%	[...]	[40-50]%
ADWEN (Gamesa)	[...]	[40-50]%							[...]	[5-10]%
COMBINED	[...]	[70-80]%	[...]	[80-90]%	[...]	[30-40]%	[...]	[30-40]%	[...]	[50-60]%
MHI-VESTAS	[...]	[20-30]%	[...]	[10-20]%	[...]	[40-50]%	[...]	[50-60]%	[...]	[30-40]%
GE/ALSTOM					[...]	[5-10]%	[...]	[0-5]%	[...]	[0-5]%
SENVION					[...]	[5-10]%	[...]	[5-10]%	[...]	[0-5]%
SAMSUNG										
TOTAL	[...]	100%	[...]	100%	[...]	100%	[...]	100%	[...]	100%
HHI pre-merger	[...]		[...]		[...]		[...]		[...]	
HHI post-merger	[...]		[...]		[...]		[...]		[...]	
HHI delta	[...]		[...]		[...]		[...]		[...]	

(76) The Commission agrees with the Notifying Party in that installation based market shares provide a static snapshot of the installed projects for which competition between turbine OEMs took place in tenders awarded on average 5 years ago. Given that competition in a bidding market takes place at the level of the tender, it is not pertinent to consider data based on installation for the offshore market for wind turbines. Moreover, the offshore market has continuously evolved in the last decade in terms of product offering. Hence, the competitive conditions and

⁷⁰ Form CO, annex 14.

⁷¹ Form CO, annex 15.

suppliers' strength of 5 years ago are not representative of the actual competitive situation or of the competitive situation that would be expected absent the merger in the next 2-3 years.

- (77) Market participants have confirmed that offshore projects have long planning and installation timings that can take up to 7⁷² or even 10 years in the case of certain projects.⁷³ The Commission therefore considers market shares by award year give a more accurate picture of the current market landscape, although the assessment would remain unchanged regardless of the data set retained.
- (78) Further, the current offshore installed base amount to around 10 GW of capacity whereas between 2017 and 2020 offshore installation will increase at an annual rate of about 3 GW. This means that in the next four years offshore capacity is expected to double and to increase at similar rates also for the following years. As a result, market shares based on installation records might change significantly in the following years depending on the new order intake.
- (79) Although both data sets portray Siemens as the market leader, installation market shares reveal a large majority of already installed turbines are Siemens' fleet. The reduction in shares that appears in the data set by award year reflects better the evolution of the market.
- (80) Siemens' historically high market share is due to its first mover advantage on the offshore market, which granted it a dominant position for some years. Furthermore, award year data reflects more accurately the latest strengthening of MHI Vestas' market position due to the launch of its 8MW turbine in 2014. Indeed, its offshore order intake market share grew from a [10-20]% share in 2014 to [40-50]% in 2015 and [50-60]% in 2016. At the same time, while Adwen has a residual cumulated installation market share of [5-10]% for the period between 2013 to 2016, the increment in market shares brought by it in the last 3 years (2014, 2015, 2016) is nil, given it has not won any tenders despite having participated in a number of them (see below 5.1.1.3).
- (81) Nevertheless, as explained below, market share data cannot be taken in isolation; it needs to be assessed in light of the particular and forward-looking dynamics of competition on the offshore market for wind turbines.

5.1.1.2. Market dynamics

- (82) The market for the manufacturing and supply of offshore wind turbines is more concentrated than the onshore market. The four largest competitors account for over 90% of the EEA-wide offshore market based on bids awarded over the past five years.⁷⁴ Additionally, Siemens and MHI Vestas hold a significantly higher market share than the third and fourth competitors.⁷⁵

⁷² Non-confidential minutes of a conference call with a customer, 21 October 2016.

⁷³ See Adwen's projects of Saint Briec, Le Tréport and Noirmoutier, awarded between 2011 and 2013 and due for installation in 2021-2022.

⁷⁴ Form CO, paragraph 380.

⁷⁵ Form CO, paragraph 380.

- (83) Competitors in this market are faced with high barriers to entry. The cost of developing a new offshore turbine platform is substantial. Additionally, competitors must have a strong balance sheet in order to credibly bid for projects, which tend to be large-scale, technically complex and risky endeavours.⁷⁶ Offshore projects are riskier than onshore projects due to *inter alia* the environmental conditions; as a result, suppliers' track record and balance sheet are essential: "*Technical and financial abilities of turbine manufacturer are important, as well as both onshore and offshore track record.*"⁷⁷
- (84) Competitiveness in the offshore market is based on three fundamental aspects: technology, track record and a solid balance sheet that can make the customers comfortable the supplier will be able to deliver in a period of about five years time, which is the approximate planning and installation time of offshore projects. Suppliers that meet those criteria are defined as "bankable".
- (85) A customer explained as follows: "*Bankability is key for offshore projects which are usually project financed. The term refers to the ability of the supplier to be assessed and found credible by the financial investors. Technical and financial abilities of turbine manufacturer are important, as well as both onshore and offshore track record.*"⁷⁸
- (86) The market investigation has confirmed that suppliers are evaluated on the basis of those criteria and need to meet all three to be able to compete effectively.⁷⁹ Competitors and customers alike emphasized the need to provide efficient technology, proven track record and sound balance sheet.⁸⁰
- (87) Accordingly, the market investigation demonstrates that, while there has been recent entry into this market, the new entrants have been large, diversified industrial companies: Mitsubishi Heavy Industries formed a joint venture with the already established player Vestas, and GE entered the market through the acquisition of Alstom. Gamesa entered the market by forming the joint venture Adwen with Areva which was already present in the offshore market.
- (88) The dynamics between market participants is strongly influenced by product development cycles. The first to introduce a platform or product with a significantly higher output than what is available on the market can potentially gain a high market share. This would not preclude a competitor from taking over the position of the first mover – and the resulting market power – by in turn introducing a more cost efficient or higher output platform or product.
- (89) Indeed, the market share analysis in the previous section demonstrates that MHI Vestas effectively took over the position of market leader from Siemens with its 8MW turbine.⁸¹

⁷⁶ Form CO, paragraph 724. See also non-confidential minutes of a call with a customer, September 29, 2016, paragraphs 28 - 30.

⁷⁷ Non-confidential minutes of a conference call with a customer, 20 October 2016.

⁷⁸ Non-confidential minutes of a conference call with a customer, 20 October 2016.

⁷⁹ Non-confidential replies to question 32 of Questionnaire 1 – Customers.

⁸⁰ Non-confidential replies to question 32 of Questionnaire 1 – Customers; see also non-confidential minutes of conference calls with customers, 3 and 5 October 2016.

⁸¹ Form CO, paragraph 388.

- (90) Based on the foregoing, the offshore market appears to be a dynamic market rather than a mature, stable market. Despite barriers to entry and higher concentration levels compared with the onshore market, the offshore market has seen robust competition among the existing players marked by changes in the market leader based largely on the evolution of product life cycles.

