Case M.10432 - PTTGC/ALLNEX

Only the English text is available and authentic.

REGULATION (EC) No 139/2004 MERGER PROCEDURE

Article 6(1)(b) NON-OPPOSITION

Date: 06/12/2021

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EUROPEAN COMMISSION



Brussels, 6.12.2021 C(2021) 9065 final

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 Where possible the information omitted has been replaced by ranges of figures or a general description.

PTT Global Chemical Public Company Limited 555/1 Energy Complex, Building A, 14th-18th Floor, Vibhavadi Rangsit Road, Chatuchak 10900 Bangkok Thailand

Subject: Case M.10432 – PTTGC / Allnex

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 Area²

Dear Sir or Madam,

(1) On 29 October 2021, the European Commission received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which PTT Global Chemical Public Company Limited ("PTTGC" or the "Notifying Party", Thailand) intends to acquire within the meaning of Article 3(1)(b) of the Merger Regulation

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 (the "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").

sole control of Allnex Holding GmbH ("Allnex", Germany) (the "Transaction").³ PTTGC and Allnex are designated hereinafter as the "Parties".

1. THE PARTIES

- (2) PTTGC is a group of companies active worldwide in the development, manufacture and supply of petrochemical and chemical products. The product portfolio includes petroleum, petrochemical and by-products that are converted into various chemicals and basic feedstock for downstream industries. PTTGC is solely controlled by PTT Public Company Limited, ("PTT", Thailand). PTT is listed on the Stock Exchange of Thailand and is 51.11% owned by the Thai Ministry of Finance.
- (3) Allnex is the parent company of a group of companies active in the development, production and supply of synthetic industrial coating resins. It is currently controlled by Advent International Corporation (US).

2. THE CONCENTRATION

(4) By an "Agreement for the Sale and Purchase of Allnex Holding GmbH" (the "SPA"), signed on 10 July 2021, between Advent International Corporation and PTT GC International (Netherlands) B.V. (the Netherlands), a wholly owned subsidiary of PTTGC, PTTGC acquires the entire share capital of Allnex. Thereby PTTGC acquires sole control over the whole of Allnex.

3. Union Dimension

(5) The undertakings concerned have a combined aggregate worldwide turnover of more than EUR 5 000 million (PTT: EUR 47 016 million; Allnex: EUR [...] million in 2020). Each of them has a Union-wide turnover in excess of EUR 250 million (PTT: EUR [...] million; Allnex: EUR [...] million in 2020), 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

(6) PTTGC is active in the manufacture of various chemicals and basic feedstock for downstream industries. Allnex sources some of these products for the production of synthetic resin products. The Transaction therefore gives rise to markets that are affected by virtue of the vertical links between PTTGC products upstream and Allnex's products downstream. Table 1 shows the reportable vertical links resulting from the Transaction.

Table 1: Reportable vertical links as a result of the Transaction

Downstream product (Allnex)	Upstream product (PTTGC)		
Solventborne acrylics	Methyl methacrylate (MMA)		

Publication in the Official Journal of the European Union No C 453, 9.11.2021, p. 4.

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

Downstream product (Allnex)	Upstream product (PTTGC)
Solventborne acrylics	Bisphenol-A (BPA)
Solventborne acrylics	Fatty acids from palm and tallow oil
Solventborne acrylics	Xylene
Solventborne acrylics	Toluene
Solventborne acrylics	Styrene monomer
Solventborne acrylics	Glycerol
Solventborne alkyds / polyesters	Toluene di-isocyanate (TDI)
Solventborne alkyds / polyesters	Methyl methacrylate (MMA)
Solventborne alkyds / polyesters	Purified terephthalic acid (PTA)
Solventborne alkyds / polyesters	Mono-ethylene glycol (MEG)
Solventborne alkyds / polyesters	Di-ethylene glycol (DEG)
Solventborne alkyds / polyesters	Fatty acids from palm and tallow oil
Solventborne alkyds / polyesters	Xylene
Solventborne alkyds / polyesters	Toluene
Solventborne alkyds / polyesters	Styrene monomer
Solventborne alkyds / polyesters	Glycerol
Solventborne epoxies	Phenol
Solventborne epoxies	Bisphenol-A (BPA)
Solventborne epoxies	Fatty acids from palm and tallow oil
Solventborne epoxies	Xylene
Solventborne epoxies	Styrene monomer
Solventborne unsaturated polyesters	Methyl methacrylate (MMA)
Solventborne unsaturated polyesters	Mono-ethylene glycol (MEG)
Solventborne unsaturated polyesters	Di-ethylene glycol (DEG)
Solventborne unsaturated polyesters	Bisphenol-A (BPA)
Solventborne unsaturated polyesters	Fatty acids from palm and tallow oil
Solventborne unsaturated polyesters	Xylene
Solventborne unsaturated polyesters	Toluene
Solventborne unsaturated polyesters	Styrene monomer
Waterborne acrylics	Toluene di-isocyanate (TDI)
Waterborne acrylics	Methyl methacrylate (MMA)
Waterborne acrylics	Fatty acids from palm and tallow oil
Waterborne acrylics	Xylene
Waterborne acrylics	Toluene
Waterborne acrylics	Styrene monomer
Waterborne alkyds / polyesters	Isophorone diisocyanate (IPDI)
Waterborne alkyds / polyesters	Toluene di-isocyanate (TDI)
Waterborne alkyds / polyesters	HDI derivatives
Waterborne alkyds / polyesters	Methyl methacrylate (MMA)
Waterborne alkyds / polyesters	Ethanolamines (EOA)
Waterborne alkyds / polyesters	Bisphenol-A (BPA)
Waterborne alkyds / polyesters	Fatty acids from palm and tallow oil
Waterborne alkyds / polyesters	Xylene
Waterborne alkyds / polyesters	Toluene
Waterborne alkyds / polyesters	Styrene monomer
Waterborne epoxies	Ethanolamines (EOA)
Waterborne epoxies	Bisphenol-A (BPA)
Waterborne epoxies	Fatty acids from palm and tallow oil

