



EUROPEAN COMMISSION
DG Competition

CASE M.6905 – INEOS/ SOLVAY/ JV

(Only the English text is authentic)

MERGER PROCEDURE REGULATION (EC) 139/2004

Article 8(2) Regulation (EC) 139/2004

Date: 08/05/2014

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EUROPEAN
COMMISSION

Brussels, 8.5.2014
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PUBLIC VERSION

COMMISSION DECISION

of 8.5.2014

addressed to:
- INEOS AG
- SOLVAY SA

declaring a concentration to be compatible with the internal market

(Case No M.6905 - INEOS / Solvay / JV)

(Only the English text is authentic)

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COMMISSION DECISION

of of 8.5.2014

addressed to:
- INEOS AG
- SOLVAY SA

declaring a concentration to be compatible with the internal market

(Case No M.6905 - INEOS / Solvay / JV)

(Only the English text is authentic)

THE EUROPEAN COMMISSION,

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

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

Having regard to Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings¹, and in particular Article 8(2) thereof,

Having regard to the Commission's decision of 5 November 2013 to initiate proceedings in this case,

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

Having regard to the opinion of the Advisory Committee on Concentrations²,

Having regard to the final report of the Hearing Officer in this case³,

Whereas:

1. INTRODUCTION

- (1) On 16 September 2013, the European Commission ("the Commission") received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 by which INEOS AG ("INEOS", Switzerland) and Solvay SA ("Solvay", Belgium), jointly referred to as the "Notifying Parties", acquire within the

¹ OJ L 24, 29.1.2004, p. 1 ("Regulation (EC) No 139/2004"). With effect from 1 December 2009, the Treaty on the Functioning of the European Union ("TFEU") has introduced certain changes in terminology, 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 C 407, 15/11/2014, p. 5.

³ OJ C 407, 15/11/2014, p. 6.

meaning of Article 3(1)(b) and Article 3(4) of Regulation (EC) No 139/2004 joint control of a newly established joint venture ("JV"), by way of transfer of assets.⁴

2. THE PARTIES

- (2) INEOS is the parent of a group of companies which are active in the manufacture of petrochemicals, specialty chemicals and oil products. Its subsidiary, INEOS ChlorVinyls, is a European producer of chlor-alkali products and a supplier of polyvinyl chloride ("PVC").
- (3) Solvay is the parent of a group of companies which are internationally active in the research, development, production, marketing and sale of chemicals and plastics. SolVin is a European supplier of PVC resins, controlled by Solvay which holds 75% of its shares minus one, the remaining 25% plus one share being held by BASF SE ("BASF", Germany).

3. THE TRANSACTION AND THE CONCENTRATION

- (4) On 6 May 2013, the Notifying Parties signed a Letter of Intent ("LoI") with a view to combining their EEA chlorvinyls activities and related businesses in the JV, where each of them will hold a 50% stake (the "Transaction"). The Transaction was publicly announced on 7 May 2013.
- (5) More in detail, Solvay will contribute to the JV four Suspension PVC ("S-PVC") plants and two Emulsion PVC ("E-PVC") plants together with integrated upstream chlorine and Ethylene Dichloride ("EDC") / Vinyl Chloride Monomer ("VCM") assets to the JV. Solvay will also contribute additional chlorine electrolysis assets with associated chloromethanes and epichlorhydrine plants, a participation in an ethylene cracker and its salt / brine facilities, all spread across seven production sites in the EEA. INEOS will contribute to the JV seven S-PVC plants, two E-PVC plants, four upstream chlorine plants and EDC / VCM plants, as well as its chlorinated paraffins and chloromethanes plants. Those assets are located in eleven sites in seven EEA countries.
- (6) The LoI provides for an exit mechanism, which could be used between three and six years from the JV's formation, pursuant to which INEOS will acquire Solvay's 50% interest in the JV. After the third anniversary of the JV, Solvay will be entitled to exercise a put option, and INEOS will be entitled to exercise a call option after the fourth anniversary of the JV. Following the sixth anniversary of the JV, the put option and call option will expire, the JV shareholders' agreement will terminate and Solvay will sell its shareholding in the JV, which will become solely owned by INEOS.
- (7) The Commission assessed whether the Transaction would amount to a joint venture performing on a lasting basis all the functions of an autonomous economic entity within the meaning of Article 3(4) of Regulation (EC) No 139/2004.

