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PUBLIC VERSION

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 Where possible the information omitted has been replaced by ranges of figures or a general description.

Advent International Corporation
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Subject: **Case M.10817 – ADVENT / DEM BUSINESS / HPM BUSINESS**
Commission decision pursuant to Article 6(1)(b) of Council Regulation No 139/2004[1] and Article 57 of the Agreement on the European Economic Area[2]

Dear Sir or Madam,

(1) On 24 November 2022, the Commission received a notification of a proposed concentration pursuant to Article 3(1)(b) of Merger Regulation by which certain funds (the "Advent Funds") managed or advised by Advent International Corporation ("AIC", United States, referred to as "Advent" or the "Notifying Party") intend, through acquisition vehicles, to acquire the high performance materials business ("HPM", Germany) of Lanxess AG (together with its affiliates "Lanxess") and the engineering materials business ("DEM") of Koninklijke DSM N.V. ("DSM", The Netherlands) (the "Transaction").[3] HPM and DEM are

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

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

3 Publication in the Official Journal of the European Union No C 458, 01.12.2022, p. 11

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hereinafter referred to as the "Targets". Advent and the Targets are referred to as the "Parties". The Transaction takes place by way of purchase of shares.

1. THE PARTIES

(2) **Advent** is a private equity investor based in Boston. Advent focuses on: (i) the acquisition of equity stakes (both controlling and non-controlling) in companies; and (ii) the management of investment funds. Advent holds shares in various sectors, including media, communications, information technology, internet, chemicals, pharmaceuticals.

(3) **HPM** engages in the manufacture, sale and marketing of thermoplastic polymers and intermediates necessary for the production of such polymers, i.e. polyamide-based engineering plastics, polybutylene terephthalate-based engineering plastics, and continuous fibre-reinforced thermoplastic composites, conducted currently by a group of companies, all of which are directly or indirectly owned subsidiaries and participations of Lanxess. HPM has ten manufacturing sites worldwide across six countries.

(4) **DEM** consists of: (i) the entities DSM Engineering Materials B.V., DSM Engineering Materials International B.V. and DSM Engineering Materials, Inc.; (ii) their subsidiaries; and (iii) associated activities and IP rights. DEM develops, produces and globally supplies thermoplastics, offering a broad range of polymers, including polyamides, polyesters and polyphenylene sulphides to a wide range of industries. DEM has ten manufacturing sites worldwide across five countries.

2. THE TRANSACTION

(5) Pursuant to an investment agreement between Advent and Lanxess and a signing protocol over an agreed form share purchase agreement between Advent and DSM (the "Investment Agreement" and "Share Purchase Agreement", respectively), both signed on 31 May 2022, HPM and DEM will be consolidated into a newly formed holding company (the "Joint Entity"). Advent will indirectly hold [the majority] of the shares and Lanxess will hold the remaining, […]% of the shares.

(6) The Joint Entity will be governed by: (i) the Board (consisting of the CEO and the CFO), (ii) the Shareholders' Committee; and (iii) the Shareholders' Meeting. Advent will appoint all members of the Board. The Shareholders' Committee will be the main decision-making body, responsible for strategic decisions and important operational matters of the Joint Entity. Advent will appoint [the majority of the] members of the Shareholders' Committee, which will approve the business plan and annual budget, and the appointment and removal of the board members by simple majority. Lastly, the Shareholders' Meeting is the ultimate decision-making body of the Joint Entity, where Advent will hold the majority of shares.[4]

(7) Advent will therefore solely control the Joint Entity within the meaning of Article 3(1)(b) of the Merger Regulation.

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4 Form CO, paragraphs 53-55 and 59-61.

(8) The acquisition by Advent of HPM and DEM are conditional on each other i.e., none of Advent's acquisitions will take place without the other.[5] Given this mutual conditionality and the fact that Advent is acquiring control of both Targets, the Commission considers that the acquisition of control of the Joint Entity constitutes a single concentration within the meaning of Article 3 of the Merger Regulation.[6]

3. UNION DIMENSION

(9) The undertakings concerned have a combined aggregate worldwide turnover of more than EUR 5 000 million[7] (Advent: EUR […] million, HPM: EUR […] million, DEM: EUR […] million, all in 2021). Each of them has a Union-wide turnover in excess of EUR 250 million (Advent: EUR […] million, HPM: EUR […] million, DEM: EUR […] million, all in 2021), but they do not achieve more than two-thirds of their aggregate Union-wide turnover within one and the same Member State. The notified operation therefore has a Union dimension.

4. RELEVANT MARKETS

4.1. Overview

(10) Engineering plastics ("EP") are plastics with advanced product specifics. EP have replaced materials like metal, alloys, wood and glass in a broad range of industries, such as automotive, industrial and consumer products. EP are often lighter and easier to process than previously used materials. EP are generally produced in two steps, the polymerisation to obtain the base polymer ("BP"), and the compounding step by which the BP is mixed with additives and stabilisers to improve product specifics such as stiffness, strengths, impact resistance, thermal resistance or electrical conductivity of the EP. EP are sold to customers in the form of granules. Customers process the granules into the final product form by using processes like injecting moulding, blow moulding or extrusion.[8]

(11) The Parties' activities horizontally overlap in the production and supply of: (i) polyamide ("PA") 6 BP; (ii) PA6 EP; (iii) polybutylene terephthalate ("PBT") EP; (iv) polyethylene terephthalate ("PET") EP and (v) PA6.6 EP[9].

(12) The Parties' activities are vertically related in: (i) the production and supply of caprolactam (upstream) and PA6 BP (downstream); (ii) the production and supply of glass fibre (upstream), and PA6 EP, PA6.6 EP, PBT EP, PP EP (downstream); (iii) the production and supply of PA6 BP (upstream) and PA6 EP (downstream); (iv) the production and supply of PBT BP (upstream) and PBT EP (downstream).

(13) There are no horizontal overlaps or vertical relationships between either of the Targets and Advent's other portfolio companies in the EEA.[10]

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5 Form CO, paragraphs 46-48.

6 Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings, paragraph 44.

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

8 See M.8674 – *BASF / Solvay*, paragraphs 290 and 291; and Form CO, paragraphs 167-170.

9 Form CO, Table 1. PA6 and PA6.6 are nylon products, where 6 and 6.6 refers to the different compositions of the material.

(14) The Parties' activities only give rise to horizontally affected markets for PA6 BP (and plausible segments of PA6 BP for EP and PA6 BP for films) in the EEA. Therefore, only those markets (and plausible segments) will be further discussed in this decision[11].

4.2. Product market definition PA6

(15) PA 6 EP is an engineering plastic. Its base polymer PA6 BP is made by ring opening polymerization of caprolactam and can be either further processed to PA6 EP, or used as input for the production of films for packaging or performance fibres. PA6 EP is produced by compounding, *i.e.* by adding additives and stabilisers to the BP.[12]

(16) HPM and DEM are vertically integrated, i.e. they are active with regard to polymerisation of PA6 BP and compounding it into PA6 EP. HPM is further vertically integrated into caprolactam.

4.2.1. The Commission's past practice

(17) In the past, the Commission considered PA6 BP and PA6 EP as being on different steps of the PA6 value chain, and assessed both products as separate product markets.[13]

(18) At the BP level the Commission concluded that PA6 BP and PA6.6 BP constitute distinct product markets due to lack of demand-side and supply-side substitutability.[14] The Commission assessed whether the market for PA6.6 BP should be further segmented by end-use (*e.g.* for EP, for film and for fibres), but ultimately concluded that PA6.6 BP constitutes one overall product market without further segmentation.[15] It has not explicitly considered whether the neighbouring market of PA6 BP should be similarly segmented by end use.[16] The Commission also discussed a potential separate market for PA6 film,[17] *i.e.* PA6 BP processed into film used for packaging, which would be downstream to PA6 BP, but it left the market definition open.[18]

(19) At the EP level, the Commission concluded in past cases that PA6 EP and PA6.6 EP belonged to two separate product markets, as PA6 EP was not a suitable substitute for PA6.6 EP due to PA6.6 EP's superior product characteristics and that

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10 Form CO, paragraph 42.