Downstream product (Allnex)	Upstream product (PTTGC)		
Waterborne epoxies	Xylene		
Waterborne epoxies	Toluene		
Waterborne epoxies	Styrene monomer		
Waterborne polyurethane dispersions	Isophorone diisocyanate (IPDI)		
Waterborne polyurethane dispersions	Toluene di-isocyanate (TDI)		
Waterborne polyurethane dispersions	Methyl methacrylate (MMA)		
Waterborne polyurethane dispersions	Ethanolamines (EOA)		
Waterborne polyurethane dispersions	Fatty acids from palm and tallow oil		
Waterborne polyurethane dispersions	Xylene		
Waterborne polyurethane dispersions	Toluene		
Waterborne polyurethane dispersions	Styrene monomer		
Cathodic electrodeposition resins	Methyl methacrylate (MMA)		
Radcure – monomers/oligomers/acrylates	Hexamethylene diisocyanate (HDI)		
Radcure – monomers/oligomers/acrylates	Isophorone diisocyanate (IPDI)		
Radcure – monomers/oligomers/acrylates	Toluene di-isocyanate (TDI)		
Radcure – monomers/oligomers/acrylates	HDI derivatives		
Radcure – monomers/oligomers/acrylates	Methyl methacrylate (MMA)		
Radcure – monomers/oligomers/acrylates	Mono-ethylene glycol (MEG)		
Radcure – monomers/oligomers/acrylates	Di-ethylene glycol (DEG)		
Radcure – monomers/oligomers/acrylates	Bisphenol-A (BPA)		
Radcure – monomers/oligomers/acrylates	Glycerol		
Radcure waterborne UV PUD	Hexamethylene diisocyanate (HDI)		
Radcure waterborne UV PUD	Isophorone diisocyanate (IPDI)		
Radcure waterborne UV PUD	Methyl methacrylate (MMA)		
Radcure waterborne UV PUD	Styrene monomer		
Radcure waterborne UV PUD	Glycerol		
Radcure – glass laminates	Isophorone diisocyanate (IPDI)		
Polyester powders	Purified terephthalic acid (PTA)		
Polyester powders	Mono-ethylene glycol (MEG)		
Polyester powders	Di-ethylene glycol (DEG)		
Polyester powders	Glycerol		
Powder coatings UV-curable resins	Purified terephthalic acid (PTA)		
Amino Resins	Mono-ethylene glycol (MEG)		
Amino Resins	Xylene		
Amino Resins	Toluene		
Crosslinkers phenolic resins	Phenol		
Crosslinkers phenolic resins	Xylene		
Additives	Hexamethylene diisocyanate (HDI)		
Additives	Toluene di-isocyanate (TDI)		
Additives	HDI derivatives		
Additives	Methyl methacrylate (MMA)		
Additives	Purified terephthalic acid (PTA)		
Additives	Mono-ethylene glycol (MEG)		
Additives	Di-ethylene glycol (DEG)		
Additives	Ethanolamines (EOA)		
Additives	Phenol		
Additives	Bisphenol-A (BPA)		
Additives	Xylene		
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Downstream product (Allnex)	Upstream product (PTTGC)		
Additives	Styrene monomer		

Source: Annex 6 to the Form CO.

(7) Out of all these reportable vertical links, the majority is not affected under any plausible product or geographic market definition, as both PTTGC's and Allnex's market shares remain well under 30%. However, for three downstream products Allnex's market shares exceed 30% in the EEA, leading to 11 affected vertical links by virtue of Allnex's market position downstream. Figure 1 below provides an overview of the relevant affected product markets assessed in this Decision.

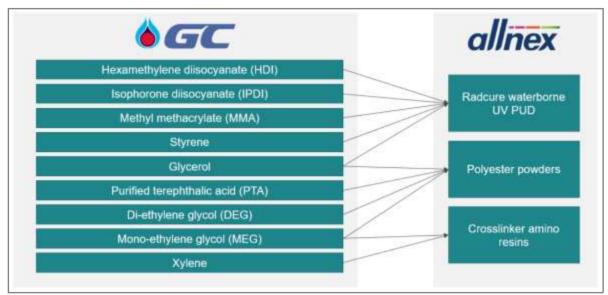


Figure 1: Products for which the Transaction gives rise to affected vertical links Source: Diagram based on data provided in Annex 6 to the Form CO.

(8) This section will discuss the relevant product and geographic markets for the affected products set out in Figure 1, starting with the downstream products and followed by the upstream products.

4.1. Downstream markets

4.1.1. Coating resins

(9) Resins are essential elements of coating formulations.⁵ They bind the various components of a coating together into a film and bond the film to the substrate (e.g. in a car door, a piece of wooden furniture or the exterior of a fridge). Additionally, they determine the performance characteristics of the coatings, such as gloss, durability, smoothness, flexibility, weatherability and resistance.

A coating is a preparation that is used to provide a film with decorative, protective or other functional effect on a surface.

4.1.1.1. Relevant product markets

- (10) The Commission has previously considered a segmentation of the relevant product market for the supply of coating resins by (i) delivery technology, (ii) chemistry and (iii) industrial application.⁶
 - (a) **Delivery technology.** A segmentation by delivery technology distinguishes between the following categories of coating resins: (i) liquid resins that can be further segmented into solvent borne and waterborne resins, (ii) radiation curable resins ("radcure") and (iii) powder resins. The Commission considered that liquid, radcure and powder resins differ from one another in terms of production process, the way they are applied to the substrate, the curing time, the residue they leave behind and their environmental friendliness and are not substitutable with one another and constitute separate markets.
 - (b) **Chemistry.** A segmentation by chemistry distinguishes coating resins by reference to the base chemical compound of the resin. Common chemistries of coating resins include acrylics, alkyds, epoxies, polyurethanes and polyesters or hybrids thereof, comprising two or more such chemistries. Different base chemicals impart different performance characteristics to the coating, and the chemistry that a resin manufacturer and its customers choose is generally driven by the requirements of the coating's intended industrial application.
 - (c) Industrial application. By reference to the industrial application, the Commission has previously considered segmenting coating resins into: (i) Automotive OEM; (ii) Automotive refinish; (iii) Industrial Wood; (iv) Coil and pre-coated metals; (v) Other Industrial uses; (vi) Marine; (vii) Special Purpose; (viii) Packaging; (ix) Architectural; and (x) Adjacent coating and non-coating applications While considering it appropriate to segment the market for coating applications by industrial applications as well, the Commission left the market open.
- (11) The Notifying Party agrees with the Commission's decisional practice concerning a market segmentation of the coating resins market by delivery technology and by chemistry but submits that a segmentation by industrial application is not relevant, mainly because the nexus of the case lies on vertical relationships. According to the Notifying Party, a specific resin (segmented by delivery method and chemistry) uses the same inputs regardless of its ultimate industrial use. The Commission's market investigation did not give any grounds to depart from the Commission's recent decisional practice in this respect.
- (12) For the purposes of this Decision, it is not necessary to further explore a narrower product market by industrial application, as the focus of the competitive assessment is potential customer foreclosure and Allnex's shares of demand are already minimal considering the current broader product markets downstream (see Table 4 to Table 6 below). Under such a potential narrower product market, for which the input