5.1.1.3. Competitive landscape

- (91) Only five suppliers are active on this market. Siemens entered first, and the other players active in the market are MHI Vestas, GE Alstom, Senvion and Adwen.

Siemens

- (92) As mentioned above, Siemens was a first mover on the market, it has the largest installed fleet and as a consequence of its experience and established presence, it benefits from a good reputation and an extensive track record. The market investigation has confirmed that customers consider Siemens to be a credible supplier in all aspects, with a reliable experience and balance sheet.⁸² In its portfolio of currently available offshore turbines, Siemens competes with turbines ranging between 6 to 8MW. Although Siemens' 8MW turbine is still in development (the prototype has been installed but type certification is still pending)⁸³ [Confidential information on Siemens' bidding strategy for its 8 MW turbine]. The 8MW turbine which is Siemens' largest product currently marketed and has a rotor diameter of 154m.

- (93) As explained above, Siemens has nevertheless lost extensive market share (in terms of orders) especially to MHI Vestas in the recent years and will continue to face a strong constraint from it post-Transaction. The drop in Siemens' share between 2014 and 2015 is counter-balanced by the rise in MHI Vestas shares when it launched its 8MW platform, at a time when Siemens had not developed a new product and was bidding with its 6MW. A customer stated: "*The most competitive turbine today is the 8MW of MHI/Vestas. It is a significant step beyond Siemens 6-7MW turbines. Siemens is developing a 10MW to catch up with its competitors; in the meantime it has suffered a loss in competitiveness.*"⁸⁴

MHI Vestas

- (94) Vestas, despite being one of the undisputed worldwide leaders in the onshore market, had in the past tried to enter the offshore market without success and withdrew from the market in 2008. It then returned in 2012 and formed a joint venture with MHI in 2014 which provided it with a strong financial backing. The same year, MHI Vestas launched the 8MW turbine with a rotor diameter of 164m, at the time the biggest wind turbine on offer. This represented a significant leap in MHI Vestas' portfolio given it was offering a 3MW turbine with a 112m rotor diameter (while other supplier were already offering 5-6MW turbine). As a result, according to bidding data, Siemens lost to MHI Vestas [Confidential bidding

⁸² Non-confidential replies to questions 30 and 33.2 of Questionnaire 1 – Customers.

⁸³ See <http://www.offshorewind.biz/2017/01/30/siemens-installs-8mw-prototype-in-osterild/>, last visited on 3/03/2017 at 11:03.

⁸⁴ Non-confidential minutes of a conference call with a customer, 25 November 2016.

data] % of the tenders where they both bid in the period between 2014 and 2016.⁸⁵ MHI Vestas has also recently announced the commercialisation of a 9MW turbine in the EEA.⁸⁶ Overall, in the period 2013-2016 MHI Vestas won around [30-40] % of the offshore capacity tendered, just behind Siemens.

- (95) These findings are in accordance with the results of the market investigation that consistently confirm the credibility and competitive strength of MHI Vestas.⁸⁷ Similarly, the competitive pressure exerted by MHI Vestas is evidenced in Siemens' internal documents.⁸⁸ For instance, Siemens describes MHI Vestas as:

"[Confidential internal information on MHI Vestas' competitive position]"⁸⁹.

- (96) The market investigation also indicated that MHI Vestas is Siemens' closest competitor on the offshore market and will continue to exert effective competitive constraint post-Transaction.⁹⁰

GE Alstom

- (97) GE has stepped into the offshore wind turbine market recently through the acquisition of Alstom in 2015. In terms of portfolio, GE Alstom is currently offering the 6MW Haliade turbine with 150m rotor diameter. Its current market share is limited ([0-5] % on the basis of order intake in the period 2013-2016). This combined with the fact that 6MW turbines are no longer state of the art technologies might suggest GE Alstom is currently not a strong constraint on Siemens or MHI Vestas.

- (98) In 2012, GE Alstom (at the time Alstom) won three French projects with its 6MW turbine.⁹¹ The total capacity of these projects amounts to approximately 1.5GW and the installation date is expected to be around 2020. Further, the market investigation has revealed that GE Alstom is seen as a credible alternative to Siemens and MHI Vestas.⁹²

- (99) Concretely, GE Alstom benefits from the strong financial backing offered by the GE group. This significantly improves the financial standing and bankability of GE's offshore offering which is an essential attribute to win projects in the offshore market. In particular, in this market it is not infrequent for turbine OEMs to contribute equity to the projects. For instance, Siemens contributed equity to the Galloper project and supplied the turbines for that project.⁹³ Similarly, the strong balance sheet provided by GE allowed it to make an equity contribution to

⁸⁵ Form CO, paragraph 388; see also Form CO, annex 23.

⁸⁶ See <http://www.mhivestasoffshore.com/new-24-hour-record/>, last visited on 1/03/2017 at 17:23.

⁸⁷ Non-confidential minutes of conference calls with customers, 29 September 2016, 5 October 2016; see also non-confidential replies to question 31 of Questionnaire 1 – Customers.

⁸⁸ See for instance Siemens internal document *Win Loss Analysis*, December 2015, slide 4; Siemens internal document *Offshore 2020: The Booklet*, December 2014, page 48.

⁸⁹ Siemens internal document *MHI-Vestas – Competitive Intelligence*, 31 March 2016, slide 2.

⁹⁰ Non-confidential replies to questions 30, 31 of Questionnaire 1 – Customers.

⁹¹ Saint-Nazaire, Courseulles-sur-Mer and Fécamp.

⁹² Non-confidential replies to question 30 of Questionnaire 1 – Customers; see also non-confidential minutes of a conference call with a customer, 5 October 2016.

⁹³ Non-confidential minutes of a conference call with a customer, 29 November 2016.

the Merkur project in Germany where it will install its 6MW Haliade turbine.⁹⁴ Moreover, even where turbine OEMs do not contribute to the equity of the projects, customers closely value the financial strength of suppliers. Current offshore projects are multibillion euro projects in which about half of the budget is dedicated to the purchase of wind turbines. Customers aim to select suppliers that are able to cope with the investments necessary during the entire process and lifetime of an offshore project (from the start of manufacturing of the turbines some years in advance of installation to the long term operation of the wind park). In that sense, GE's solid balance sheet allow customers to consider it a bankable supplier.

- (100) In consideration of the above elements the Commission considers that GE Alstom is a credible player in the offshore market and will continue to exert effective competitive constraint post-Transaction.