3.1. Joint Control

- (8) Each of the Notifying Parties will hold 50% of the shares of the JV.

⁴ OJ C 273, 21.09.2013, p. 18.

- (9) The LoI stipulates that each Notifying Party will have one vote per share at General Meetings and that no shareholder meeting shall be quorate unless a representative of each shareholder is present. Moreover, neither Notifying Party will have a casting vote nor both Notifying Party will have special veto rights.⁵
- (10) The Notifying Parties are entitled to the same number of representatives in the Board of the JV, decisions being made on a unanimous basis. The chairman, who will not have a casting vote, will be appointed on a rotating basis by each Notifying Party. If a deadlock situation arises which cannot be resolved through mediation, the proposal which is the subject of the deadlock will not proceed.⁶
- (11) According to the LoI, the duration of the JV, as well as the period of joint control, will be at least three years following the date of creation of the JV. In line with Paragraph 34 of the Consolidated Jurisdictional Notice, a period of at least three years "*seems to be too long to exclude that the joint control scenario has an impact on the structure of the market.*"⁷ Therefore, the joint control is sufficiently long-lasting for the operation to have an impact on the structure of the market.
- (12) Therefore, the Commission considers that the Transaction results in joint control by the Notifying Parties over the JV.

3.2. Full-functionality

- (13) The LoI stipulates that the JV will be responsible for its management, operation and assets in accordance with a five year business plan. The JV will have an executive committee responsible for the daily management, which will act under delegated authority from the JV's Board. Moreover, the JV itself will be responsible for its own sourcing necessary the raw materials necessary, the manufacturing of the products and their sales and marketing. Finally, the JV will be responsible for all financing and accounting decisions. The JV will therefore have control over its profit and loss account, cash, balance sheet and debt financing arrangements.⁸
- (14) The Notifying Parties will contribute all assets, intellectual property rights, contracts, working capital and employees necessary for the JV to carry out the relevant business in an autonomous manner. Purchases from the Notifying Parties will be on an arms-length basis and will represent approximately [...] of the JV's total expenditure on inputs, the rest being sourced from third parties. Those inputs which could not or are unlikely to be sourced from third parties, together account for only [...] of the total predicted expenditure of the JV.
- (15) The production of S-PVC and E-PVC by the JV, as well as other products such as chloromethanes and caustic soda, will add substantial value to the raw materials supplied to the JV by the Notifying Parties.⁹ By way of example, one tonne of S-PVC sold from INEOS plant located in Stenungsund (for which the average price in 2012 was EUR [...]*) requires [...] tonnes of ethylene (at a cost of EUR [...]*) per

⁵ Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (OJ C 95, 16.4.2008, p. 1) ("Consolidated Jurisdictional Notice"), Paragraph 64.

⁶ Consolidated Jurisdictional Notice, Paragraphs 62 and 64.

⁷ Consolidated Jurisdictional Notice, Paragraph 34.

⁸ Consolidated Jurisdictional Notice, Paragraph 94.

⁹ Consolidated Jurisdictional Notice, Paragraph 101.

tonne, based on the current contract with [...]*), thus adding [...]*% to the value of the ethylene. Similarly, one tonne of S-PVC sold from Solvay plant located in Jemeppe (for which the average price in 2012 was EUR [...]* per tonne) requires [...]* tonnes of brine (at a cost of EUR [...]* per tonne, as currently supplied by Solvay), adding around [...]* to the value of the brine supplied by Solvay.

- (16) Moreover, the JV will not be reliant on sales to the Notifying Parties. More than 50% of the JV turnover will be achieved with third parties.¹⁰
- (17) Finally, according to the LoI, the duration of the JV is of at least three years from the date of the JV's completion. Thus, the JV will perform economic functions over a sufficiently long period so as to bring about a lasting change in the structure of the undertakings.¹¹
- (18) Therefore, the Commission considers that the Transaction consists of the creation of a full-function JV since it will perform on a lasting basis all the functions of an autonomous economic entity.