11 When considering these plausible segments, a number of vertically affected markets could also be considered: (i) caprolactam (upstream) and PA6 BP for films (downstream) as discussed in footnote 75; and (ii) glass fibre (upstream) and PA6 EP for automotive and E&E (downstream) as discussed in footnote 117; and (iii) PA6 BP (upstream) and PA6 EP for automotive and E&E (downstream) as discussed in footnote 117.

12 Form CO, paragraphs 157, 167-170.

13 See M.8674 – *BASF / Solvay*, paragraphs 18 – 22, 244 *et seqq*. and 290 *et seqq*.; M.9553 – *Domo Investment Group / Solvay Performance Polyamides Business in the EEA*, paragraphs 9 *et seqq*.

14 See M.8674 – BASF / Solvay, paragraphs 247 – 260.

15 M.8674 – *BASF / Solvay*, paragraphs 259-260.

16 M.8674 – *BASF / Solvay*, paragraphs 259-260.

17 Such market for PA6 film is not relevant for the present Transaction, as neither Party is active in this market; Form CO, footnote 99.

18 See M.9553 – *Domo Investment Group / Solvay Performance Polyamides Business in the EEA*, paragraphs 28 *et seqq*.

it was considerably more expensive than PA6 EP.[19] From a supply-side, the Commission found that technically the same compounding equipment can produce PA6 EP and PA6.6 EP, but indicated that different inputs (*i.e.* PA6.6 BP and its input components for the manufacturing of PA6.6 EP) were required for the production of both products.[20] The Commission further discussed a potential sub-segmentation of the market for PA6.6 EP by grades or applications, but considered a degree of supply- and demand-side substitutability, and assessed an overall market for PA6.6 EP. The Commission has not considered the sub-segments of automotive, electrical and electronics ("E&E") and speciality grades for PA6.6 EP and has not considered any potential segmentation for PA6 EP.[21]

4.2.2. The Notifying Party's view

(20) The Notifying Party does not contest the Commission's past findings that the BP constitutes a separate market from the EP, and provides information separately for PA6 BP and PA6 EP.[22]

(21) At the BP level, the Notifying Party submits that the production processes of PA6 BP and PA6.6 BP differ and involve different equipment and inputs. On the other hand, it argues that a further segmentation of PA6 BP according to different end-uses, *i.e.* the manufacturing of EP, for films and for performance fibres is not appropriate, as PA6 BP is a commodity product which is identical across different end-use applications. Manufacturers are able to produce PA6 BP for all end-applications, which only differs in the level of viscosity, which can easily be adjusted. The Notifying Party submits that the exact product market definition for PA6 BP can be left open, as sufficient competition would remain post-Transaction under any plausible product market definition.[23]

(22) At the EP level, the Notifying Party argues that PA6 EP and PA6.6 EP can be substituted for the majority of end-applications. From a technical perspective, PA6 EP and PA6.6 EP have similar product performances with respect to heat deflection, water glycole resistance, tensile strengths and water absorption. A technical advantage of PA6.6 EP in terms of heat resistance, which is an important product feature in the automotive industry, would become less crucial due to e-mobility, where heat resistance is less important. The Notifying Party acknowledges that PA6.6 EP has been more expensive than PA6 EP in the past, but provides that the price gap between both products has narrowed recently. In conclusion, the Notifying Party considers that PA6 EP and PA6.6 EP are part of the same product market.[24] Lastly, the Notifying Party provides that the market for PA6 EP should not be further segmented by end-application, as the same grades are used across different end-use applications. Competitors would not produce PA6 EP for specific end-applications and could easily switch their production between different grades of PA6 EP.[25]

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19 See M.8674 – *BASF / Solvay*, paragraphs 302 to 306.
20 See M.8674 – *BASF / Solvay*, paragraph 307.
21 See M.8674 – *BASF / Solvay*, paragraphs 302 to 309; also M.9553 – *Domo Investment Group / Solvay Performance Polyamides Business in the EEA*, paragraphs 39-41.
22 Form CO, paragraphs 157 *et seqq*.
23 Form CO, paragraphs 163-166.
24 Form CO, paragraphs 167-183.
25 Form CO, paragraphs 184-204.

4.2.3. The Commission's assessment

(23) **PA6 BP and PA6 EP.** The market investigation confirmed the Commission's past practice that PA6 BP and PA6 EP form separate product markets. As for demand-side substitution, respondents indicated that customers would not be able to use PA6 BP interchangeably with PA6 EP, as the EP would have significantly superior product features compared to the BP which are required for many end-applications.[26] One competitor stated: *"After compounding, the material contains specific reinforcements and additive providing the specific performance needed for the application. The properties cannot be compared to the neat resin."*[27]

(24) From a supply-side perspective, respondents confirmed that suppliers would not be able to switch their production easily from PA6 BP to PA6 EP or *vice versa*, and that significant investment would be needed to switch between products.[28] One competitor specified that the production of PA6 BP and PA6 EP would require a: *"totally different technology. To create PA6 BP involves a polymerization, which is a chemical reaction and requires a specific reactor and all related measures. The step from PA6 BP to PA6 EP is compounding, i.e. formulating with the PA6 BP. There isn't a single equipment that is used on both steps."*[29]

(25) Based on the above, and in line with past practice, the Commission considers that the manufacturing and sale of PA6 BP is upstream in the PA value chain of the manufacturing and sale of PA6 EP. The exact product market definition on the BP level and on the EP level is discussed in sections 4.2.3.1. and 4.2.3.2. below.

4.2.3.1. At the BP level

(26) **PA6** BP must be distinguished from **PA6.6 BP.** The market investigation confirmed the Commission's past practice that PA6 BP and PA6.6 BP constitute separate product markets. From a demand-side perspective, respondents to the market investigation indicated that customers would only be able to substitute PA6 BP with PA6.6 BP with difficulties and additional costs, pointing toward different processing characteristics and different functionalities of the two materials.[30] From a supply-side point of view, competitors provided that switching production between PA6 BP and PA6.6 BP would require considerable time and investment due to differences in production.[31] One competitor indicated: *"The polymerization reaction is a condensation in both cases, but the base monomers, reactor and process design is totally different. It is impossible to polymerize PA66 in a PA6 reactor and vice versa. A PA6 producer would have to invest in a totally new PA66 plant (…)."*[32]

(27) Based on the above, and in line with past practice, the Commission considers that the manufacturing and sale of PA6 BP constitutes a separate product market from the manufacturing and sale of PA6.6 BP.

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26 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 5.

27 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 5.1. Customers responding to the market investigation did not provide information that contradict this view.

28 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 9.

29 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 9.1.

30 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 6 and 6.1. Customers responding to the market investigation did not provide information that contradicts this view.

31 Replies to Questionnaire Q.3 to Competitors in PA6 BP, Question 7.

32 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 7.1.

(28) **Segmentation of PA6 BP by end-application.** The Commission considered to further segment the PA6 BP market by end-use, *i.e.* PA6 BP for manufacturing of PA6 EP, for films and for fibers. The results of the market investigation were inconclusive on whether such segmentation was appropriate. From a demand-side perspective, competitors tended to the view that different types of PA6 BP could not be used interchangeably,[33] while customers provided contradicting views in this regard.[34] Both customers and competitors confirmed that a main difference in PA6 BP for the different end-applications is the level of viscosity. From a supply-side perspective, customers and competitors indicated that manufacturers of PA6 BP would typically supply all or at least most types of PA6 BP.[35] However, competing manufacturers explained that broadening its product portfolio to start producing PA6 BP for a certain end-use would require significant time and investment in additional equipment.[36]

(29) Based on the above, the Commission considers that separate product markets for PA6 BP by end-applications, *e.g.* for the manufacturing of PA6 EP, films and fibers may exist, but that the market can be left open for the purposes of the present decision as no competition concerns arise due to the Transaction under any plausible product market definition.