Senvion

- (101) Senvion's latest turbine for offshore projects is a 6MW turbine with 152m rotor diameter. Senvion has been active on the offshore market for some years and has built a track record in this respect. Recently, it was also acquired by a private equity firm which has reinforced its balance sheet.⁹⁵ However, Siemens' internal documents reveal that it does not appear to be significantly constrained by Senvion, stating that "[confidential internal information on Senvion's competitive position]".⁹⁶ This is also a result of the fact that in the period between 2011 and 2016, Senvion has won [confidential bidding data] tenders where Siemens lost.
- (102) The market investigation yielded inconclusive results as to the competitiveness of Senvion. On the one hand, other competitors consider that Senvion, although it is an active player, is not a strong constraint. They see it as "*currently the weakest company offshore*"⁹⁷ and distant from the top suppliers. On the other hand, customers see Senvion as a credible supplier.⁹⁸

Adwen

- (103) Adwen has in its portfolio two turbines for offshore installation in the EEA, these are a 5MW turbine with 135m rotor diameter and its 8MW turbine with 180m rotor diameter (AD8-180).⁹⁹ With the offshore market evolving in the direction of bigger turbines allowing for improved energy production, turbines with output under 6MW are in the process of been progressively phased out. As explained above in section 4.1.1.2, customers generally expect to receive offers and install turbines of a higher power output, rather in the range of 6-9MW. Adwen's

⁹⁴ Form CO, paragraph 399; see also http://geenergyfinancialservices.com/press_releases/view/422, last visited on 3/03/2017 at 11:03.

⁹⁵ See press release at <https://www.senvion.com/senvion-australia/en/press-releases/detail/centerbridge-completes-acquisition-of-wind-turbine-manufacturer-senvion-1/>, (last visited on 01/03/2017).

⁹⁶ Siemens' internal document, *Senvion – Competitive intelligence*, 31 March 2016, slide 2.

⁹⁷ Non-confidential minutes of a conference call with a competitor, 7 October 2016.

⁹⁸ Non-confidential minutes of conference calls with customers, 20 October 2016, 25 and 29 November 2016.

⁹⁹ Adwen also offers a 5MW turbine with a 132m rotor diameter outside of the EEA. (Source: Form CO, paragraph 599).

competitiveness therefore relies on the 8MW turbine [confidential information on Adwen's stage of the project].

- (104) In terms of pipeline projects, Adwen has three projects to be installed as of 2021 in France. [confidential information on terms of the projects]. Before the creation of the joint venture with Gamesa, Areva bid and won Iberdrola's project Saint Briec in 2011 with at the time the AD5-135 turbine. The project was subsequently modified so as to replace the 5MW with AD8-180.¹⁰⁰ It was also in 2013 awarded the projects of Le Tréport and Noirmoutier in 2013 with AD8-180, both owned by a consortium formed by Engie, EDPR and Neoen Marine.
- (105) These projects presented particularities that are not generally reflected in offshore tenders in the EEA. [Confidential information on terms of the projects].¹⁰¹
- (106) According to the market investigation, from a technological viewpoint AD8-180 is at the forefront of innovation. With what is nowadays the biggest rotor on the market, the AD8-180 is seen as a credible product to compete with MHI Vestas and Siemens' 8MW turbines. Despite having a leading technology, AD8-180 has not been awarded any tenders in the last 3 years, which indicates that Adwen is not seen as a supplier on equal footing with its competitors. In fact documents retrieved from Siemens' due diligence on Adwen reflect [confidential information about Adwen's 8MW turbine development timeline]:

*"[Confidential internal information on Adwen 8 MW turbine]."*¹⁰²

- (107) Looking strictly at the number of past installations, Adwen appears as a relatively important player. For instance in 2015 Adwen's share of new installation amounted to [10-20]% and was only second to Siemens. However, Adwen's installed base is related to legacy projects won with its 5MW turbine that is now obsolete and not being bid for further projects. Moreover, [confidential information regarding Adwen's existing projects and the negative implications for Adwen's track record].¹⁰³ Therefore, Adwen's installed base reflects a flawed track record [confidential information regarding Adwen's financial situation].
- (108) The Commission therefore considers that this installed base would not provide any material advantage to Adwen to win future tenders: For example, [confidential information regarding Adwen's past awards]. Moreover, [confidential information regarding Adwen bidding].
- (109) Adwen has [confidential information regarding Adwen bidding]. Meanwhile, Adwen has not won a single tender since 2013 and currently has three projects in the pipeline [confidential information regarding Adwen pipeline projects].
- (110) Also, Adwen, which was only fully acquired by Gamesa in January 2017, is only present in offshore wind turbines market. Unlike the other players, such as GE Alstom, Senvion or Siemens, it did not have any onshore business to be related to

¹⁰⁰ Form CO, footnote 154.

¹⁰¹ Form CO, paragraph 464 *et seq.*

¹⁰² Siemens internal document, Stiesdal report, *Project Pioneer Blowfish Due Diligence*, 11 April 2016, page 6.

¹⁰³ Gamesa internal document *Proyecto Pioneer Presentación Consejo de Administración – Solicitud Aprobación Transacción*, Junio 2016, slide 81.

from which it would benefit in terms of potential track record to leverage its competitive position in the offshore sector.

- (111) Customers' perception that results from the market investigation is that "*Gamesa and Adwen have not played a major role in the offshore market as their past platforms were not state of the art / technologically developed.*"¹⁰⁴ In the same line, in the context of a tender a customer explained that "*Adwen was dismissed because the technology was not proven.*"¹⁰⁵
- (112) Aside from the technological aspect, Adwen does also not appear to fulfil the additional important requirements of successful track record and [confidential information about Adwen's financial statements] to be a reliable and bankable supplier in the current offshore market.
- (113) In terms of balance sheet, Areva's financial difficulties, publicly known on the market, damaged further the reliability of Adwen as a potential supplier. Areva's downgraded rating by Standard & Poors¹⁰⁶ together with its declared intention to refocus on nuclear energy¹⁰⁷ caused the investments that would have been necessary for Adwen to drag on and jeopardize the competitiveness of the JV and its product development. At the same time, Gamesa, despite being an important player in the onshore market, has a limited market capitalization and balance sheet to credibly support Adwen and make up for Areva's financial difficulties. Not only customers explained that Adwen's financial difficulties damaged its credibility,¹⁰⁸ but Gamesa internal documents also reflect:
- "[confidential internal information on Adwen's financial position]"¹⁰⁹
- (114) Similarly, Siemens' market intelligence indicated "*[confidential internal information on Adwen 8 MW turbine]*."¹¹⁰
- (115) This weak financial situation is also reflected in Adwen financial accounts as the [confidential information about expected financial developments] . In the next years Adwen's financial conditions are [confidential information about expected financial developments].¹¹¹ Because of the [confidential information about Adwen's financial position], [confidential internal information about Adwen's existing projects]. In terms of orders, in 2017 Adwen will finish to install its last 5MW turbines in the Wiking projects. The next foreseen installation will not be before 2021 and concerns the French pipeline projects that - although sizeable – [confidential information about future projects and implications thereof].