3.3. Conclusion

- (19) Consequently, the Transaction constitutes a concentration within the meaning of Article 3(1)(b) and 3(4) of Regulation (EC) No 139/2004.

4. UNION DIMENSION

- (20) The undertakings concerned had a combined aggregate world-wide turnover of more than EUR 5 000 million¹² in 2011 (INEOS: [...]*; Solvay: EUR 12 693 million). Each of them has a Union-wide turnover in excess of EUR 250 million (INEOS: EUR [...]*; Solvay: EUR [...]*) and they do not achieve more than two-thirds of their aggregate Union-wide turnover within one and the same Member State. The Transaction therefore has a Union dimension.

5. THE PROCEDURE

- (21) The Notifying Parties notified the Transaction to the Commission on 16 September 2013.
- (22) Based on the results of the Phase I market investigation, the Commission raised serious doubts as to the compatibility of the Transaction with the internal market and adopted a decision to initiate proceedings pursuant to Article 6(1)(c) of Regulation (EC) No 139/2004 on 5 November 2013 (the "Decision opening the proceedings ")
- (23) The Decision opening the proceedings found that the Transaction raised serious doubts as regards a type of S-PVC, that is to say Commodity S-PVC, irrespective of the geographic market definition adopted (whether North Western Europe ("NWE"), Western Europe ("WE") or EEA), and sodium hypochlorite in the national market of Belgium and the Netherlands as well as in the hypothetical market of the Benelux. The Decision opening the proceedings also found that the commitments proposed by

¹⁰ Consolidated Jurisdictional Notice, Paragraph 98.

¹¹ Consolidated Jurisdictional Notice, Paragraph 103.

¹² Turnover calculated in accordance with Article 5(1) of Regulation (EC) No 139/2004 and the Commission Consolidated Jurisdictional Notice (OJ C95, 16.04.2008, p1).

the Notifying Parties in the Phase I investigation were not sufficiently clear-cut to remove the Commission's serious doubts.

- (24) On 8 November and 16 December 2013, the Commission shared key documents with the Notifying Parties.
- (25) The Notifying Parties submitted their written comments on the Decision opening the proceedings on 22 November 2013 (the "Response to the Decision opening the proceedings").
- (26) During the Phase II investigation, there have been informal information exchanges on a regular basis between the Commission's services and the Notifying Parties, as well as status update telephone calls.
- (27) On 18 November 2013, the Phase II investigation review period was extended by 10 working days at the request of the Notifying Parties pursuant to the second subparagraph, first sentence, of Article 10(3) of Regulation (EC) No 139/2004.
- (28) A State of Play ("SoP") meeting between the Commission and the Notifying Parties took place on 28 November 2013.
- (29) On 5 December 2013, a meeting was held between the Commission and the Notifying Parties to discuss methodology and economic work undertaken or to be undertaken.
- (30) A second SoP meeting between the Commission and the Notifying Parties took place on 10 January 2014. At this meeting, the Notifying Parties were informed about the results of the Phase II market investigation undertaken by the Commission, the main contents of the Statement of Objections ("SO") and the schedule to be followed with regard to the case. In a conference call held on 15 January 2014, the Commission's Services further explained to the Notifying Parties the quantitative analysis undertaken on their transaction data.
- (31) On 21 January 2014 the Commission adopted an SO pursuant to Article 18 of Regulation (EC) No 139/2004. The Notifying Parties replied to the SO on 5 February 2014 ("Response to the SO").
- (32) A Letter of Facts ("LoF") was sent to the Notifying Parties on 5 February 2014. The Notifying Parties replied to the LoF on 12 February 2014 ("Reply to the LoF").
- (33) On 4 February 2014, the Notifying Parties were informed by the Hearing Officer of his decision to recognise the trading associations European Plastics Converters ("EUPC"), European PVC Profiles and Related Building Products Association ("EPPA") and European Plastic Pipes and Fittings Association ("TEPPFA") as interested third parties pursuant to Article 18(4) of Regulation (EC) No 139/2004.
- (34) On 5 February 2014, the decision of the Hearing Officer to recognise the competitor Kem One as interested third party pursuant to Article 18(4) of Regulation (EC) No 139/2004 was also communicated to the Notifying Parties.
- (35) On 10 February 2014, an Oral Hearing took place at the request of the Notifying Parties. EUPC participated in the Oral Hearing in its capacity as interested third party.