4.2.3.2. At the EP level

(30) **PA6 EP** must be distinguished from **PA6.6 EP.** Against the background of the arguments put forward by the Notifying Party, the Commission assessed whether the market situation for PA6 EP and PA6.6 EP has changed in the sense that both products would now fall into the same product market. From a demand-side perspective, customers and competitors responding to the market investigation confirmed that PA6 EP and PA6.6 EP could be used interchangeably from a technical point of view for a significant share of end-applications, while no substitution was possible for others. For example, the Commission understands that PA6 EP is less resistant to heat and moisture than PA6.6 EP and would therefore not be a suitable substitute for end-applications where such product features are important. On the other hand, customers pointed at a higher flexibility of PA6 EP and at PA6 EP grades with a high share of glass-fiber for which no PA6.6 EP equivalent exists.[37]

(31) The market investigation also indicated that substitution may be one-directional due to the higher price of PA6.6 EP. One customer explained: *"As PA66 is typically more expansive than PA6 you would normally use PA6 if you could and only use PA66 if the technical specification forces you to use PA66."*[38] In line with this statement, the clear majority of customers responding to the market investigation indicate that they would not switch from PA6 EP to PA6.6 EP in the case of a permanent price increase of 5 - 10%.[39] Against this background, the

33 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Questions 8 and 8.1.
34 Replies to Questionnaire Q.4 to Customers of PA6 BP, Questions 7 and 7.1.
35 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 9, and to Questionnaire Q.4 to Customers of PA6 BP, Question 8.
36 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Questions 10 and 10.1.
37 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Questions 4 and 4.1, and to Questionnaire Q.2 to Customers of PA6 EP, Questions 6, 6.1 and 7.1.
38 Replies to Questionnaire Q.2 to Customers of PA6 EP, Question 6.1.
39 Replies to Questionnaire Q.2 to Customers of PA6 EP, Question 7.

Commission notes that customers cannot freely switch between the use of PA6 EP and PA6.6 EP even for applications that technically allow for substitution. This is because: (i) changes of material may require re-qualification with the customer;[40] and (ii) products may be designed specifically for the use of a certain material.[41] Therefore, the substitution of PA6 EP with PA6.6 EP is only commercially viable if prices for PA6.6 EP would remain long-term and for sufficient quantities at the level of prices for PA6 EP.[42]

(32) From a supply-side point of view, a majority of competitors responding to the market investigation indicated that manufacturers can switch their production from PA6 EP to PA6.6 EP, and *vice versa*, without significant investments or time constraints.[43] Therefore, a degree of supply-side substitutability appear to exist at least from a technical perspective. On the other hand, the Commission notes that the manufacture of PA6 EP and PA6.6 EP requires access to different inputs (*i.e.* PA6 BP and PA6.6 BP), and may require experience and know-how as well as a certain track-record to be acknowledged as credible alternative in the respective markets by customers.

(33) On balance, PA6 EP and PA6.6 EP likely constitute two separate product markets, in line with the Commission's past practice. To the extent that there is substitution, it is more from PA6.6 EP to PA6 EP than the other way due to the higher cost of PA6.6 EP. For the assessment of the present Transaction, this question can ultimately be left open, as no competition concerns arise due to Transaction under any plausible product market definition.[44]

(34) **Segmentation of PA6 EP by end-application.** Lastly, the Commission considered if the market for PA6 EP should be further segmented by end-application, in particular automotive, E&E and specialised industries. PA6 EP is a heterogeneous product, which exists in a large number of different grades which differ in product features, depending for instance on the mix of additives and stabilisers added in the compounding process.

(35) Customers cannot easily switch between those different grades of PA6 EP, as they often qualify a specific grade with their customers, and switching to a different product requires re-qualification. Therefore, from a demand-side perspective, customers cannot easily substitute between different grades of PA6 EP for existing projects.

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40 As explained in more detail in paragraphs (35) - (36) of this decision. See also minutes of a call with a customer of 12 October 2022, paragraph 5, in which the customer stated that the company has *"tested each grade of PA6 EP it sources and has defined for which of its product(s) the grade of the supplier can be used."*

41 Replies to Questionnaire Q.2 to Customers of PA6 EP, Questions 6.1 and 7.1.

42 Regarding the price data submitted by the Notifying Party, the chart shows a narrowing price gap between PA6 EP and PA6.6 EP only for the very recent months, starting from April 2022, with considerable price differences between the two products before. Form CO, Figure 5.

43 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 8.

44 Combined market shares in terms of merchant sales (volumes) in 2021 for PA6.6 EP amount to [5-10]% (DEM [0-5]%, HPM [5-10]%), and would therefore not be affected. Combined market shares of the Parties for an overall PA6 EP / PA6.6 EP would amount to [20-30]%, constituting an affected market, but with significantly lower market shares compared to a plausible narrower market for PA6 EP ([20-30]%).

(36) However, the Commission notes that some degree of substitutability exists between different PA6 EP materials and that such materials may be considered substitutable once a customer decides on the material used for the production of a new end-product. One customer explained that, on a broader level: *"specific products* [of PA6 EP] *can be replaced by products of other suppliers. For example,* [the customer] *sources different types of PA6 EP in categories such as glass-fibre reinforced or flame retardant. Therefore, for each of its products,* [the customer] *can source materials from different suppliers."*[45] A second customer described that once qualified, a supplier cannot change the production of a material, and such a change would require a re-qualification. On the other hand, the customer explained to have recently qualified the products of a second supplier, and would therefore now be in a position to switch between different PA6 EP products for certain applications.[46]

(37) From a supply-side point of view, the majority of competitors responding to the market investigation indicated that they could start producing PA6 EP for most end applications quickly and without significant costs.[47] It has to be acknowledged that suppliers point at the need for significant development efforts and testing particularly for some PA6 EP products with very specific features or for industries with very high quality requirements[48], and for which therefore supply-side substitutability is limited. On the other hand, the Commission notes that different types of PA6 EP do not require different production equipment. One competitor explained: *"Compounding plants are multi-purpose plants where different Engineering Plastics grades can be produced using the same equipment and personnel."*[49] In addition, the overwhelming majority of suppliers responding to the market investigation indicate that they are active in the main categories of end-applications PA6 EP is used, *i.e.* automotive, E&E and specialized grades.[50]

(38) Based on the above, the Commission considers that it is not meaningful to define a very high number of separate product markets for each grade. The Commission cannot exclude the possibility that the market may be segmented by end use (automotive, E&E, specialised industries). For the purpose of the assessment of this Transaction, the Commission will carry out an assessment for the overall PA6 EP market, as well as separately for automotive, E&E and specialised industriess, while the exact product market definition can be left open in this regard as no competition concerns arise due to the Transaction under any plausible product market definition.

4.2.4. Conclusion

(39) Based on the above, and for the purpose of the assessment of this Transaction, the Commission considers PA6 EP and PA6 BP to be separate product markets. The Commission further concludes that the manufacturing and sale of PA6 BP and PA6.6 BP constitute separate product markets. It can be left open if the market for PA6 BP should be further segmented by end-use, *i.e.* EP, film or fibre. As for the manufacturing and sale of PA6 EP, the market investigation suggests that this

45 Minutes of a call with a customer of 12 October 2022, paragraph 6.
46 Minutes of a call with a customer of 21 September 2022, paragraph 7 and 12.
47 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 7.
48 Such as, for example healthcare or some flame retardant materials.
49 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 7.1.
50 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 18.

market would be separate from the manufacture and sale of PA6.6 EP, but the exact market definition can ultimately be left open in this regard.[51] Furthermore, the market for PA6 EP may be further segmented into end-applications, *i.e.* automotive, E&E and specialised industries, and narrower segments may exist but the exact market segmentation can be left open for the purposes of this decision.