¹⁰⁴ Non-confidential minutes of a conference call with a customer, 10 February 2017.

¹⁰⁵ Non-confidential minutes of a conference call with a customer, 25 November 2016.

¹⁰⁶ See <http://www.aveva.com/EN/finance-1170/notations-longterm-and-shortterm.html>, last visited on 02/03/2017 at 11:00.

¹⁰⁷ See http://www.aveva.com/news/liblocal/docs/CP_groupe/2015/2015-1st-quarter-revenue.pdf, last visited on 02/03/2017 at 11:01.

¹⁰⁸ Non-confidential minutes of a conference call with a customer, 25 November 2016.

¹⁰⁹ Gamesa internal document *Propuesta de Oferta por la adquisición de ADWEN*, 1 February 2016, slide 4 [courtesy translation, original in Spanish].

¹¹⁰ Siemens internal document *Adwen – Competitive intelligence*, 31 March 2016, slide 2.

¹¹¹ This is also confirmed by Siemens due diligence report (Document 51) that in its scenario analysis concludes "[confidential internal information about Adwen's financial position]."

- (116) The financial problems of Adwen were [confidential internal information of Siemens on Adwen's financial situation]: "*[confidential internal information on Adwen's financial position]*".¹¹²
- (117) The views on the market conclude that "*Adwen does not currently offer an alternative commercial option.*"¹¹³ Forward looking, as explained below, Adwen [*confidential information regarding Adwen's foreseeable product offering*].¹¹⁴
- (118) As a result and as stated by a customer, by way of summary:: "*As a result, [confidential] is of the opinion that the transaction between Siemens and Gamesa would deliver a positive outcome, as it would strengthen Siemens as one financially strong player. [confidential] considers that there would be enough competitors left for both onshore and offshore markets.*"¹¹⁵

Conclusion

- (119) For the reasons explained above, the Commission considers that Adwen is not a significant competitive constraint on Siemens and that Siemens will face effective competition from the remaining actors on the market post-Transaction.

5.1.1.4. Future development of the market

Role of innovation in the offshore wind turbine market

- (120) Compared to the onshore, the offshore wind turbine market is more driven by innovation as the suppliers are constantly working on more powerful machines. The power rating of the generator and the rotor size are the two characteristics defining the turbine performance.
- (121) Higher nominal output can be achieved by either upgrading an existing turbine or by the development of a completely new platform. From the launch of a new product, wind turbine manufacturers are working to improve the product by running the turbine more efficiently, by upgrading components or by offering a longer blade lengths. Such gradual upgrades however are limited due to technical and economic reasons.
- (122) On the other hand, as the technology is moving forward, wind turbine manufacturers also develop new platforms, the power output of which is usually significantly higher than their former products'. The design of a new platform takes significantly more time and investment than upgrading an existing turbine.
- (123) Offshore there are fewer limits in terms of size of the turbine than onshore and customers and suppliers are aiming to produce larger volumes of electricity to recoup the high investments and risks that are embedded in an offshore project. Therefore, bigger turbines are likely to be more competitive if, for similar installation costs, they are able to produce more electricity.

¹¹² Form CO, Document 83, slide 57.

¹¹³ Non-confidential reply to question 30.1 of Questionnaire 1 – Customers.

¹¹⁴ Form CO, paragraph 500.

¹¹⁵ Non-confidential minutes of a conference call with a customer, 10 February 2017.

- (124) Furthermore, a decrease in prices is also dictated by a buyer pressure. First, the subsidy schemes of the Member States are changing, often decreasing the state aid provided for renewables, which leads to the necessity of further cost efficiency improvements.
- (125) Second, the wind parks are increasingly developed based on an auction system by which Member States award the license to wind park developers depending on their offered business plan. One of the crucial elements of these bids is the LCoE. In the the most recent years the LCoE offered by the developers decreased dramatically. As an example, in Denmark, Vattenfall won the auction for the Horns Rev 3 offshore wind park in 2015 with an LCoE of 103.1€/MWh,¹¹⁶ while in 2016 it won the Kriegers Flak project by offering an LCoE of 49.9€/MWh.¹¹⁷
- (126) The offshore wind turbine market is therefore very dynamic, characterised by fast-moving technological development and pressure from customers to develop more powerful turbines. Consequently, as set forth above (see recital 5.1.1.3) the competitive landscape cannot be solely analysed based on historical installation data, as bids won in the past do not necessarily constitute a decisive indicator of the competitive strength in such a dynamic market. In order to assess to what extent a market player is currently able to exert a competitive constraint, not only its current but also its pipeline products have to be taken into account. The strength of a wind turbine manufacturer is determined by what it is able to credibly offer in current and upcoming tenders.

Pipeline products

- (127) The Commission has investigated the current development projects of the offshore wind turbine manufacturers. The analysis focused on the expected technological "leapfrog" of a new turbine project on the one hand in order to determine whether current technology could be still competitive after the introduction of these next generation turbines. On the other hand, the Commission investigated when these turbines will appear in bids to establish the period of time open for the current technology to compete (so called "bidding window").

Siemens

- (128) Siemens is in the process of developing a direct drive 10+MW turbine. The new platform will enter the market with a power output of [confidential information regarding the size and timing of Siemens' next-generation wind turbine].¹¹⁸ The project started in [confidential information regarding the size and timing of Siemens' next-generation wind turbine]¹¹⁹. According to Siemens', [confidential information regarding the size and timing of Siemens' next-generation wind turbine]. Siemens expects to obtain the type certificate in [confidential

¹¹⁶ Source: <http://www.4coffshore.com/windfarms/horns-rev-3-winner---vattenfall-@-%800.1031-per-kwh-nid1402.html> last visited on 03.03.2017 at 12:12.

¹¹⁷ Source: <http://www.offshorewind.biz/2016/11/09/vattenfall-wins-kriegers-flak-tender-with-eur-49-9-per-mwh-bid/> last visited on 03.03.2017 at 12:12.

¹¹⁸ Form CO, annex 42; D10 Gate 1 Release – 29 September 2016; page 9.

¹¹⁹ At the end of this stage, the product is released for conditional sales. (Form CO, annex 35 – Siemens' Product development Process).

information regarding the size and timing of Siemens' next-generation wind turbine].¹²⁰

(129) [...] ¹²¹ [...] ¹²² [...] ¹²³, [confidential information regarding the bidding for Siemens' 10 MW wind turbine].¹²⁴

Adwen

(130) Adwen is currently only working on its 8MW platform and [confidential information on Adwen's product development].¹²⁵

(131) In this respect the Commission considers that Adwen, even if it were to take this decision at a later point in time, would not likely develop a 10+MW turbine as quickly and effectively as the other main players in the market.