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⁶ Case M.10006 – Covestro / Koninklijke DSM (Resins & Functional Materials Business and Other Assets), paragraph 13.

⁷ Form CO, paragraphs 243-246.

products would be the same, the same arguments would apply and the possibility of customer foreclosure would be even more remote. The issue of a potential segmentation of coating resins by industrial application can therefore be left open.

Therefore, based on the Commission's previous decisions, its market investigation, (13)and the Notifying Party's arguments, the Commission considers that for the purpose of this Decision separate coating resins markets exist segmented by delivery technology and chemistry. The vertically affected product markets within coating resins are therefore (i) radcure waterborne ultra-violet polyurethane dispersion ("UV PUD") and (ii) polyester powders.

4.1.1.2. Relevant geographic market

The Commission has previously considered that the appropriate geographic market for coating resins is either EEA-wide or worldwide.8 In line with the Commission's previous decisional practice, the Notifying Party considers that the appropriate geographic scope is likely worldwide and at least EEA-wide.⁹ The Commission's market investigation did not give any grounds to depart from the Commission's recent decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.1.2. Crosslinkers

Crosslinkers are hardeners that are frequently used in coating formulations to create bonds between the resin molecule chains to solidify a coating and enhance its performance. Crosslinkers are mixed with coating resins and other coating components in a coating formulation. After application of the coating and evaporation of the solvent, the cross-linking reaction takes place at ambient or increased temperature.

4.1.2.1. Relevant product markets

- (16)The Commission has previously identified two types of crosslinkers on the basis of chemistry: (i) crosslinkers amino resins, and (ii) crosslinkers phenolic resins. Regarding crosslinkers phenolic resins, a further distinction has been made between liquid phenolics (resols) and solid phenolics (novolacs). The Commission has also assessed separate markets for polyisocyanate crosslinkers produced on the basis of hexamethylene diisocyanate ("HDI"), namely aziridines crosslinkers carbodiimide crosslinkers. 10
- For crosslinkers amino resins and crosslinkers phenolic resins, the Commission has previously considered a further possible segmentation distinguishing between the same industrial applications as for coating resins. 11 The Commission's market

Form CO, paragraph 247.

Case M.10006 - Covestro / Koninklijke DSM (Resins & Functional Materials Business and Other Assets), paragraph 23.

¹⁰ Case M.10006 - Covestro / Koninklijke DSM (Resins & Functional Materials Business and Other Assets), paragraph 26.

¹¹ Case M.10006 - Covestro / Koninklijke DSM (Resins & Functional Materials Business and Other Assets), paragraph 27.

- investigation did not give any grounds to depart from the Commission's recent decisional practice in this respect.
- (18) The Notifying Party agrees with the Commission's decisional practice concerning a market segmentation of crosslinkers into the markets set out above, but submits that a segmentation by industrial application is not relevant.¹²
- (19) For the purpose of this Decision, it is not necessary to further explore narrower product markets by industrial application, as the focus of the competitive assessment is potential customer foreclosure and Allnex's shares of demand are already minimal considering the current broader product markets downstream (see Table 4 to Table 6 below). Under such a potential narrower product market, for which the input products would be the same, the same arguments would apply and the possibility of customer foreclosure would be even more remote. The issue of a potential segmentation of crosslinkers by industrial application can therefore be left open.
- (20) Therefore, based on the Commission's previous decisions, its market investigation and the Notifying Party's arguments, the Commission considers that for the purpose of this Decision separate crosslinkers exist segmented by delivery technology and chemistry. The only vertically affected market within crosslinkers is thus crosslinkers amino resins.

4.1.2.2. Relevant geographic market

(21) The Commission has previously considered that the appropriate geographic market for crosslinkers amino resins is either EEA-wide or worldwide. 13 The Notifying Party does not express a view on the appropriate geographic scope. The Commission's market investigation did not give any grounds to depart from the Commission's decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.2. Upstream markets

4.2.1. Diisocyanates

(22) The primary use of diisocyanates is for the production of polyurethanes. There are aromatic isocyanates (made from benzene or toluene) and aliphatic isocyanates (based on saturated carbon). Aromatic diisocyanates are mainly used for the production of foams. Aliphatic diisocyanates are mainly used for coatings applications (due to their superior light stability).

Form CO, paragraph 280. The Notifying Party submits that considering a segmentation by industrial application, may lead to affected downstream markets within solvent borne acrylics and alkyds/polyesters for automotive refinish applications, where Allnex's market share may be just above 30%. However, this would not change the Commission's assessment as the resulting downstream markets would be so small that they do not make up a material fraction of demand for upstream inputs. Furthermore, the Commission's competitive assessment conservatively considers Allnex's total demand for upstream inputs across all products (including non-affected ones) to exclude customer foreclosure even on that basis.

¹³ Case M.10006 – Covestro / Koninklijke DSM (Resins & Functional Materials Business and Other Assets), paragraph 35.