4.3. Geographic market definition PA6

4.3.1. The Commission's past practice

(40) In the past, the Commission considered the market for PA6 BP to be EEA-wide in scope.[52] This is in line with past views on the geographic market definition for PA6.6 BP, which is a separate product, but has some similarities to PA6 BP.[53]

(41) In past cases, the Commission assessed the market for PA6.6 EP at EEA-wide level, while leaving open a potential wider geographic market definition. No conclusion was reached explicitly for PA6 EP.[54]

4.3.2. The Notifying Party's view

(42) The Notifying Party considers the market for PA6 BP to be global and argues that there are significant trade flows of PA6 BP between the EEA and the rest of the world. Transport costs are negligible compared to production costs of the material, and the Targets produce the same grades of PA6 BP globally.[55]

(43) As for PA6 EP, the Notifying Party acknowledges that markets are narrower compared to BP, but notes that there are no meaningful barriers for suppliers to enter or expand into the EEA. Lower energy costs outside of the EEA may further incentivise extra-EEA imports, and the same products and brands of PA6 EP are sold globally. Lastly, large customers are active globally, and may compare prices for PA6 EP at a global level.[56]

4.3.3. The Commission's assessment

(44) **PA6 BP**. The market investigation confirmed the Commission's past practice that the market is EEA-wide in geographic scope.[57] Customers indicated a certain or

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51 A plausible overall PA6 EP / PA6.6 EP market would be just affected with combined market shares of the Parties of [20-30]% (DEM [5-10]%, HPM [10-20]%), based on merchant sales shares for 2021; see Form CO, Table 24. However, the Parties' significant market position stems from their strong PA6 EP business, for which combined market shares reach [20-30]%, while the Parties' combined market shares for PA6.6 EP would remain low at [5-10]% (DEM [0-5]%, HPM [5-10]%) in the EEA (Form CO, Table 26). Consequently, if PA6.6 EP was considered a suitable substitute for PA6 EP, this would only add further alternatives for customers in the market. Therefore, the Commission will carry out its assessment for a plausible narrower market for PA6 EP, and considers that absent of competition concerns for this narrower market, no plausible concerns arise in a plausible broader market including both PA6 EP and PA6.6 EP.

52 See M.9553 – Domo *Investment Group / Solvay Performance Polyamides Business in the EEA*, paragraphs 24 *et seqq*.

53 See M.8674 – *BASF / Solvay*, paragraphs 261-276.

54 See M.8674 – *BASF / Solvay*, paragraphs 310-322.

55 Form CO, paragraphs 218-220.

56 Form CO, paragraphs 221-227.

57 The Commission has no indication that the assessment would differ for potential segments of the overall PA6 BP market.

even a strong preference to source PA6 BP in relative proximity to their manufacturing plants, mainly to reduce transportation costs and delivery times, and to ensure the security of supply.[58] In line with this, customers indicate to source the large share of their PA6 BP demand from within the EEA.[59]

(45) This view was confirmed by competitors responding to the market investigation, who indicated that they sell most of their EEA-production of PA6 BP within the EEA, and confirming transportation costs and long delivery periods as main barriers to trade the material globally, as well as regulatory barriers.[60] One competitor explained that while production costs vary between regions, *"the proximity of the supplier is the relevant purchasing reason. Additional REACH* [Registration, Evaluation, Authorisation and Restriction of Chemicals, an EU regulation] *and European preferential origin are required for European business."*[61]

(46) Lastly, customers and competitors confirm significant price differences between the EEA and Asia, where production is significantly cheaper, *e.g.* due to lower energy costs.[62] The existence of significant price gaps between regions further indicate separate geographic product markets. While PA6 BP is generally a transportable product without significant technical barriers to transportation over longer distances,[63] it is uncertain if potentially increasing price differences would trigger significantly larger imports into the EEA, offsetting transportation costs, longer delivery times, security of supply considerations and regulatory barriers.

(47) **PA6 EP**. The market investigation confirmed the existence of an EEA-wide market for PA6 EP.[64] Customers indicated an even stronger preference for sourcing in relative proximity to their manufacturing plants compared to BP, naming transport costs, delivery times and security of supply as the main reasons, as well as sustainability aspects.[65] In line with this, customers confirm that they source the large share of their PA6 EP demand from within the EEA, and to a significant extent even regionally.[66]

(48) This view was further substantiated by feedback from competitors, who sell the large part of their EEA-wide PA6 EP production within the EEA, due to delivery periods, transportation costs, customer preferences and regulatory barriers, specifically the EU REACH regulation.[67] One competitor elaborated that *"EP production centres need to be geographically in the same region than the customers locations, for the very large majority of sales. Some very specialty*

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58 Replies to Questionnaire Q.4 to Customers of PA6 BP, Questions 10 and 10.1.

59 Replies to Questionnaire Q.4 to Customers of PA6 BP, Question 11.

60 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Questions 12 and 13.

61 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 12.1.

62 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 15 and to Questionnaire Q.4 to Customers of PA6 BP, Question 13.

63 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 14 and to Questionnaire Q.4 to Customers of PA6 BP, Question 12. Some respondents pointed at sensitivity to humidity, which would require careful packaging of the material.

64 The Commission has no indication that the assessment would differ for potential segments of the overall PA6 EP market.

65 Replies to Questionnaire Q.2 to Customers of PA6 EP, Questions 11 and 11.1.

66 Replies to Questionnaire Q.2 to Customers of PA6 EP, Question 12.

67 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 11, 12 and 12.1.

grades could be produced in one region and to be shipped in another, but this remains an exception."[68]

(49) Lastly, customers and competitors pointed again at significant price differences between the EEA and Asia, where PA6 EP prices would be significantly lower, further substantiating the existence of geographically separate markets.[69]

4.3.4. Conclusion

(50) In the light of the above, and in line with past practice, the Commission considers that markets for PA6 BP and PA6 EP, as well as potential segments thereof, are EEA-wide. However, for the assessment of this Transaction, it can be left open if markets are potentially wider, as no competition concerns arise under any plausible geographic market definition.

5. COMPETITIVE ASSESSMENT

5.1. Overview

(51) The Parties' activities give rise to horizontally affected markets for PA6 BP (and plausible segments of: (i) PA6 BP for EP; and (ii) PA6 BP film packaging) and PA6 EP (and plausible segments of: (i) PA6 EP for automotive applications; and (ii) PA6 EP for E&E applications) in the EEA.[70]

Table 1: Parties' market shares in PA6 BP and PA6 EP, 2021

		HPM	DEM	***Combined***
EEA	PA6 BP (sales)	[10-20]%	[5-10]%	***[20-30]%***
	PA6 BP (capacity)	[10-20]%	[5-10]%	***[20-30]%***
	PA6 EP (sales)	[10-20]%	[10-20]%	***[20-30]%***
Global	PA6 BP (sales)	[0-5]%	[0-5]%	***[0-5]%***
	PA6 BP (capacity)	[0-5]%	[0-5]%	***[0-5]%***
	PA6 EP (sales)	[5-10]%	[5-10]%	***[10-20]%***

Source: Form CO, Annex 15.

5.2. PA6 BP

5.2.1. The Notifying Party's view

(52) The Notifying Party submits that the Transaction will not give rise to non-coordinated effects on the market for PA6 BP in the EEA for the following reasons: (i) the Parties' combined market shares are low and therefore not indicative of concerns; (ii) the market for the production and supply of PA6 BP is

68 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 10.

69 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 14 and to Questionnaire Q.2 to Customers of PA6 EP, Question 14. The Commission understands that there are no technical barriers to transport PA6 EP over longer distances.