- (36) On 13 February 2014, with the agreement of the Notifying Parties, the Commission extended the time limit for taking a final decision by 10 working days pursuant to the second subparagraph, third sentence, of Article 10(3) of Regulation (EC) No 139/.
- (37) A SoP meeting between the Commission's Services and the Notifying Parties was held on 17 February 2014.
- (38) On 27 February 2014, the Notifying Parties submitted a first set of commitments pursuant to Article 8(2) of Regulation (EC) No 139/2004 ("the Commitments of 27 February 2014") in order to address the competition concerns identified in the SO. The proposal was further discussed in a technical meeting held on 28 February 2014. Those commitments were not subject to market testing.
- (39) On 7 March 2014, the Notifying Parties replaced the Commitments of 27 February 2014 with a revised set of commitments. This new set of commitments was subsequently revised on 10 and 11 March 2014 with three alternative packages (the "Commitments of 11 March 2014"). The modification of the commitments triggered the automatic extension of the time limit for adopting a final decision by 15 working days.
- (40) On 12 March 2014, the Commission market tested two out of the three alternative packages submitted as part of the Commitments of 11 March 2014.¹³
- (41) By letter of 17 March 2014, the Notifying Parties expressed their criticisms in relation to questions which were put to customers in relation to the Commitments of 11 March 2014. In essence, the Notifying Parties complained that the questions required of customers to provide an opinion on technical matters of which they had no knowledge.
- (42) On 19, 20 and 21 March 2014, the Commission informed the Notifying Parties of the results of the market test. A SoP meeting between the Commission's Services and the Notifying Parties was held on 24 March 2014. Follow-up meetings and calls took place on 25 and 26 March 2014.
- (43) On 3 March 2014, a further meeting was held between the Commission and the Notifying Parties to discuss the robustness of the economic work undertaken.
- (44) By letter of 17 March 2014, the Notifying Parties expressed their criticism in relation to the robustness of the Commission's economic analysis contained in the SO. They also submitted that the Commission had breached their procedural rights of defence by modifying its economic assessment subsequent to the SO without issuing a supplemental SO or a second LoF.¹⁴
- (45) On 8 April 2014, the Notifying Parties were informed by the Hearing Officer of his decision to recognise as interested third parties pursuant to Article 18(4) of Regulation (EC) No 139/2004 five trade unions in their capacity as representatives of the employees based at INEOS' Tessenderlo site.¹⁵

¹³ See also Section 11.

¹⁴ See also [Annex A](#) and Section 9.1.2.8.

¹⁵ These unions are: (1) ABVV Algemeen Belgisch Vakverbond; (2) ACLVB Liberale Vakbond; (3) ACV bouw - industrie & energie; (4) BBTk Bond van bedienden, technici en kaderleden; and (5) LBC-NVK vakbond voor bedienden en kaderpersoneel.

(46) On 13 April 2014, the Notifying Parties submitted a final set of revised commitments, containing further improvements.

(47) The Advisory Committee discussed the draft of this Decision on 22 April 2014 and issued a favourable opinion.

5.1. Sources of evidence relied on by the Commission in its investigation

(48) The Commission has based its conclusions set out in this Decision on a wide range of different types of evidence collected by the Commission throughout the proceedings.

(49) First, the Commission has taken into account the submissions of the Notifying Parties, as well as their replies to several formal requests for information ("RFI") pursuant to Article 11 of Regulation (EC) No 139/2004.¹⁶

(50) Second, the Commission asked the Notifying Parties to submit a large number of internal documents.