4.2.1.1. Relevant product markets

- (23) In a recent decision concerning coating resins, the Commission considered that there are separate markets for the following types of diisocyanates: 14
 - (a) Hexamethylene diisocyanate ("HDI");
 - (b) Isophorone diisocyanate ("IPDI");
 - (c) 4,4'-Dicyclohexylmethane diisocyanate ("H₁₂MDI");
 - (d) Toluene diisocyanate ("TDI");
 - (e) Methylene diphenyl diisocyanate ("MDI"); and
 - (f) Monomeric MDI ("mMDI").
- (24) The Commission additionally considered that HDI derivatives constitute a separate market from HDI.¹⁵
- (25) The Notifying Party agrees with the Commission's previous decisional practice concerning the relevant product markets within disocyanates. ¹⁶ Additionally, the market investigation gave no grounds to depart from the Commission's recent decisional practice discussed in paragraph (23).
- Therefore, based on the Commission's previous decisions, its market investigation and the Notifying Party's arguments, the Commission considers that for the purpose of this Decision separate diisocyanate markets exist as set out in paragraph (23). The Transaction therefore gives rise to the following affected markets within diisocyanates: (i) **HDI** and (ii) **IPDI**.

4.2.1.2. Relevant geographic market

(27) The Commission has previously considered that the appropriate geographic market for HDI and IPDI is either EEA-wide or worldwide.¹⁷ The Notifying Party agrees with this assessment.¹⁸ The Commission's market investigation did not give any grounds to depart from the Commission's recent decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.2.2. Methyl methacrylate ("MMA")

(28) MMA is a commodity chemical product widely used in large amounts for the production of PMMA *moulding* compounds (an intermediary product used in the

¹⁴ Case M.10006 – Covestro / Koninklijke DSM (Resins & Functional Materials Business and Other Assets), paragraph 41.

¹⁵ Case M.8674 – BASF SE / Solvay S.A., recital 367.

¹⁶ Form CO, paragraph 93.

¹⁷ Case M.10006 – Covestro / Koninklijke DSM (Resins & Functional Materials Business and Other Assets), paragraph 46.

¹⁸ Form CO, paragraph 94.

manufacture of acrylic products), acrylic products, impact modifiers, acrylic latexes, lacquers, enamels, and resins for use in specialty chemicals and coatings. Other important applications for MMA include emulsion polymers principally for paper, textiles, leather and floor polishes, mineral-filled sheet, polyesters, polymer concrete, and adhesives.

4.2.2.1. Relevant product markets

- (29) The Commission previously considered that MMA forms a separate product market.¹⁹ While the Commission ultimately left the matter open, it indicated that there was likely to be a distinct product market for the supply of MMA and MMA derivatives.²⁰ PTTGC does not sell MMA derivatives.²¹
- (30) The Notifying Party agrees with the Commission's assessment in its past decisions. ²² Additionally, the market investigation gave no grounds to depart from the Commission's decisional practice.
- (31) Therefore, based on the Commission's previous decisions, its market investigation and the Notifying Party's arguments, the Commission considers that for the purpose of this Decision MMA and MMA derivatives constitute separate product markets. The Transaction therefore gives rise to an affected market for MMA. In any event, as PTTGC does not sell MMA derivatives and the Transaction does not raise serious doubts for the narrower market for MMA, the Commission's assessment would also apply to the broader market.

4.2.2.2. Relevant geographic market

(32) The Commission has previously considered that the appropriate geographic market for MMA is either EEA-wide or worldwide.²³ The Notifying Party agrees with this assessment.²⁴ The Commission's market investigation did not give any grounds to depart from the Commission's decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.2.3. Styrene monomer

(33) Styrene is an intermediate chemical product and has no end-use in itself. It is used as a base material in the production of polystyrene and as a co-monomer in the production of a number of polymers and synthetic rubbers, as well as in the manufacture of unsaturated polyester resins, gel coats and vinyl ester resins.

¹⁹ Case M.942 – Veba / Degussa, paragraph 14.

²⁰ Case M.9353 – Advent International Corporation / Evonik Methacrylates Business Division, paragraphs 16-29

²¹ Form CO, paragraph 186.

Form CO, paragraph 186.

Case M.9353 – Advent International Corporation / Evonik Methacrylates Business Division, paragraph 41.

²⁴ Form CO, paragraph 187.

4.2.3.1. Relevant product markets

- The Commission has previously considered that styrene monomer constitutes a separate relevant product market as there is no substitute for styrene in the manufacture of polystyrene and expanded polystyrene and other derivatives.²⁵
- The Notifying Party agrees with the Commission's assessment in its past decisions.²⁶ (35)Additionally, the market investigation gave no grounds to depart from the Commission's decisional practice.
- (36)Therefore, based on the Commission's previous decisions, its market investigation and the Notifying Party's arguments, the Commission considers that for the purpose of this Decision styrene constitutes a product market without further segmentation. The Transaction therefore gives rise to an affected market for **styrene**.

4.2.3.2. Relevant geographic market

- (37)The Commission has previously considered that the appropriate geographic market for styrene is either EEA-wide or worldwide.²⁷ The Notifying Party considers that the appropriate geographic scope for styrene is global, but submits that the appropriate geographic market definition can be left open between worldwide and EEA-wide as the Transaction does not give rise to competitive concerns for either geographic scope.²⁸
- PTTGC does not have styrene sales in the EEA, and has a minimal market share (c. (38)[0-5]%) globally.
- The Commission's market investigation did not give any grounds to depart from the (39)Commission's decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.2.4. Glycerol

(40)Glycerol is a polyhydric alcohol which is derived from inputs such as tallow, palm oil, rape seed oil, soya bean oil or crude soap lye glycerine. Glycerol is used as raw material for various uses in the chemical industry (among which coating resins), but most notably as moistening agent in over 1,500 applications (including personal care, pharmaceutical and coating resins).

²⁶ Form CO, paragraph 227.

²⁵ M.9238 - Ineos Enterprises Holdings Limited / Ashland's Global Compound Resin Business and Manufacturing Facility in Marl, paragraphs 11 and 13.