70 As well as a plausible combined market for PA6 / PA6.6 EP, as discussed in footnote 51 above.

highly fragmented with more than 20 suppliers active in the supply of PA6 BP in the EEA, most of which can produce all PA6 BP grades; (iii) PA6 BP is a commodity raw material for which there is limited scope for differentiation, thus all competitors offer products that are close substitutes; (iv) there are no high barriers to entry and/or expansion in the market for PA6 BP; and (v) the Targets' main customers across all end applications are large, well-established companies that can exercise countervailing buyer power against any hypothetical attempt to increase prices.[71]

(53) The Notifying Party further submits that the Transaction will not give rise to any coordinated effects on the market for PA6 BP in the EEA, given that: (i) the market is not highly concentrated and the different suppliers have asymmetric market positions and asymmetric capacities; (ii) customers are sophisticated and well-informed; (iii) there is no transparency with regard to price or production; and (iv) DEM is not a significant player in the market.[72]

5.2.2. The Commission's assessment

(54) In the EEA market for PA6 BP in 2021, the Parties had a combined market share of [20-30]% in sales and [20-30]% by capacity, with DEM bringing an increment of [5-10]% and [5-10]%, respectively. In a plausible segmentation by end application, in the EEA in 2021 the Parties would have a combined market share of [20-30]% (in sales, HPM [10-20]%, DEM [5-10]%) in PA6 BP for EP and of [30-40]%[73] (in sales, HPM [10-20]%, DEM [10-20]%) in PA6 BP for films.[74][75]

5.2.2.1. Non-coordinated effects

(55) The Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market or the functioning of the EEA Agreement as a result of horizontal non-coordinated effects in the market for PA6 BP (and the plausible segmentation by end application) in the EEA for the following reasons.

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71 Form CO, paragraphs 275-295.

72 Form CO, paragraphs 296-320.

73 Form CO, Tables 20 and 21.

74 The Commission notes that none of the Parties is active in the supply of PA6 BP for performance fibres (Form CO, Table 22).

75 The Parties' combined market share in the plausible market segment of PA6 BP for films in the EEA slightly exceeds 30%, resulting in a technically affected vertical relationship between HPM's caprolactam business, a monomer intermediate used for the production of PA6 BP (upstream) and PA6 BP for films in the EEA (downstream). However, no foreclosure concerns will be further discussed on the basis of the following considerations: (i) HPM produces caprolactam […], resulting in a merchant market share of [0-5]% globally and [0-5]% in the EEA. In a plausible market segmentation of caprolactam on the basis of different production methods previously considered by the Commission, HPM's merchant market share is [0-5]% globally and [10-20]% in the EEA. DEM is not active in caprolactam; (ii) the majority of competitors responding to the Commission's market investigation are also vertically integrated to caprolactam (Replies to Questionnaire Q.3 to Competitors for PA6 BP, Questions 27 and 28); (iii) the Parties will not have a significant degree of market power downstream, and PA6 BP for films is only part of an overall PA6 BP market; (iv) according to the Notifying Party, HPM has limited capacity to accommodate the entire demand of DEM post-Transaction. The Notifying Party submits that HPM could only make available its merchant sales volumes of […] plus small additional production volumes (which corresponds to approx. […]); (v) this vertical link is largely pre-existing, given that HPM is already vertically integrated in caprolactam. Form CO, Tables 10 and 11, and paragraphs 19, 116 and 403, and the Notifying Party's reply to RFI 7, dated 12 December 2022, Question 5(a).

(56) *First*, even though post-Transaction the Joint Entity will become the leading supplier of PA6 BP in the EEA, the Commission considers that it will nevertheless continue facing sufficient competitive pressure from a number of competitors. These competitors include Grupa Azoty ([10-20]% both in sales and by capacity), BASF ([10-20]% in sales and [20-30]% by capacity), Radici ([10-20]% in sales and [5-10]% by capacity), Aquafil ([10-20]% in sales and [5-10]% by capacity), Domo ([5-10]% both in sales and by capacity) and UBE ([0-5]% in sales and [5-10]% by capacity).[76] Market participants responding to the Commission's market investigation confirmed that these PA6 BP suppliers are considered to be relatively strong.[77]

(57) In addition, the Commission's market investigation suggested that supply and demand are generally balanced in the market for PA6 BP in the EEA.[78] The vast majority of customers have not experienced a PA6 BP shortage in the last three years, or if they have, only due to exceptional events, e.g. the COVID-19 pandemic or Russia's invasion of Ukraine, etc.

(58) Moreover, competitors responding to the Commission's market investigation noted that they are generally able to increase their production in order to supply additional demand, either because they have spare capacity or because they could increase their capacity in a short amount of time, e.g. through debottlenecking or bringing mothballed capacity online.[79] Two competitors explained that "[i]*n 2022, local capacities in EEA exceed local demand. In the past significant quantities were exported from EEA, mainly to Asia. Based on trade statistics, these export volumes declined significantly, due to the increase in cost of European production*", and "[t]*here is a huge oversupply of PA 6 BP since more or less 5 years.)*".[80]

(59) As regards the plausible segmentation of PA6 BP by end application in the EEA, the Commission considers that there will still remain a sufficient number of competitors in: (i) the market for PA6 BP for EP, including Grupa Azoty ([10-20]% market share in merchant sales), Domo ([10-20]% market share in merchant sales), BASF ([10-20]% market share in merchant sales), Radici ([5-10]% market share in merchant sales), Advansix ([5-10]% market share in merchant sales) and Nyobe NV ([5-10]% market share in merchant sales);[81] and (ii) the market for PA6 BP for films, including BASF ([30-40]% market share in merchant sales), Grupa Azoty ([10-20]% market share in merchant sales), UBE ([5-10]% market share in merchant sales) and Domo ([5-10]% market share in merchant sales).[82]

(60) The Commission further notes that all competitors responding to the Commission's market investigation are generally able to supply both PA6 BP for EP and PA6 BP for films.[83] The vast majority of customers responding to the Commission's market

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76 Form CO, Tables 17 and 19.

77 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 19, and to Questionnaire Q.4 to Customers of PA6 BP, Question 18.

78 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 16, and to Questionnaire Q.4 to Customers of PA6 BP, Question 14.

79 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 17.

80 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 16.1.

81 Form CO, Table 20.

82 Form CO, Table 21.

83 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 18.

investigation confirmed that post-Transaction, a sufficient number of suitable alternatives will remain in the EEA market of PA6 BP for both the production of EP and the manufacture of films.[84]

(61) *Second*, the results of the Commission's market investigation indicated that the Targets are not particularly close competitors in the supply of PA6 BP in the EEA. In particular, the majority of all respondents to the market investigation, both customers and competitors, indicated that HPM and DEM compete in the market but not closer than with the other competitors, such as Grupa Azoty, BASF and Domo.[85] This is further corroborated by the fact that nearly all competitors responding to the Commission's market investigation are generally able to produce all or most end applications of PA6 BP, i.e. for EP, for films and for fibres.[86] In addition, customers responding to the Commission's market investigation consider all manufacturers of PA6 BP as generally able to supply all types, while some of them explain that "*the base rec*[i]*pe is the same*" and "[a]*ll suppliers have a wide product portfolio*".[87]

(62) *Third*, the Commission's market investigation indicated that most PA6 BP customers deploy a multi-sourcing strategy of three or more suppliers, mostly for reasons of security of supply, price competition and significant volumes needed.[88] Therefore, the Commission considers that customers can easily switch among their main suppliers in a timely manner.

(63) In addition to that, the majority of customers responding to the Commission's market investigation confirmed that switching suppliers for PA6 BP is rather neutral or easy and would take either less than 6 months or less than 1 year, even for existing products/specifications.[89] As one customer put it, "[i]*t is not a big issue, because it's a standard Polymer*".[90] Other customers noted: "[n]*ot so many testing to check if new grade is OK or NOK*", "[j]*ust need to test the material in the machine and check the film internally and with customers*", and "[d]*epends of the market. Some of them require long procedure, some do not*".[91] Competitors responding to the Commission's market investigation also indicated that customers of PA6 BP are rather price-sensitive and would rather switch supplier in case of a price increase.[92] For example, one competitor noted that: "[t]*o the best of our knowledge, most short-term barriers, e.g., supplier qualification, can be overcome over time. In general, customers look for suppliers that provide competitive pricing*", while another one added: "*PA 6 BP is a commodity and lower selling price can cancel all barrier*".[93]

(64) *Fourth*, the majority of both customers and competitors responding to the Commission's market investigation expect the Transaction to have a neutral impact

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84 Replies to Questionnaire Q.4 to Customers of PA6 BP, Questions 20.1 and 20.3.

85 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Questions 20 and 21, and to Questionnaire Q.4 to Customers of PA6 BP, Questions 19 and 21.