(51) Third, the Commission carried out an extensive market investigation during both Phase I investigation and Phase II investigation of these proceedings. In particular, it sent out 22 questionnaires to customers¹⁷ and competitors¹⁸ of the Notifying Parties

¹⁶ The RFIs regarding commodity S-PVC were sent to the Notifying Parties on 14 November, 18 November, 28 November, 2 December, 16 December, 24 December 2013, 14 February, 20 February, 21 February, 27 February, 28 February, 3 March 2014, 6 March 2014, 13 March 2014, 18 March 2014, 20 March 2014, 24 March 2014, 31 March 2014, 1 April 2014, 2 April 2014, and 4 April 2014. The RFIs regarding sodium hypochlorite were sent on 26 November, 29 November and 12 December 2013.

¹⁷ More precisely, during the Phase I investigation, the Commission consulted customers, competitors and trade associations in relation to seven markets. Overall, nine questionnaires were sent to customers:

- Q2 - questionnaire on S-PVC, addressed to 140 customers (65 replies received) ;
- Q4 - questionnaire on E-PVC, addressed to 60 customers (33 replies received);
- Q6 - questionnaire on CSL, addressed to 41 customers (26 replies received);
- Q8 - questionnaire on methylene chloride, addressed to 33 customers (18 replies received);
- Q10 - questionnaire on chlorine, addressed to 10 customers (eight replies received);
- Q12 - questionnaire on chloroform, addressed to 13 customers (eight replies received);
- Q18 - questionnaire on sodium hypochlorite, addressed to 32 customers (15 replies received).

During Phase II, three questionnaires have been sent to customers on S-PVC:

- Q25 - addressed to 26 new customers (nine replies received);
- Q26 - addressed to 118 customers (66 replies received);
- Q27 - addressed to 145 customers (69 replies received).

Moreover, additional RFIs have been sent to customers on mass PVC.

¹⁸ During Phase I, competitors' views were requested through the following questionnaires:

- Q1 - questionnaire on S-PVC, addressed to 10 competitors (nine replies received);
- Q3 - questionnaire on E-PVC, addressed to seven competitors (four replies received);
- Q5 - questionnaire on CSL, addressed to 13 competitors (10 replies received);
- Q7 - questionnaire on methylene chloride, addressed to three competitors (two replies received);
- Q9 - questionnaire on chlorine, addressed to 13 competitors (nine replies received);
- Q11 - questionnaire on chloroform, addressed to four competitors (three replies received);
- Q13 - questionnaire on ethylene, addressed to six competitors (six replies received);
- Q14 - questionnaire on ethylene, addressed to 16 competitors (12 replies received);
- Q16 - questionnaire on EDC and VCM, addressed to 10 competitors (nine replies received);
- Q17 - questionnaire on sodium hypochlorite, addressed to 15 competitors (11 replies received).

During Phase II, the Commission sent individual requests for information to all nine S-PVC competitors, all of which replied, as well as to six potential new entrants in the Benelux sodium hypochlorite market, as identified by the Notifying Parties

and conducted 43 interviews with a number of market participants.¹⁹ The Commission also conducted interviews with - and sent RFIs to - the main trade associations active in the sector.²⁰ The Commission also contacted two of the most widely known industry experts, that is to say ICIS and IHS, which routinely collect market information on chemical industries – including S-PVC - and produce publicly available industry reports.

- (52) Fourth, for a better understanding of S-PVC production process the Commission organised a site visit at Solvay's plant in Jemeppe, Belgium.
- (53) Finally, the Commission also analysed the economic evidence submitted by the economic consultants of the Notifying Parties, and carried out its own econometric analysis based on the transaction data provided by the Notifying Parties. All economic and econometric evidence are described in detail in Sections 7.2 and 9.1 and in **Annexes A** and **B**, which are an integral part of this Decision.