²⁷ M.9238 - Ineos Enterprises Holdings Limited / Ashland's Global Compound Resin Business and Manufacturing Facility in Marl, paragraph 12.

²⁸ Form CO, paragraphs 228 and 229.

4.2.4.1. Relevant product markets

- (41) In previous decisions, the Commission has left open whether all polyhydric alcohols are part of one and the same market or each polyhydric alcohol (such as glycerol) constitutes a separate product market.²⁹
- (42) The Notifying Party submits that glycerol should be viewed as a single relevant product market given its distinct chemical structure and properties as well as the fact that plants are specifically designed to manufacture certain types of polyhydric alcohols.³⁰
- (43) For the purpose of the current Decision, it can be left open whether the appropriate market definition is polyhydric alcohols, or whether a separate product market for glycerol is appropriate, as the Transaction does not give rise to serious doubts for either product market definition and PTTGC's market share is similarly low for both product markets. Additionally, the market investigation gave no grounds to depart from the Commission's decisional practice.
- (44) Therefore, based on the Commission's previous decisions, its market investigation and the Notifying Party's arguments, the Commission will perform its competitive assessment on the narrowest plausible basis, *i.e.* a separate market for **glycerol**. In any event, as the Transaction does not give rise to serious doubts for glycerol, the Commission's competitive assessment would apply for a broader market for polyhydric alcohols as well, as PTTGC's market share is similarly low, and Allnex's share of demand would be even lower than for glycerol.

4.2.4.2. Relevant geographic market

- (45) The Commission has previously considered that the appropriate geographic market for glycerol is either EEA-wide or worldwide.³¹ The Notifying Party considers that the appropriate geographic scope for glycerol is likely global, but submits that the appropriate geographic market definition can be left open between worldwide and EEA-wide as the Transaction does not give rise to competitive concerns for either geographic scope.³²
- (46) The Commission's market investigation did not give any grounds to depart from the Commission's decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.2.5. Purified terephthalic acid ("PTA")

(47) PTA is an organic compound in the form of fine white powder, principally used as a raw material for the production of polyester products, such as polyethylene terephthalate ("PET")-resin.

²⁹ M.4957 – Perstorp Holding / Solvay Interox (caprolactones business), paragraph 16.

Form CO, paragraph 233.

³¹ M.4957 – Perstorp Holding / Solvay Interox (caprolactones business), paragraph 26.

Form CO, paragraphs 234 and 235.

4.2.5.1. Relevant product markets

- In previous decisions, the Commission left open whether the relevant product market is the market for the production and supply of PTA, or a broader market including the production and the supply of di-methyl terephthalate ("DMT").³³ PTTGC does not produce DMT³⁴; therefore, the matter is not relevant for the current Decision.
- (49) The Notifying Party agrees with the product market definition of the Commission for PTA in past decisions.³⁵ Additionally, the market investigation gave no grounds to depart from the Commission's decisional practice.
- (50) Therefore, based on the Commission's previous decisions, its market investigation and the Notifying Party's arguments, the Commission will perform its competitive assessment on the narrowest plausible basis, *i.e.* a product market for **PTA**. In any event, as PTTGC does not produce DMT, and the Transaction does not raise serious doubts for the narrower market for PTA, the Commission's assessment would also apply to the broader market.

4.2.5.2. Relevant geographic market

(51) The Commission has previously considered that the appropriate geographic market for PTA is either EEA-wide or worldwide.³⁶ The Notifying Party agrees with this assessment.³⁷ The Commission's market investigation did not give any grounds to depart from the Commission's decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.2.6. Ethylene glycols (mono-ethylene glycol ("MEG") and di-ethylene glycol ("DEG"))

MEG and DEG are ethylene glycols, sometimes referred to as alcohols. Ethylene glycols are grouped depending on their chain length. There are three main types of ethylene glycols: MEG, DEG and tri-ethylene glycol ("TEG"). MEG accounts for the great majority of the production (about 90%), with the remaining part of production distributed between DEG (about 9%) and TEG (about 1%). The most important applications for MEG are in the production of polyester for textile/industrial fibres, polyester film for packaging/photography, polyester resin used to make plastic (PET) bottles, and anti-freeze. DEG is used in the production of polyols for use in polyurethanes for clothing, automotive and construction applications, while TEG is used as a dehumidifier in oil and gas processing and as automotive antifreeze/coolant.

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Case M.7918 – Indorama Netherlands / Guadarranque Polyester, paragraph 22 and case M.1293 – BP/Amoco, paragraph 10.

Form CO, paragraph 191.

Form CO, paragraph 192.

³⁶ Case M.7918 – Indorama Netherlands / Guadarranque Polyester, paragraph 26.

Form CO, paragraph 193.

4.2.6.1. Relevant product markets

- (53) The Commission has previously considered separate markets for MEG, DEG and TEG, but left open whether they constitute separate product markets or form part of a broader market of ethylene glycol.³⁸
- (54) The Notifying Party submits that it can be left open whether the appropriate market definition is ethylene glycol, or whether separate product markets for MEG and DEG are appropriate, as the Transaction does not raise competitive concerns for either product market definition and PTTGC's market share is similarly low for all markets.³⁹
- (55) All ethylene glycols, MEG, DEG and TEG, result from a single production process which yields roughly 90% MEG, 8-9% DEG and 1% TEG. Therefore, any producer of ethylene glycols typically supplies all three products. The Transaction does not give rise to serious doubts even on the narrowest basis of separate markets for each of MEG and DEG (no affected links arise for TEG). Therefore, for the purpose of the current Decision, it can be left open whether the appropriate market definition is ethylene glycol, or whether separate product markets for MEG and DEG are appropriate.
- (56) The Commission will perform its competitive analyses on the narrowest basis, *i.e.* separate markets for **MEG** and **DEG**.

4.2.6.2. Relevant geographic market

(57) The Commission has previously considered that the appropriate geographic market for ethylene glycols (including MEG and DEG) is either EEA-wide or worldwide. The Notifying Party agrees with this assessment. The Commission's market investigation did not give any grounds to depart from the Commission's decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

4.2.7. Aromatic solvents

(58) Aromatic solvents include benzene, xylene, toluene and others. A solvent is a volatile organic compound that allows application of the coating to the substrate and evaporates from the surface upon application.