(132) Looking at the past, Adwen's track record shows that its innovative efforts have had limited success and the latest innovation on which it is working (8MW platform) is [confidential information on the timing of Adwen's 8 MW turbine]. Moreover, the platform is [Siemens comments on Adwen's financial position]. Indeed, even if a turbine would produce more electricity because of its technological features, but at the same time it is more expensive and more costly to install, and to maintain, its LCoE would likely be higher compared to a turbine with a lower rated power that is less expensive and more reliable (lower expected maintenance cost).

(133) Indeed, Adwen's latest 8MW technology is still unproven and there is uncertainty on its effective performance and excellence. Moreover, the Adwen 8MW development was delayed by about [...]. This is a significant amount of time in a highly innovative industry where time to market is increasingly being reduced due to the pressure to reduce costs.

(134) Further looking at the past, even the Adwen's 5MW platform was not reputed to be a best in class turbine and only had a limited success in the market, with significant [confidential information related to the 5 MW turbine installed base].

(135) Also, even if Adwen has access to the 5MW installed base the Commission considers that this would not improve Adwen's ability to innovate. Given the high rate of innovation, product development in this market is in general unrelated to past installation of turbine with a lower power output. Moreover, Adwen does not enjoy any special partnership with customers that facilitate its innovative efforts.

(136) Potentially Adwen could take advantage from its 8MW pipeline to develop incremental innovation of this platform. However, at this point in time, the earliest installation date of Adwen's 8MW pipeline is foreseen for 2021. Hence, Adwen would potentially benefit from this testing only after 2021 to develop

¹²⁰ Form CO, paragraph 591.

¹²¹ Form CO, annex 38.

¹²² [Confidential information regarding the bidding for Siemens' 10 MW wind turbine].

¹²³ Section 1.1 of the MoU.

¹²⁴ Annex 26 of the Form CO – Consolidated offshore EEA bidding data for the last five years – updated on 9 February 2017.

¹²⁵ Form CO, paragraph 603.

incremental innovation for its 8MW turbine. For installation after 2021 the market would likely require 10+MW turbines (see below demand side expectations) suggesting that any such incremental innovation, even if significant and facilitated by Adwen's 8MW installed base would likely arrive too late to increase Adwen's competitive position.

- (137) Overall, the Commission considers that the above is likely to limit the competitive constraint that Adwen could exert when the market will move to the 10+MW turbine.

MHI Vestas

- (138) MHI Vestas announced in January 2017 that its upgraded 8MW platform was able to reach 9MW at specific site conditions at Østerild. The prototype also broke the energy generation record for a commercially available offshore wind turbine in December 2016, producing 216,000 kWh over a 24 hour period.¹²⁶ The upgraded 9MW turbine is already part of MHI Vestas' product portfolio, while the company *"is still assessing whether it will be able to squeeze more than 9MW from this platform."*¹²⁷
- (139) Furthermore, in an application submitted with developer Energicenter Nord to the Danish government's nature agency in February 2014, a possible 10MW turbine with a rotor diameter of 200m was also mentioned.¹²⁸ This development was also confirmed by customers in the market investigation.¹²⁹

GE Alstom

- (140) The Notifying Party believes based on its internal market intelligence that [confidential information regarding GE's product development plans].¹³⁰ Furthermore, market participants indicated in the market investigation that [confidential information regarding GE's product development plans].¹³¹

Senvion

- (141) There are public statements mentioning Senvion has launched a pilot study into a 10+MW turbine that could be market-ready early in next decade and that it is in talk with customers about its ideas.¹³²

Demand-side expectations

- (142) On the demand-side, customers are also publicly contemplating the use of 10+MW turbines in the near future. This is also reflected in the very low LCoE

¹²⁶ Source: <http://www.mhivestasoffshore.com/new-24-hour-record/> last visited on 03.03.2017 at 12:20

¹²⁷ Non-confidential minutes of a conference call with a competitor on 9 February 2017.

¹²⁸ Source: <http://www.windpoweroffshore.com/article/1302319/vestas-v200-10mw-turbine-application-revealed> last visited on 03.03.2017 at 12:20.

¹²⁹ Non-confidential replies to question 35 and 36.1 of Questionnaire 1 – Customers.

¹³⁰ Form CO, paragraph 406.

¹³¹ Non-confidential replies to question 35 and 36.1 of Questionnaire 1 – Customers.

¹³² Annex 28 of the Form CO – Extract re News 29 September 2016 – *Senvion crunches numbers on 10MW-plus turbine*, page 3.

offered in auctions¹³³ and the fact that some developer are confident enough to bid for projects without a preferred wind turbine supplier. A customer stated that it considers companies that "*have on their portfolio of development at least a 10MW WTG*"¹³⁴ as competitive.

- (143) Indeed, utilities such as Dong and Vattenfall in tenders for wind farm projects have committed vis-à-vis Member States a cost of energy which has decreased from 100 Euro/MWh to less than 50 Euro/MWh within the last 2 years.¹³⁵ Those prices hint at an expectation of larger turbines of higher rating, rather in the 10+MW generation.
- (144) It is also important to note that wind park developers accept turbines that have not yet been installed, therefore products in development can enter into bids at an earlier stage, exerting competition constraints on existing platforms from very early on. Indeed, the majority of customers stated that it would accept a "paper turbine" in its tenders and provided examples of tenders where not yet commercially installed turbines were short-listed or chosen.¹³⁶ This is possible because of the long lead time between the award of the tender and the installation on the offshore market. Therefore, new generation turbines can start competing as soon as they are at the "paper turbine" status approximately 5 years in advance of the expected installation date of a tender. The competitiveness of a new product is however dependent on several factors such as the cost and the bankability of the supplier. The fact that Adwen was not able to win tenders with its 8MW technology despite its superior power output and rotor diameter illustrates well that customers do not only take into consideration the technological development.
- (145) Some customers are already in discussions with wind turbine suppliers with regard to their next generation turbines and expect these to appear in bids as soon as 2017-2018.¹³⁷ The next generation turbines are expected to be installed as of 2021.¹³⁸

Conclusion on pipeline products

¹³³ "*Such a low LCOE is planned to be achieved through the use of new technology and bigger turbines (with a larger rotor diameter and generator) with cost optimisation of the foundation, the balance of plants, proper cabling and operation maintenance strategy leading to cost efficiency thanks to new logistic solutions.*" - Non-confidential minutes of a conference call with a customer on 5 December 2016.

¹³⁴ Non-confidential replies to question 35 of Questionnaire 1 – Customers.

¹³⁵ DONG's Borssele 1&2 with an LCoE of 72,70/MWh and Vattenfall's Kriegers Flak with an LCoE of 49,90/MWh. Form CO, paragraph 539.

¹³⁶ Non-confidential replies to question 37 and 40 of Questionnaire 1 – Customers; non-confidential minutes of a conference calls with customers on 14 and 20 October 2016, on 5 December 2016 and on 14 February 2017.

¹³⁷ Non-confidential replies to question 35, 36.1 and 41 of Q1 – Customers.