86 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Questions 9 and 18.

87 Replies to Questionnaire Q.4 to Customers of PA6 BP, Questions 8 and 8.1.

88 Replies to Questionnaire Q.4 to Customers of PA6 BP, Question 15.

89 Replies to Questionnaire Q.4 to Customers of PA6 BP, Questions 24 and 25.

90 Reply to Questionnaire Q.4 to Customers of PA6 BP, Question 24.1.

91 Replies to Questionnaire Q.4 to Customers of PA6 BP, Question 24.1.

92 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Questions 24.1 and 25.1.

93 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 24.1.

on (i) the market for PA6 BP in the EEA; and (ii) their company.[94] The Commission's market investigation further indicated that post-Transaction a sufficient number of suitable alternatives will remain in the market for all types and end applications of PA6 BP in the EEA.[95]

5.2.2.2. Coordinated effects

(65) In some markets the structure may be such that firms would consider it possible, economically rational, and hence preferable, to adopt on a sustainable basis a course of action on the market aimed at selling at increased prices. A merger in a concentrated market may significantly impede effective competition, through the creation or the strengthening of a collective dominant position, because it increases the likelihood that firms are able to coordinate their behaviour in this way and raise prices, even without entering into an agreement or resorting to a concentrated practice.

(66) According to the Guidelines on the assessment of horizontal mergers, coordination is more likely to emerge in markets where it is relatively simple to reach a common understanding of the terms of coordination. In addition, three conditions are necessary for coordination to be sustainable. First, the coordinating firms must be able to monitor to a sufficient degree whether the terms of coordination are being adhered to. Second, discipline requires that there is some form of credible deterrent mechanism that can be activated if deviation is detected. Third, the reactions of outsiders such as current and future competitors not participating in the coordination, as well as customers, should not be able to jeopardise the results expected from the coordination.[96]

(67) The Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market due to coordinated effects in the market for PA6 BP (and the plausible segmentation by end application)[97] in the EEA for the following reasons.

(68) **It is unlikely that competitors are able to easily reach terms of coordination** for the following reasons. *First*, a sufficient number of credible competitors will remain in the market post-Transaction, which makes coordination difficult.[98] Based on market shares provided by the Notifying Party, a number of competitors with significant market shares for the sale of PA6 BP and its potential segments would remain present in the EEA, with a large number of smaller competitors also active in the market.[99] Furthermore, the majority of competitors for PA6 BP responding to

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94 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Questions 30.1 and 31, and to Questionnaire Q.4 to Customers of PA6 BP, Questions 28.1 and 29.

95 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 29.1, and to Questionnaire Q.4 to Customers of PA6 BP, Question 27.1.

96 Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (Horizontal Merger Guidelines), paragraphs 39 *et seqq*.

97 The Commission's file and the market investigation results do not contain any indication suggesting that the following assessment would not apply equally for each end application, *i.e.* PA6 BP for EP and PA6 BP for films.

98 Horizontal Merger Guidelines, paragraph 45: *"Generally, the less complex and the more stable the economic environment, the easier it is for the firms to reach a common understanding on the terms of coordination. For instance, it is easier to coordinate among a few players than among many. (...)"*

99 The Parties ([20-30]%) BASF ([20-30]%), Grupa Azoty ([10-20]%), Radici ([5-10]%), Domo ([5-10]%) and Aquafil ([5-10]%) in terms of capacity. Form CO, Table 19. A number of competitors

the market investigation indicated that they would have spare capacities or would be able to build additional capacities in a short amount of time.[100] Therefore, competitors not part of potential coordination could increase their production and supply of additional customers. *Second*, competitors active in the market are asymmetric in terms of vertical integration. Upstream, many, but not all competitors for PA6 BP are active in the production of caprolactam. There is also heterogeneity upstream of caprolactam in the production of ammonia. Downstream, players each have different market positions in the market for PA6 EP.[101] This heterogeneity in terms of vertical integration and market position both upstream and downstream results in reduced alignment of incentives, making coordination more difficult.

(69) **It is unlikely that competitors can easily monitor deviations**, for the following reasons. *First*, a sufficient number of competitors remain in the market post-Transaction, as described in paragraph 68 above, which may be indicative of a lower level of transparency.[102] *Second*, competitors do not have full visibility as regards price levels in the market as prices for PA6 BP are typically negotiated bilaterally between suppliers and customers on a regular (*e.g.* monthly, annually) basis.[103] The Commission notes that some market indices provide benchmark prices for PA6 BP,[104] however these are only the basis for such bilateral negotiations. *Third*, competitors have limited visibility as to production levels and volumes supplied to the merchant market. Competitors active in the production of PA6 BP are typically also active in the downstream production of PA6 EP, and therefore part of their production is captive and thus not sold on the merchant market.

(70) **Potential reactions of outsiders and customers.** *First*, as explained in paragraph 62 above, customers typically multisource from more than one supplier, and often three or more, as confirmed through the Commission's market investigation Some respondents explain this strategy with the aim to create competition between different potential suppliers.[105] Therefore, customers can shift the sourcing of volumes of PA6 BP, at least to a certain degree, from one competitor to the other, incentivising the competitors to deviate from any plausible terms of coordination by offering lower prices and trying to win new customers. *Second*, most competitors responding to the market investigation indicated that they have spare capacity, or would be able to increase capacity through debottlenecking or by bringing mothballed capacity online.[106] Therefore, non-coordinating firms would likely have the ability to increase capacities, and therefore defeat potential attempts by coordinating firms to decrease capacity in the market.

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would remain active in the potential segments PA6 BP for EP (the Parties, BASF, Grupa Azoty, Domo, Radici, Nyobe) and PA6 BP for films (the Parties, BASF, Grupa Azoty, Ube, Domo, Nurel); Form CO, Tables 20 and 21.

100 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 17.

101 Form CO, Tables 12, 19, 25.

102 Horizontal Merger Guidelines, paragraph 48: *"Transparency in the market is often higher, the lower the number of active participants in the market. (...)"*

103 Replies to Questionnaire Q.4 to Customers of PA6 BP, Question 16.

104 Form CO, paragraph 231.

105 Replies to Questionnaire Q.4 to Customers of PA6 BP, Questions 15 and 15.1

106 Replies to Questionnaire Q.3 to Competitors of PA6 BP, Question 17.

5.2.3. Conclusion

(71) On the basis of the above considerations, and all evidence available to it, the Commission concludes that the Transaction does not raise serious doubts as to its compatibility with the internal market or the functioning of the EEA Agreement in relation to the supply of PA6 BP (and the plausible segmentation by end application, *i.e.* PA6 BP for EP and PA6 BP for films) in the EEA.

5.3. PA6 EP

(72) As stated in paragraph 11 above, both DEM and HPM produce PA6 EP and sell it across all end-use applications.

5.3.1. The Notifying Party's view

(73) The Notifying Party submits that the Transaction will not give rise to concerns in the market for PA6 EP for the following reasons:[107]

(74) *First*, the Notifying Party argues that the Parties' combined market share of [20-30]% (merchant sales) in PA6 EP in the EEA is not capable to give rise to competition concerns as it is only just above 25%.[108]

(75) *Second*, the market for the manufacturing and supply of PA6 EP is fragmented with a multitude of credible suppliers such as BASF, Domo and EMS, able to offer the same quality and type of PA6 EP and serve the same breadth of end-applications as the Targets. Most of these suppliers (such as BASF, Domo, Ube, EMS and Kingfa) are backward integrated into caprolactam (main input for PA6 BP, which is the main input for PA6 EP) and therefore enjoy the same cost advantages as HPM and DEM.

(76) *Third*, the Notifying Party argues that all suppliers in the EEA are in a comparable position with respect to price, quality and reliability of supply and that they are not each other's closest or particularly close competitors in the supply of PA6 EP. They rather argue that both Targets face most competition from BASF, the clear market leader in the EEA.