4.2.7.1. Relevant product markets

(59) In the area of aromatic solvents, the Commission has in the past left open whether xylene constitutes a separate market or should be regarded as part of the overall market for gasoline additives. For toluene, another aromatic solvent, the Commission has considered, but left open, whether there is an overall market for

³⁸ M.4094 – Ineos / BP Dormagen, paragraph 56.

³⁹ Form CO, paragraph 197.

⁴⁰ M.4094 – Ineos / BP Dormagen, paragraph 58.

⁴¹ Form CO, paragraph 198.

⁴² M.4426 – Sabic / Huntsman Petrochemicals UK, paragraph 30.

- toluene or separate markets for toluene depending on purity (e.g. TDI-grade toluene).⁴³
- (60) The Notifying Party considers that it is appropriate to consider separate product markets for each aromatic solvent (e.g. xylene, toluene, benzene) without further segmentation.⁴⁴
- (61) The market investigation did not give indication on whether xylene or a broader market for gasoline additives is more appropriate. Based on the Commission's previous decisions, its market investigation and the Notifying Party's arguments, the Commission considers that, for the purpose of the current Decision, the appropriate product market definition can be left open between a market for xylene or a broader market for gasoline additives. The Transaction does not give rise to serious doubts even for the narrower product market of xylene, for which a vertical link exists. PTT's market share is similarly low for both product market definitions, and under the broader product market definition of gasoline additives, Allnex's share of demand would be even lower. Therefore, the Commission's competitive assessment for xylene also applies to the broader product market for gasoline additives.
- (62) The Commission will perform its competitive assessment on the narrowest basis, *i.e.* **xylene**.⁴⁵

4.2.7.2. Relevant geographic market

- (63) The Commission has previously considered that the appropriate geographic market for xylene is either EEA-wide or worldwide.⁴⁶ The Notifying Party considers that the appropriate geographic scope for xylene is global, but submits that the appropriate geographic market definition can be left open between worldwide and EEA-wide, as the Transaction does not give rise to competitive concerns for either geographic scope.⁴⁷
- (64) The Commission's market investigation did not give any grounds to depart from the Commission's decisional practice, and for the purpose of the current decision, it can be left open whether the appropriate geographic scope is worldwide or EEA-wide, as the Transaction does not give rise to serious doubts under either geographic scope.

⁴³ M.2389 – Shell / DEA, paragraph 165.

⁴⁴ Form CO, paragraph 220.

The Transaction does not give rise to an affected market for toluene. Toluene is banned in a concentration equal to or higher than 0.1 % by mass in adhesives and spray paints intended for sale to the general public by Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), annex XVII. In compliance with the EEA regulatory framework, PTTGC does not sell toluene in the EEA and has not done so in the past. From a demand-side perspective, in the EEA, Allnex as well as many of its competitors replaced toluene with xylene (already used by Allnex to produce crosslinkers amino resins in other countries).

⁴⁶ M.2389 – Shell / DEA, paragraph 166.

Form CO, paragraphs 222 and 223.

5. COMPETITIVE ASSESSMENT

(65) As set out in paragraph (6), PTTGC is active in the manufacture of various chemicals and basic feedstock for downstream industries. Allnex sources some of these products for the production of synthetic resin products. The Transaction therefore gives rise to markets that are affected by virtue of the vertical links between PTTGC products upstream and Allnex's products downstream. The Transaction does not give rise to products that are horizontally affected, as PTTGC and Allnex are not active in the same product markets.

5.1. Analytical framework

- (66) Article 2 of the Merger Regulation requires the Commission to examine whether notified concentrations are compatible with the internal market, by assessing whether they would significantly impede effective competition in the internal market or in a substantial part of it, in particular as a result of the creation or strengthening of a dominant position.⁴⁸
- (67) In the assessment of non-horizontal mergers, the Commission distinguishes between two broad types of such mergers: vertical mergers and conglomerate mergers.
- (68) Vertical mergers involve companies operating at different levels of the supply chain. For example, when a manufacturer of a certain product (the "upstream firm") merges with one of its distributors (the "downstream firm"), this is called a vertical merger.⁴⁹
- (69) Conglomerate mergers are mergers between firms that are in a relationship that is neither horizontal (as competitors in the same relevant market) nor vertical (as suppliers or customers). In practice, the Commission focusses on mergers between companies that are active in closely related markets (e.g. mergers involving suppliers of complementary products or products that belong to the same product range).⁵⁰ The Transaction does not lead to markets where a conglomerate effects assessment is warranted.
- (70) In assessing potential vertical effects of a merger, the Commission analyses whether a merger results in foreclosure so that actual or potential rivals' access to supplies or markets is hampered or eliminated as a result of the merger, thereby reducing these companies' ability and/or incentive to compete. Such foreclosure may discourage entry or expansion of rivals or encourage their exit. Foreclosure thus can be found even if the foreclosed rivals are not forced to exit the market: it is sufficient that the rivals are disadvantaged and consequently led to compete less effectively. Such foreclosure is regarded as anti-competitive where the merging companies and, possibly, some of its competitors as well are as a result able to profitably increase the price charged to consumers.⁵¹
- (71) Two forms of foreclosure can be distinguished. The first is where the merger is likely to raise the costs of downstream rivals by restricting their access to an

⁴⁸ Regarding rules relating to the functioning of the EEA Agreement, see Annex XIV to the EEA Agreement.

⁴⁹ OJ C 265, 18.10.2008, p. 6-25 (the 'Non-horizontal Merger Guidelines'), paragraph 4.

Non-horizontal Merger Guidelines, paragraph 91.