¹³⁸ "*Turbines with power output of 8-9MW will be competitive until 2020 [...]*" - Non-confidential minutes of a conference call with a customer on 7 February 2017. "*There is consensus on the market that technology will develop, and by 2020-2021 10+ MW turbines will be available on the market.*" – Non-confidential minutes of a conference call with a customer on 10 February 2017. "*Next generation turbines will be available for installation only after 2020.*" – Non-confidential minutes of a conference call with a customer on 16 February 2017. "*The orders for turbines will be placed in 2020-2021, [...] expects that by that time all suppliers will have double digit MW turbines (bigger than 10 MW nominal output).*" – Non-confidential minutes of a conference call with a customer on 14 February 2017. "*Next generation turbines will be installed in 2022-2023, and not before 2020.*" – Non-confidential minutes of a conference call with a customer on 6 February 2017.

- (146) Based on the entirety of the market investigation, the Commission considers that it is likely that the next generation turbines with power output of higher – [confidential information regarding next generation wind turbines] - than 10MW as well as bigger rotors will appear in bids already this year for wind parks to be installed from 2021-2022 onwards.¹³⁹
- (147) This does not necessarily mean that the current 6-8MW technology will completely disappear from the market as soon as the next generation turbines will be offered in bids. Some developers might take a more cautious approach with regard to new technology or the site specificities might require lower output turbines. However, it can be concluded that the competition constraint exerted by a turbine in the 6-8MW range will decrease significantly, as the major customers need state-of-art technology in order to continue offering lower and lower LCoE.

Open tenders

- (148) Based on the above the Commission considers that Adwen, with its 8MW platform [confidential information on Adwen's development projects], would only be capable of competing effectively for those projects which will be installed until 2021 included. In view of a lead time of 2 to 5 years until installation, for most of these offshore projects the turbine has been already selected by the wind park developer.
- (149) In order to assess the competitive strength of Adwen, the Commission identified the open tenders in this time period and has found [...] ¹⁴⁰ [...] [confidential information on Adwen's bidding intentions]. Therefore, it can be concluded that Adwen's competitive constraint is weak and its window of opportunity will be closing soon in the EEA.
- (150) Furthermore, the Commission has found that even in the case of the tenders where Adwen could compete effectively, the LCoE has been set, therefore a potential price increase due to the elimination of a competitor would not have an effect on the price of electricity for the end-consumers but would effectively materialise in a redistribution of margins between the wind turbine manufacturers and wind park developers.

5.1.1.5. Conclusion on market for offshore wind turbines

- (151) In view of the above, the Commission concludes that Adwen does not exert a significant competitive constraint on Siemens, therefore the proposed Transaction will not raise serious doubts as to its compatibility with the internal market.

5.1.2. *Manufacturing and supply of onshore wind turbines*

- (152) Based on installation data (period 2013-2015), the Parties have a combined market share of [10-20]% (Siemens [5-10]%; Gamesa [0-5]%) on the EEA onshore market. Based on data by order intake (period 2013-2016) the Parties achieve a combined market share of [5-10]% (Siemens [5-10]%; Gamesa [0-5]%).

¹³⁹ This is also supported by additional evidence in the Commission's file.

¹⁴⁰ [confidential information on Adwen's bidding intentions].

Table 3: Total EEA market shares and HHIs for onshore wind turbines by installation¹⁴¹

Total EEA market shares and HHIs for onshore wind turbines by installation								
Turbine supplier	2013		2014		2015		2013-2015	
	MW	(%)	MW	(%)	MW	(%)	MW	(%)
SIEMENS	[...]	[5-10]%	[...]	[10-20]%	[...]	[5-10]%	[...]	[5-10]%
GAMESA	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
COMBINED	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%
VESTAS	[...]	[20-30]%	[...]	[20-30]%	[...]	[20-30]%	[...]	[20-30]%
NORDEX	[...]	[10-20]%	[...]	[5-10]%	[...]	[10-20]%	[...]	[10-20]%
ENERCON	[...]	[20-30]%	[...]	[30-40]%	[...]	[20-30]%	[...]	[20-30]%
SENVION	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%
GE/ALSTOM	[...]	[0-5]%	[...]	[0-5]%	[...]	[5-10]%	[...]	[5-10]%
GOLDWIND	[...]	[0-5]%	[...]	[0.5]%	[...]	[0-5]%	[...]	[0-5]%
MINGYANG	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
OTHERS	[...]	[5-10]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
TOTAL	[...]	100%	[...]	100%	[...]	100%	[...]	100%
HHI pre-merger	[...]		[...]		[...]		[...]	
HHI post-merger	[...]		[...]		[...]		[...]	
HHI delta	[...]		[...]		[...]		[...]	

Table 4: Total EEA market shares and HHIs for onshore wind turbines by award year (by capacity)¹⁴²

"Corrected" market shares and HHIs for EEA orders - onshore - all turbine power outputs - by order year (by capacity)										
Turbine supplier	2013		2014		2015		2016		2013-2016	
	MW	(%)	MW	(%)	MW	(%)	MW	(%)	MW	(%)
SIEMENS	[...]	[5-10]%	[...]	[0-5]%	[...]	[5-10]%	[...]	[0-5]%	[...]	[5-10]%
GAMESA	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
COMBINED	[...]	[10-20]%	[...]	[5-10]%	[...]	[5-10]%	[...]	[5-10]%	[...]	[5-10]%
VESTAS	[...]	[30-40]%	[...]	[30-40]%	[...]	[30-40]%	[...]	[50-60]%	[...]	[30-40]%
NORDEX	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%
SENVION	[...]	[20-30]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%
ENERCON	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[10-20]%
GE/ALSTOM	[...]	[0-5]%	[...]	[10-20]%	[...]	[5-10]%	[...]	[5-10]%	[...]	[5-10]%
OTHERS	[...]	0%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
TOTAL	[...]	100%	[...]	100%	[...]	100%	[...]	100%	[...]	100%
HHI pre-merger	[...]		[...]		[...]		[...]		[...]	
HHI post-merger	[...]		[...]		[...]		[...]		[...]	

¹⁴¹ Form Co, annex 14.

¹⁴² Form CO, annex 15.

HHI delta	[...]	[...]	[...]	[...]	[...]
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- (153) The merged entity would still face competition from the larger onshore players Enercon, Vestas Senvion, Nordex and GE Alstom, but also from numerous smaller competitors. Therefore, the onshore market for wind turbines appears to be fragmented and the Commission considers Siemens will be sufficiently constrained post-Transaction.
- (154) The proposed Transaction will not raise concerns as to its compatibility with the internal market, as the parties' combined market share would remain below [20-30]%, considering both installed based market shares or market shares based on order intake in the last three to four years.