(77) *Fourth*, according to the Notifying Party, there are no expansion constraints because there is ample spare compounding capacity, with the estimated EEA-wide utilisation of compounding capacity for the production of PA6 EP standing at below 50%.[109] Moreover, it is not particularly costly or time-consuming to add new compounding capacity. As such, competitors can easily increase output in response to a hypothetical price increase. In addition, it is noted that there are no particularly high entry barriers either from a product or geographical perspective and even *de novo* entry is possible given the relatively limited costs of entry, especially for those suppliers that are already active in the upstream market for PA6 BP globally in Europe.

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107 Form CO, paragraphs 322 *et seqq*.

108 Horizontal Merger Guidelines, paragraph 18.

109 This is based on an EEA compounding capacity market size in 2021 of 2,190kt, and combined merchant market sales of PA 6 EP, PA 6.6 EP and PBT EP of 1,133kt (which the Parties consider to be a reasonable proxy for compounding production). This gives an estimated market-wide utilisation rate of 48% in 2021.

(78) *Fifth*, the Targets' main customers across all end-use applications are large, well-established companies that can exercise countervailing buyer power against any hypothetical attempt by the Joint Entity to increase prices post-merger.

(79) *Sixth*, even if the market for PA6 EP were further segmented by end-use application, the Transaction would still not lead to higher prices in any of these segments mainly due to the existence of credible competitors in the automotive and E&E segments in which the Parties' market share exceed [30-40]% (merchant sales) and [30-40]% (merchant sales) respectively.

5.3.2. The Commission's assessment

5.3.2.1. Non-coordinated effects

(80) The Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market or the functioning of the EEA Agreement as a result of horizontal non-coordinated effects in the market for PA6 EP (and the plausible segmentation by end application) in the EEA for the following reasons.

(81) *First*, even though the Parties' market shares post-Transaction will not be insignificant ([20-30]% in terms of sales at EEA-wide level), the results of the Commission's market investigation confirmed that post-Transaction there will be a sufficient number of credible PA6 EP competitors left on the market that will continue to exert sufficient competitive pressure on the Parties.[110] These competitors include BASF ([30-40]% in sales in the EEA), Domo ([10-20]% in sales in the EEA), EMS ([5-10]% in sales in the EEA), Ube Industries ([0-5]% in sales in the EEA), Radici ([0-5]% in sales in the EEA).[111] The results of the market investigation suggest that all of these players are credible competitors.[112]

(82) The market shares of the Parties' main competitors for PA6 EP in an EEA-wide market are presented in Table 2 below.

110 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 34 and to Questionnaire Q.2 to Customers of PA 6EP, Question 28.

111 Form CO, Annex 15.

112 Replies to Questionnaire Q.1 to Competitors of PA 6 EP, Question 19 and to Questionnaire Q.2 to Customers of PA 6 EP, Question 19.

Table 2: Market shares in PA6 EP at EEA-wide level, based on sales volumes, 2021

Competitor	Volume in kt	Market share
DEM	[…]	[10-20]%
HPM	[…]	[10-20]%
Combined	***[…]***	***[20-30]%***
BASF	[…]	[30-40]%
Domo	[…]	[10-20]%
EMS	[…]	[5-10]%
Ube industries	[…]	[0-5]%
Radici	[…]	[0-5]%
Polyone	[…]	[0-5]%
Lyondellbasell/A.Schulman	[…]	[0-5]%
Ravago	[…]	[0-5]%
Grupa Azoty	[…]	[0-5]%
Sirmax	[…]	[0-5]%
Other[113]	[…]	[5-10]%
Total	**[…]**	**100%**

Source: Form CO, Annex 15.

(83) In addition, the majority of both competitors and customers that responded to the market investigation indicated that supply exceeds demand of PA6 EP in the EEA, with competitors specifically noting that: "*for the last ten years there has been enough compounding capacity in Europe*" and that "*there is always enough compounding capacity to fulfill the demand for Engineering Plastics*".[114] The vast majority of customers suggested that any shortages of PA6 EP experienced in the last three years were due to exceptional events, e.g. the COVID-19 pandemic, Russia's invasion of Ukraine, etc.[115] Furthermore, the vast majority of competitors responding to the market investigation noted that they have spare capacity and are generally able to increase their production in order to supply additional demand of PA6 EP.[116]

(84) Even considering further segmentations of the market for PA6 EP by end-application, in which the Parties would have significant market shares ([30-40]% in PA6 EP in automotive in terms of merchant sales and [30-40]% in E&E in terms of merchant sales),[117] the market would remain sufficiently competitive. In

113 The category of "*Others*" comprises of all suppliers with market share of below [0-5]%, among which Kingfa, Toray, Teknor Apex, Albis, etc.

114 Replies to Questionnaire Q.1 to Competitors of PA 6 EP, Question 15 and to Questionnaire Q.2 to Customers of PA 6 EP, Question 15.

115 Replies to Questionnaire Q.1 to Competitors of PA 6 EP, Question 17 and to Questionnaire Q.2 to Customers of PA 6 EP, Question 17.

116 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 17.

117 The Parties' combined market share in the potential market segments of PA6 EP for automotive and E&E applications in the EEA exceeds 30%, resulting in the technically affected vertical relationships between (A) glass fibre (upstream) and PA 6 EP for automotive and E&E applications (downstream) and (B) PA6 BP (upstream) and PA 6 EP for automotive and E&E applications (downstream). However, the Commission considers that no foreclosure concerns will arise on the basis of the following considerations: In relation to (A) (i) Only HPM is active in the production of glass fibre (and it only produces DUCS, *i.e.* basic strands of treated glass fibre filaments used to reinforce thermoplastic and thermoset resins, mainly sold to compounders who use the compounds to mould parts for automotive, business equipment components, domestic appliance components, and casings for power tools, casings for televisions or sporting goods), which it produces mainly for captive use,

automotive, the Parties will face competitive constraints by significant players such BASF ([30-40]%), Domo ([10-20]%), EMS ([0-5]%) and Kingfa ([0-5]%). Similarly, when it comes to a plausible segment of E&E, the market consists of a multitude of competitors such as BASF ([30-40]%), Domo ([10-20]%), independent compounders ([5-10]%), EMS ([5-10]%) and Kingfa ([0-5]%).[118] In addition, the majority of customers that responded to the market investigation have indicated that that all suppliers are generally suitable for the supply of PA6 EP in both automotive and E&E applications,[119] and that post-Transaction sufficient alternatives will remain in the market to provide all types of PA6 EP in the EEA and globally.[120]

(85) *Second*, the results of the market investigation indicate that the Targets are not particularly close competitors in the manufacturing and supply of PA6 EP in the EEA, as they do not compete more closely with each other than with other competitors.[121] Customers responding to the market investigation attribute comparable competitive strengths in the manufacturing and supply of PA6 EP to HPM, DEM, BASF and Domo, and further name Radici as a comparably competitive supplier.[122] A lack of particular closeness is further substantiated by feedback from competitors, who ranked BASF as closest competitor to each of HPM and DEM, and further indicated that Domo would compete equally close with HPM and DEM than the two with each other.[123] In addition, the lack of particular closeness becomes evident by the fact that all competitors responding to the Commission's market investigation are generally able to supply PA6 EP for most end-use applications,[124] i.e. for automotive, E&E and specialized grades.[125]

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resulting in a merchant market share of [0-5]% globally and [0-5]% in the EEA; (ii) there are several suppliers of glass fibre with substantial positions in the merchant market in the EEA, such as NEG ([30-40]%), Jushi ([10-20]%), 3B ([10-20]%), OCV ([10-20]%) and JM ([5-10]%), which would invalidate any potential input foreclosure strategy; (iii) customer foreclosure would be equally impossible considering HPM's limited market shares and the fact that DEM's purchases account for only a small proportion of the merchant market ([0-5]% in the EEA and [5-10]% globally) and withdrawing such purchases from the merchant market would be unlikely to have a material impact on the position of any glass fibre suppliers (Notifying Party's reply to RFI 7, dated 12 December 2022, Questions 3(b)-(c) and 5(b)). In relation to (B): (i) The Parties' combined merchant market share for PA 6 BP in 2021 is [20-30]% in the EEA, and [0-5]% globally; (ii) there are several significant alternative equivalent suppliers of PA6 BP in the EEA (see paragraph 56 above) with spare capacity; (iii) the Targets are not important customers for PA 6 BP, since they are both vertically integrated and only purchase small amounts of PA 6 BP from third parties; and (iv) the amount of PA 6 BP demand that the Parties could potentially remove from the merchant market is limited (as their combined spare capacity amounts to [5-10]% in the EEA) (Notifying Party's reply to RFI 7, dated 12 December 2022, Question 5(c)).