Non-horizontal Merger Guidelines, paragraph 29.

important input (input foreclosure). The second is where the merger is likely to foreclose upstream rivals by restricting their access to a sufficient customer base (customer foreclosure).⁵²

(72) In assessing both types of foreclosure, the Commission assesses whether (i) the merged entity would have the ability to engage in foreclosure, (ii) it would have the incentive to do so, and (iii) what would be the overall impact on effective competition in the affected markets.⁵³

5.2. Affected markets

- (73) As illustrated above in Figure 1, the ten vertical relationships affected as a result of the Transaction are the following:
 - (a) *HDI* upstream with radcure waterborne UV PUD downstream;
 - (b) *IPDI* upstream with radcure waterborne UV PUD downstream;
 - (c) MMA upstream with radcure waterborne UV PUD downstream;
 - (d) Styrene upstream with radcure waterborne UV PUD downstream;
 - (e) Glycerol upstream with radcure waterborne UV PUD downstream;
 - (f) Glycerol upstream with polyester powders downstream;
 - (g) PTA upstream with polyester powders downstream;
 - (h) *DEG* upstream with *polyester powders* downstream;
 - (i) *MEG* upstream with *polyester powders* downstream;
 - (j) MEG upstream with crosslinkers amino resins downstream and
 - (k) Xylene upstream with crosslinkers amino resins downstream.
- (74) All markets are vertically affected only by virtue of Allnex's market share downstream, and not by PTTGC's market share upstream, which always remains well under 30% as illustrated in the next section. The Commission's investigation⁵⁴ has not yielded anything that would indicate that PTTGC possesses market power. Therefore, the Commission considers that the Transaction does not create a risk of input foreclosure based on the market structure. In light of this, the Commission's competitive analysis will focus on the possibility of customer foreclosure.

5.3. Market structure

(75) PTTGC's market shares in the affected upstream markets are provided below in Table 2.

Non-horizontal Merger Guidelines, paragraph 30.

Non-horizontal Merger Guidelines, paragraphs 32 and 59.

Responses to questionnaire Q1.

Table 2: PTTGC's 2020 value-based market shares in vertically affected upstream markets.⁵⁵

Market	PTTGC worldwide market share	PTTGC EEA market share	Main competitors
HDI	[5-10]%	[5-10]%	Wanhua, Covestro
IPDI	[5-10]%	[10-20]%	Covestro, Evonik, BASF
MMA	[0-5]%	-	Roehm, Mitsubishi (Lucite), Trinseo (Arkema Methacrylates)
Styrene	[0-5]%	-	Trinseo, LyondellBasell, Versalis
Glycerol	[0-5]%	[0-5]%	KLK Emmerich Oleo, Oleon, AAK
PTA	[0-5]%	[0-5]%	Indorama, Hanwha, Yisheng
DEG	[0-5]%	[0-5]%	Sabic, Formosa, Lotte
MEG	[0-5]%	[0-5]%	Sabic, Formosa, Lotte
Xylene	[0-5]%	-	Shell, ExonnMobil, Reliance Industries, CNPC, Lotte

Source: Notifying Party, Annex 6 to the Form CO.

- (76) As is illustrated in Table 2, PTTGC's market shares remain well under 30%, both globally and in the EEA. The Commission's investigation has also not yielded anything that would indicate that PTTGC possesses market power. Therefore, the Commission considers that the Transaction does not create a risk of input foreclosure, and all affected vertical links are affected by virtue of Allnex's market position downstream.
- (77) Allnex's market shares for affected downstream markets are provided below in Table 3. Allnex's market shares only exceed 30% in the EEA, and remain well under 30% on a global basis. Therefore, none of the downstream products are affected under a worldwide geographic market definition.

Table 3: Allnex's EEA value-based market shares in vertically affected downstream markets.⁵⁶

	2018	2018 2019 2020		2019		
Market	Revenues (million EUR)	Share	Revenues (million EUR)	Share	Revenues (million EUR)	Share
Radcure waterborne UV PUD	[]	[30-40]%	[]	[30-40]%	[]	[30-40]%
Polyester powders	[]	[30-40]%	[]	[30-40]%	[]	[30-40]%
Crosslinkers amino resins	[]	[30-40]%	[]	[30-40]%	[]	[30-40]%

Source: Notifying Party, Annex 6 to the Form CO.

(78) Allnex's main competitors for radcure waterborne UV PUD are Covestro, Alberdingk Boley, BASF and Benasedo. Its main competitors for polyester powders are Covestro, Arkema, SIR Industriale and Synthomer. Its main competitors for crosslinker amino resins are Prefere Resins, BASF and Melamin.

Volume-based market shares are not materially different from value-based market shares. The Notifying Party submits that market shares remained relatively stable from 2018-2020.

Volume-based market shares are not materially different from value-based market shares.

5.4. Vertical relationships – customer foreclosure

5.4.1. The Notifying Party's view

- (79) The Notifying Party submits that the Transaction will not impede effective competition due to vertical effects.⁵⁷ It provides the following arguments in relation to customer foreclosure to support its position, which apply to all ten vertical links set out above:⁵⁸
 - (a) The market shares of both PTTGC and Allnex in all relevant markets are modest, and each of the markets is characterised by fierce competition on price.
 - (b) Allnex purchases very small volumes of all of the affected upstream input products, representing an immaterial share of PTTGC's sales and market demand. All inputs have many other downstream uses than resins and additives that make up the lion's share of demand.
- (80) The tables below quantify the Notifying Party's argument for each affected vertical link, sorted by downstream product. In the tables, the columns represent the following:
 - (a) Total EEA market: the total sales of the upstream product in the EEA in 2020 in megatons ("MT");
 - (b) Allnex procurement: volume of the upstream product that Allnex purchased in 2020 for EEA production of the downstream product;
 - (c) Share of Allnex's demand: the share of the EEA volume of the upstream product that Allnex Group requires for the production of the (i) vertically related downstream product and (ii) all Allnex's downstream products;
 - (d) Use in production: estimated share of total EEA use of the upstream product used for production of the relevant downstream product.

Table 4: Information concerning affected vertical links relating to the production of radcure waterborne UV PUD downstream (2020)

Upstream product	Total EFA market (MT)	Allnex procure- ment (MI)	Share of Allnex's demand for downstream product	Share of Allnex's demand for all downstream products	Use in production
Glycerol	[]	[]	[0-5]%	[0-5]%	[0-5]%
HDI	[]	[]	[0-5]%	[0-5]%	[0-5]%
IPDI	[]	[]	[0-5]%	[0-5]%	[5-10]%
MMA	[]	[]	[0-5]%	[0-5]%	[0-5]%
Styrene	[]	[]	[0-5]%	[0-5]%	[0-5]%

Source: Notifying Party, Form CO, Table 9 and paragraph 116.