5.1.3. *Manufacture and supply of gearboxes*

- (155) Siemens is active in the supply of gearboxes for wind turbines onshore and offshore under its Winergy brand. Gamesa designs and manufactures gearboxes through its subsidiary Gamesa Energy Transmission (GET), but manufactures [confidential information regarding Gamesa's pattern supply] for internal supplies, with the exception of [...] gearboxes per year that are supplied to independent service providers (ISPs) for use in servicing.¹⁴³ Siemens' share on the overall market for supplying gearboxes in the EEA is [20-30]% while Gamesa's market share on the merchant market made up of the exceptional supply of gearboxes to ISPs is below [0-5]%.¹⁴⁴ Accordingly, the increment in the supply of gearboxes that will accrue to Siemens post-Transaction is *de minimis*. Moreover, Siemens' share accounts for all captive and non-captive supply of gearboxes, thereby overstating its position in the market.¹⁴⁵ The Parties will continue facing competition from competitors with significant market shares like ZF/Bosch ([20-30]%), Eickhoff ([20-30]%) and Moventas ([10-20]%).
- (156) The Commission therefore considers that the Transaction does not raise serious doubts as to its compatibility with the internal market with regard to the manufacture and supply of gearboxes for wind turbines.

5.1.4. *Manufacture and supply of generators*

- (157) Siemens' Large Drive business sells generators for wind turbines and has a market share of [20-30]% in the sale of all generators in the EEA, including captive supply of generators as well. Siemens' market share in the EEA would also be below [20-30]% if the market for generators were to be sub-segmented in induction and synchronous generators.¹⁴⁶ Gamesa's market share on the overall EEA market for generators in the EEA amounts to [5-10]%. However, [...] % of Gamesa's volume of generators is supplied internally. Gamesa's share on the merchant market is less than [0-5]% regardless of whether the market is

¹⁴³ Form CO, paragraph 545.

¹⁴⁴ Form CO, paragraph 547.

¹⁴⁵ The Notifying Party submitted it is not able to estimate market shares on a merchant market only (Form CO, paragraph 545).

¹⁴⁶ Form CO, paragraph 573.

considered for generators in general or induction generators in particular.¹⁴⁷ Accordingly, the increment in the supply of generators that will accrue to Siemens post-Transaction is *de minimis*. Moreover, Siemens' share accounts for all captive and non-captive supply of generators, thereby overstating its position in the market. The Parties will continue facing competition from vertically integrated competitors like Vestas or Enercon and other competitors like Ingetam/Indar and ABB.

- (158) The Commission therefore considers that the Transaction does not raise serious doubts as to its compatibility with the internal market with regard to the manufacture and supply of generators for wind turbines.

5.1.5. Conclusion on the horizontal overlaps

- (159) Based on the above the Commission considers that the proposed Transaction does not raise serious doubts as to its compatibility with the internal market with regard to the markets for manufacturing and supply of onshore and offshore wind turbines and the markets for manufacturing and supply of gearboxes and generators for onshore and offshore wind turbines.

5.2. Vertical relationships

- (160) Both Siemens and Gamesa manufacture input components for wind turbines, namely gearboxes and generators. For onshore wind turbines, Siemens and Gamesa each currently [confidential information on supply strategy]. For offshore wind turbines, Siemens [confidential information on supply strategy]. Accordingly, the following assessment focuses on potential input and customer foreclosure resulting from Siemens diverting part of its production of gearboxes or generators to supply Gamesa.

5.2.1. Supply of gearboxes for use in onshore and offshore wind turbines

Notifying Party's view

- (161) The Notifying Party argues that it will not have the ability or the incentive to foreclose other wind turbine OEMs with respect to supply of gearboxes given that (i) third party turbine suppliers account for [...]% of Siemens gearbox sales and typically multisource and (ii) Gamesa's production is [confidential information related to Gamesa's production]. As a result, third Party OEMs could easily start sourcing from other manufacturers and there would be no increased gain for Siemens to stop supplying them.

Commission's assessment

- (162) The Commission considers that the Transaction does not lead to an ability or incentive of the Parties to engage in any input or customer foreclosure strategy.

No ability

- (163) The Commission considers that the Transaction does not lead to an ability to foreclose other wind turbine OEMs with regard to the supply of gearboxes.

¹⁴⁷ Form CO, paragraph 576. Gamesa is not active in the supply of synchronous generators.

- (164) First, the combined market share of the Parties on the merchant market for the supply of gearboxes remains below [30-40]%. The increment resulting from the Transaction is minimal with less than [0-5]% as Gamesa has almost exclusively supplied gearboxes internally.
- (165) Second, there are a number of competitors with significant market shares on the market for the supply of gearboxes. Some of these competitors of the Parties, like for example ZF/Bosch, are not active on the downstream market for wind turbines.
- (166) One customer of gearboxes for onshore turbines raised concerns of potential foreclosure if Siemens decides to internalise Gamesa's supply, arguing that, because gearboxes are tailor-made, switching to a different supplier can take between one to three years, while the contract between Siemens and its customers provided that it could be terminated in one year. However, [confidential information regarding Siemens' recent supply pattern to Gamesa].¹⁴⁸ Therefore, given that Gamesa is supplied internally with equally tailor-made gearboxes, it would take the same time to switch its supply to Siemens, thereby allowing foreclosed customers to look for alternatives in the same timeframe.
- (167) During the market investigation, none of Siemens' major gearbox customers in the EEA raised concerns related to potential input foreclosure. Additionally, in the course of the market investigation, onshore turbine OEMs confirmed the view of the Parties that they multisource gearboxes.¹⁴⁹
- (168) With respect to gearboxes for offshore wind turbines, the market investigation has confirmed that it is unlikely that Siemens will have the ability to foreclose third party OEMs post-Transaction. Offshore turbine OEMs have also indicated that they typically multisource gearboxes.¹⁵⁰ Moreover, Siemens will continue to face competition from numerous competitors in the EEA such as ZF/ Bosch, Eickhoff and Moventas.¹⁵¹

No incentive

- (169) The Commission considers that the Parties will also not have the incentive to foreclose third party OEMs.
- (170) Siemens' customer base is made up of [...] % of sales to third party turbine OEMs while only [...] % are supplied internally to Siemens. The proportion of internal sales is further decreasing given that Siemens Wind Power is phasing out geared turbines offshore and replacing them with direct drive technologies.¹⁵² Although Siemens is Adwen's gearbox provider for AD8-180, Adwen has no contract awarded for installation before 2021, therefore Siemens could not deviate internal production towards Adwen.¹⁵³ If Siemens were to cease supplying third party

¹⁴⁸ Form CO, paragraph 553.

¹⁴⁹ Non-confidential replies to question 42 of Questionnaire 2 – Competitors.

¹⁵⁰ Non-confidential replies to question 42 of Questionnaire 2 – Competitors.