118 Form CO, Annex 15. Market shares are provided on the basis of merchant sales.

119 Replies to Questionnaire Q.2 to Customers of PA6 EP, Question 20. See also Replies to Questionnaire Q.1 to Competitors, Question 18, whereby all of the respondents indicated that they all supply for the following end-applications: automotive, E&E and specialized grades.

120 Replies to Questionnaire Q.1 to Competitors of PA 6 EP, Question 34 and to Questionnaire Q.2 to Customers of PA 6 EP, Question 28.

121 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 22 and to Questionnaire Q.2 to Customers of PA6 EP, Questions 19, 19.1 and 22.

122 Replies to Questionnaire Q.2 to Customers of PA6 EP, Question 19.

123 One competitor indicated that BASF, HPM and DEM would focus on the automotive market and would compete closely with each other for such projects. Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 20.1.

124 Following concerns raised during the market investigation, in relation to the diminution of competition post-Transaction in certain niche applications of PA6 EP used for hydrogen tanks for cars, the Commission notes that no competition concerns would arise under this potential market segment considering that: (i) the Parties would have a combined market share of below [10-20]%

Similarly, customers responding to the Commission's market investigation consider all suppliers of PA6 EP (as seen on Table 2) as generally able to supply PA6 EP for most end-use applications.[126]

(86) *Third*, the Commission's market investigation indicated that customers multisource the supply of PA6 EP from more than one supplier, mostly for reasons of security of supply, with the majority of customers indicating that they normally maintain more than three qualified suppliers.[127] In that respect, a competitor specifically indicated that: "*Most of customers using such materials have already qualified several sources during the life-cycle and can switch faster"*.[128] Therefore, the Commission considers that customers are generally able to switch among their main suppliers.

(87) *Fourth*, the majority of both customers and competitors responding to the Commission's market investigation expect the Transaction to have a neutral impact on: (i) the market for PA6 EP in the EEA; and (ii) their company.[129] The Commission's market investigation further indicated that post-Transaction a sufficient number of suitable alternatives will remain in the market for all types and end applications of PA6 EP in the EEA and globally.[130]

5.3.2.2. Coordinated effects

(88) The Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market or the functioning of the EEA Agreement as a result of coordinated effects in the market for PA6 EP (and the plausible segmentation by end application)[131] in the EEA for the following reasons.[132]

(89) *First*, PA6 EP is a heterogeneous product with high number of various grades with different product specifics, which makes coordination less easy compared to

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under such a potential market segment in the EEA and globally; (ii) PA 6 EP that is suitable for use in hydrogen tanks is readily available from many PA6 EP suppliers. According to the Notifying Party and as confirmed by the Commission's investigation, there are many strong competitors that are able to supply this application segment, including BASF, Ube, Toray and Domo, alongside independent compounders; and (iii) all PA6 EP grades for use in hydrogen tanks can and are used in every production method and these grades can also be used in many other applications unrelated to hydrogen tanks. In fact, according to the Notifying Party, the same grades that the Targets sell for use in hydrogen tanks are also sold for use in a variety of other end-products across automotive, E&E and specialised industries segments (Notifying Party's reply to RFI 8, dated 14 December 2022 and Replies to Request for Information to Competitors, dated 14 December 2022).

125 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 18.

126 Replies to Questionnaire Q.2 to Customers of PA6 P, Question 20.

127 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Questions 16 and 28 and to Questionnaire Q.2 to Customers of PA6 EP, Questions 16 and 16.1.

128 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 28.

129 Replies to Questionnaire Q.1 to Competitors of PA 6 EP, Questions 35 and 36 and to Questionnaire Q.2 to Customers of PA 6 EP, Questions 29 and 30.

130 Replies to Questionnaire Q.1 to Competitors of PA 6 EP, Question 34 and to Questionnaire Q.2 to Customers of PA 6 EP, Question 28.

131 The Commission's file and the market investigation results do not contain any indication suggesting that the following assessment would not apply equally for each end application, *i.e*. PA6 EP for automotive applications and PA6 EP for E&E applications.

132 Form CO, paragraphs 380-384.

homogenous products.[133] A significant share of customers responding to the market investigation even indicate to source a grade of PA6 EP which was specifically developed for the needs of the company.[134] The Commission considers that for such products, the cost structure including customer-specific development costs, is not transparent to competitors, and therefore the ability to coordinate is more limited. Furthermore, customers indicate that prices for PA6 EP are typically negotiated between the customer and the supplier,[135] and the Commission therefore considers that competitors do not have full visibility regarding the pricing structure of competitors.

(90) *Second*, it is unlikely that competitors are able to easily arrive at a common perception as to how the coordination should work, as their asymmetric market positions in the market for PA6 EP in the EEA would make it difficult to reach a common understanding on the terms of coordination.[136] As explained in paragraphs (81)-(83) above, a number of PA6 EP suppliers are active in the EEA who are able to increase their output to supply additional customers. According to information provided by the Notifying Party, the EEA-wide utilisation of compounding capacity for the production of PA6 EP is below 50%.[137] This is further substantiated by results of the market investigation, as the majority of PA6 EP suppliers responding to the Commission's market investigation indicated that they would have spare capacity to produce additional volumes of PA6 EP.[138]

(91) *Third*, competitors active in the market are asymmetric also in terms of vertical integration. HPM is the only supplier vertically integrated into glass fibre.[139] Most, but not all suppliers are vertically integrated into PA6 BP[140] but also procure some quantities in the merchant market. This heterogeneity in terms of vertical integration results in reduced alignment of incentives between suppliers, making coordination more difficult.[141]

(92) *Fourth*, the Commission notes that coordination is easier when demand and supply conditions are relatively stable than when they are continuously changing.[142] As discussed above, capacity is flexible and suppliers can easily adjust compounding capacity.[143] In addition, customers differ in terms of their size, requirements, and regional presence, as suggested by the Commission's market investigation, and they typically multisource from more than three suppliers.[144] Therefore, customers can shift the sourcing of volumes of PA6 EP, at least to a certain degree, from one competitor to the other, incentivising the competitors to compete rigorously.

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133 Horizontal Merger Guidelines, paragraph 45: *"(...) It is also easier to coordinate on a price for a single, homogeneous product, than on hundreds of prices in a market with many differentiated products. (...)"*

134 Replies to Questionnaire Q.2 to Customers of PA6 EP, Question 8.

135 Minutes of a call with a customer of 21 September 2022, paragraph 10; Minutes of call with a customer of 20 September 2022, paragraph 15.

136 Horizontal Merger Guidelines, paragraphs 44 *et seqq*.

137 Form CO, paragraph 343.

138 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 17.

139 Form CO, Table 14.

140 Form CO, Table 20.

141 Horizontal Merger Guidelines, paragraph 48.

142 Horizontal Merger Guidelines, paragraph 45.

143 Replies to Questionnaire Q.1 to Competitors of PA6 EP, Question 17.

144 Replies to Questionnaire Q.2 to Customers of PA6 EP, Question 16.

5.3.3. Conclusion

(93) On the basis of the above considerations, and all evidence available to it, the Commission concludes that the Transaction does not raise serious doubts as to its compatibility with the internal market or the functioning of the EEA Agreement in relation to the supply of PA6 EP (and the plausible segmentation by end application, *i.e.* PA6 EP for automotive applications and PA6 EP for E&E applications) in the EEA.

6. CONCLUSION

(94) For the above reasons, the European Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(Signed)
Margrethe VESTAGER
Executive Vice-President