58 Form CO, paragraph 21.

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⁵⁷ Form CO, paragraph 108.

Table 5: Information concerning affected vertical links relating to the production of polyester powder (2020)

Upstream product	Total EEA market (MT)	Allnex procure- ment (MI)	Share of Allnex's demand for downstream product	Share of Allnex's demand for all downstream products	Use in production
PTA	[]	[]	[0-5]%	[0-5]%	[5-10]%
MEG/DEG	[]	[]	[0-5]%	[0-5]%	[0-5]%
Glycerol	[]	[]	[0-5]%	[0-5]%	[0-5]%

Source: Notifying Party, Form CO, Table 10.

Table 6: Information concerning affected vertical links relating to the production of crosslinkers amino resins (2020)

Upstream product	Total EEA market (MT)	Allnex procure- ment (MI)	Share of Allnex's demand for downstream product	Share of Allnex's demand for all downstream products	Use in production
MEG	[]	[]	[0-5]%	[0-5]%	[0-5]%
Xylene	[]	[]	[0-5]%	[0-5]%	[0-5]%

Source: Notifying Party, Form CO, Table 11.

5.4.2. The Commission's assessment

- (81) All ten vertical links assessed in this decision are affected by virtue of Allnex's market position downstream. For all upstream products, PTTGC's market share is small and always under 15% both globally in the EEA. Allnex's market position downstream (in the EEA) is modest, and only just above 30%. The Non-horizontal Merger Guidelines set out that in this situation, where a merged entity would have a market share just above 30% in one market but substantially below on the other, related, markets, competition concerns will be less likely.⁵⁹
- As it is visible in Table 4 to Table 6, Allnex's procurement of each of the affected upstream products only makes up an immaterial fraction of total EEA demand for each upstream product in the EEA, with Allnex's share never exceeding [0-5]%. Even when considering Allnex's total procurement for all downstream products it produces, its share of demand remains very low, with a maximum of [0-5]% for HDI. Respondents to the Commission's market investigation all confirmed that Allnex only makes up a small amount of their sales for each upstream product ([0-5]%), except for one competitor, which indicated that Allnex makes up a larger, but still limited, share of their sales of HDI and IPDI (10-30%). Therefore, Allnex is not an important customer and does not have market power for any of the upstream products under assessment.
- (83) This demonstrates that even if the merged entity sourced its requirements for affected upstream products in-house post-Transaction, sufficient customers remain for the merged entity's competitors. This was confirmed by the respondents to the Commission's market investigation, which confirmed for all affected upstream

Non-horizontal Merger Guidelines, footnote 3.

⁶⁰ Responses to questionnaire Q1, question 8.

products that sufficient alternative customers exist if Allnex's demand disappeared from the market.⁶¹

- Furthermore, for all upstream products, the relevant downstream products only make (84)up a small percentage of the total demand (with a maximum of [5-10]% for PTA demand in the EEA destined for polyester powder production), showing that all upstream products have various alternative downstream uses. Respondents to the Commission's market investigation confirmed that the relevant downstream products only make up a small fraction of demand of the vertically related upstream products. For each affected upstream product, the majority of respondents indicated that the downstream products affected by the Transaction only make up a small share (<10%) of upstream product demand.⁶² One respondent explains: "Radcure waterborne UV PUDs are a small niche of what is still a niche coating technology. The upstream materials listed, on the other hand, are commodities or specialties of very large use in many industries."63 Similarly, for polyester powders and cross linker amino resins respectively, it explains: "Polyester Powders are produced in much greater volumes that Radcure Waterborne UV PUD, but still can only account for a fraction of the total use of the listed commodities used in the production of PET and as biofuel component" and "As above. Amino crosslinkers are common, but not so much! 64
- (85) This demonstrates that the downstream products in which Allnex is active are relatively niche uses of the upstream products, which are chemical commodities with uses over a large range of industries. Under these circumstances, it is implausible that the merged entity would have the ability to engage in a successful customer foreclosure strategy post-Transaction.
- (86) The facts of this case make it highly unlikely that the merged entity will have the *ability* to foreclose upstream competitors from access to downstream customers post-Transaction.
- (87) In addition to this clear lack of ability, the Commission considers that the merged entity would have no *incentive* to engage in customer foreclosure. Considering Allnex's minimal share of demand for the upstream products, such customer foreclosure would not materially affect the ability of upstream competitors to compete with the merged entity. In turn, this would not affect the cost of downstream rivals and thereby allow the merged entity to set higher prices downstream. The merged entity therefore has nothing to gain from such a strategy.
- (88) Finally, even if customer foreclosure were to take place, the *impact* on the markets of such strategy would be small in view of Allnex's limited procurement volumes compared to the overall size of the market.
- (89) In line with the above, the vast majority of respondents to the Commission's market investigation did not indicate any concerns about the Transaction. One respondent voiced the concern that the merged entity may turn to captive use for upstream

⁶¹ Responses to questionnaire Q1, question 9.

Responses to questionnaire Q1, questions 5-7.

Response to questionnaire Q1, question 5.1.

Response to questionnaire Q1, questions 6.1 and 7.1.

products HDI and IPDI. However, as set out in paragraphs (82) and (84), Allnex makes up a limited share of sale for each product (including HDI and IPDI), and the affected downstream products only comprises a small share of all downstream applications for each upstream product (including HDI and IPDI). 65

5.5. Conclusion

(90) For the reasons set out above, the Transaction does not give rise to serious doubts as to its compatibility with the internal market or a substantial part thereof and the functioning of the EEA agreement in relation to vertical effects for any of the vertical links set out in paragraphs (73)(a)-(73)(k).

6. CONCLUSION

(91) For the above reasons, the European Commission has decided not to oppose the notified concentration 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

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Responses to questionnaire Q1, question 11