¹⁵¹ Market shares in 2015 in the EEA: ZF/Bosch [20-30]%, Eickhoff [20-30]% and Moventas [10-20]%. (Source: Form CO, paragraph 548 table 14).

¹⁵² Form CO, paragraph 563.

¹⁵³ Notifying Party's reply to question 6 of RFI 21, 3 March 2017.

turbine OEMs it would result in additional idle capacity and foregone revenue without compensation.

- (171) Furthermore, the price of a gearbox amounts to [...] % of the final price of an offshore turbine.¹⁵⁴ Therefore, any foreclosure attempt from the Parties would barely affect the price of third party turbine OEMs such as to provide the Parties with a competitive advantage with regard to the price of its own turbines.

5.2.1.1. No customer foreclosure

- (172) Siemens is [confidential information regarding the parties' sourcing of gearboxes]. Gamesa is [confidential information regarding the parties' sourcing of gearboxes].¹⁵⁵
- (173) However, as explained above (see sections 4.1.1.2, 5.1.1.3 and 5.1.1.4) Adwen's [confidential information regarding the competitiveness of Adwen's 5MW turbine]. Therefore, gearboxes will only be needed for tenders already awarded, which are already installed or in installation. Moreover, given that gearboxes need a period of time to be tailor-made to the specific turbine, [confidential information regarding the competitiveness of Adwen's 5MW turbine].
- (174) As a result, the Commission considers Siemens will not have the ability or the incentive to engage in customer foreclosure post-Transaction.

Conclusion

- (175) In view of the above, the proposed Transaction does not raise serious doubts as to its compatibility with the internal market with regard to the vertical relationship between the market of gearboxes for onshore and offshore turbines and the downstream wind turbine markets.

5.2.2. *Supply of generators for use in onshore and offshore wind turbines*

Notifying Party's view

- (176) The Notifying Party argues that it will not have the ability or the incentive to foreclose other wind turbine OEMs with respect to supply of generators given that (i) third party turbine suppliers account for [...] % of Siemens sales of all types of generators combined and [...] % of induction generators for geared turbines and typically multisource and (ii) Gamesa's production is [confidential information regarding Gamesa's generator supply strategy]. As a result, third Party OEMs could easily start sourcing from other manufacturers and there would be no increased gain for Siemens to stop supplying them.

Commission's assessment

- (177) The Commission considers that the Transaction does not lead to an ability or incentive of the Parties to engage in input or customer foreclosure strategies with regard to generators.

¹⁵⁴ Form CO, paragraph 570.

¹⁵⁵ Notifying Party's reply to question 6 of RFI 21, 3 March 2017. [Confidential information regarding Adwen's gearbox sourcing].

5.2.2.1. No input foreclosure

No ability

- (178) The Commission considers that the Transaction does not lead to an ability to foreclose other wind turbine OEMs with regard to the supply of generators. On one hand, Gamesa, including Adwen, only uses induction generators for geared turbines, on the [other] hand, Siemens does not currently sell any synchronous generator for direct drive turbines therefore potential foreclosure would only concern induction generators for geared turbines.
- (179) First, the combined market share of the Parties on the merchant market for the supply of generators remains below [30-40]%. The increment resulting from the Transaction is minimal with less than [0-5]% as Gamesa [confidential information regarding Gamesa's generator supply strategy].
- (180) Second, there are a number of competitors on the market for the supply of generators. Some of these competitors of the Parties, like for example VEM, are not active on the downstream market for wind turbines.
- (181) On the same basis than for gearboxes, one customer of generators for onshore turbines raised concerns of potential foreclosure by Siemens. However, for the same reasons as outlined in the previous section, this concern does not change the Commission's analysis and conclusions in relation to the Parties' ability or incentive to engage in input foreclosure for generators post-Transaction.
- (182) During the market investigation, none of Siemens' major generators customers in the EEA raised concerns related to potential input foreclosure. Additionally, in the course of the market investigation, onshore turbine OEMs confirmed the view of the Parties that they multisource generators.¹⁵⁶ Also, most of turbine OEMs source at least part of their needs in-house.
- (183) With respect to generators for offshore wind turbines, the market investigation has confirmed that it is unlikely that Siemens will have the ability to foreclose third party OEMs post-Transaction. Offshore turbine OEMs have also indicated that they typically multisource generators.¹⁵⁷ Moreover, Siemens will continue to face competition from numerous competitors in the EEA such as GE, VEM, ABB or Ingeteam/Indar.¹⁵⁸

No incentive

- (184) The Commission considers that the Parties will also not have the incentive to foreclose third party OEMs.
- (185) Siemens' customer base of induction generators for geared turbines is made up of [...]% of sales to third party turbine OEMs while only [...]% are supplied

¹⁵⁶ Non-confidential replies to question 42 of Questionnaire 2 – Competitors.

¹⁵⁷ Non-confidential replies to question 42 of Questionnaire 2 – Competitors.

¹⁵⁸ Market shares in the EEA in 2015 (captive and non-captive): ABB 3%; Ingeteam/Indar 8%, VEM 6%. (Source: Form CO, paragraph 575, table 15).

internally to Siemens.¹⁵⁹ The proportion of internal sales is further decreasing given that Siemens Wind Power is phasing out geared turbines offshore and replacing them with direct drive technologies.¹⁶⁰ If Siemens were to cease supplying third party turbine OEMs it would result in additional idle capacity and foregone revenue without compensation.

- (186) Furthermore, the price of a generator amounts to [...] % of the final price of an offshore turbine.¹⁶¹ Therefore, any foreclosure attempt from the Parties would barely affect the price of third party turbine OEMs such as to provide the Parties with a competitive advantage with regard to the price of its own turbines.

5.2.2.2. No customer foreclosure

- (187) Siemens is [confidential information regarding the parties' sourcing of generators].¹⁶² The Transaction therefore does not change the ability or incentive to foreclose customers.
- (188) As explained above (see sections 4.1.1.2, 5.1.1.3 and 5.1.1.4) Adwen's [confidential information regarding the competitiveness of Adwen's 5 MW turbine]. Therefore, generators will only be needed for tenders already awarded and which are already installed or in installation. Moreover, given that generators need a period of time to be tailor-made to the specific turbine, [confidential information regarding the competitiveness of Adwen's 5 MW turbine].
- (189) As a result, the Commission considers the merged entity will not have the ability nor the incentive to engage in customer foreclosure as a result of the Transaction.

Conclusion

- (190) In view of the above, the proposed Transaction does not raise serious doubts as to its compatibility with the internal market with regard to the vertical relationship between the market of generators for onshore and offshore turbines and the downstream wind turbine markets.

6. CONCLUSION

- (191) 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
Member of the Commission

¹⁵⁹ Form CO, paragraph 177.

¹⁶⁰ Form CO, paragraph 563.

¹⁶¹ Form CO, paragraph 570.

¹⁶² Notifying Party's reply to question 6 of RFI 21, 3 March 2017.