5.1.1. Interpretation of the Notifying Parties' internal documents

- (54) At the request of the Commission, the Notifying Parties submitted over 14.000 internal documents. The Commission RFIs related to pre-Transaction and contemporary documents relating to a number of key elements for the assessment of the case such as sales and pricing strategy across different regions, effects of prior transaction in the sector, impact of past plant closures, sourcing of key raw materials.²¹
- (55) In their Response to the SO and at the Oral Hearing, the Notifying Parties complained about an alleged selective use by the Commission of their internal documents. In essence, the Notifying Parties submitted that the Commission (i) focused on a small amount of inculpatory evidence, while ignoring a multitude of exculpatory documents in their favour; (ii) overemphasised inculpatory evidence that originated from junior employees or sales staff, was contaminated by the opinion expressed by third party consultants or was drafted simply to influence on Board decisions; and (iii) did not draw a proper distinction between the strategic views and the tactical behaviour in the market of the Notifying Parties.
- (56) The merits and usefulness of the main pieces of evidence will be discussed where appropriate in this Decision, however, the general principles on the use of internal documents are set out in Recitals 57-60. As a general rule, however, it is also useful to clarify from the outset that it is not very appropriate to employ the concepts of "inculpatory" and "exculpatory" documents in the context of merger proceedings, which are consensual in nature, contrary to the meaning attributed to those terms in the context of antitrust proceedings.
- (57) First, the analysis of internal documents enables the Commission to review a significant number of documents within a relatively short time frame and to interpret those documents in the context in which they were drafted. In doing so, the

¹⁹ Moreover, EDC and VCM suppliers' views have been asked with questionnaire Q15, addressed to seven suppliers: the Commission received four responses to this questionnaire. Finally, ethylene suppliers were also consulted: six suppliers have been addressed with a questionnaire and all of them replied.

²⁰ During Phase I, 18 Trade Association were consulted in relation to the market for S-PVC (questionnaire Q19, 11 replies received).

²¹ RFIs of 19 July 2013, 14 November 2013 and 27 February 2014.

Commission has to weigh the possible useful and probative value of the evidence and decide whether some of those documents carry a particularly high value in relation to the evidence used in the assessment of the transaction in those proceedings.²² If any such documents can be helpful in corroborating or supporting the views of the Commission, this is then brought to the attention of the parties to allow them to submit their views.

- (58) Second, this exercise entails - by definition - a selection of a number of documents. The documents eventually retained and regarded as useful evidence for the assessment of the transaction are often a fraction of the overall submission of the parties in a given case. However, even a small number of documents can have considerable probative value to an investigation, the quantity being generally irrelevant. In this case, the amount of potentially useful documents for demonstrating and corroborating the theory of harm developed is significant.²³
- (59) Third, for the purpose of a competition law assessment it is not decisive whether a document is authored by junior employees, sales staff or external consultants, for example, as long as it provides evidence of a conduct that a given company adopted - or is likely to adopt - in the market. As a general rule, the Commission does not accept any piece of evidence at face value, but analyses whether the overall body of evidence in its file is cogent enough to draw firm and reasonable conclusions from several types of evidence.
- (60) Fourth, the Notifying Parties propose a distinction between strategic views and tactical behaviour of a company in the market. For the purpose of a competition law assessment, the Commission must take into account the conduct that a given company actually adopted - or is likely to adopt - in the market. Moreover, the Notifying Parties argument would essentially lead to the unjustified conclusion that evidence relating to the intention to increase prices would not be relevant, because the strategic view of the senior management of that company is to fully comply with competition laws.
- (61) The Commission carried out its review of the Notifying Parties' internal documents in this case in the light of those principles.

5.1.2. *The customer survey proposed by the Notifying Parties*

- (62) The Notifying Parties have on several occasions submitted that the results of a Customer Survey carried out by GfK²⁴ on behalf of Solvay pre-Transaction (the "GfK Survey") would strongly support their arguments.

²² The Commission is under no obligation to provide a detailed assessment of all the documents in its file. That would be incompatible with the need for speed and the short timescales which the Commission is bound to observe when exercising its power to examine concentrations and which form part of the particular circumstances of proceedings for control of those concentrations. See Case T-79/12 *Cisco and others v Commission* Judgement of the General Court of 11 December 2013, Paragraphs 108-109 and case law cited therein.

²³ As explained in Section 9.1.2., INEOS' market strategy was detailed in numerous internal documents such as sales presentation, pricing notes, strategic analyses and market intelligence.

²⁴ Gesellschaft für Konsumforschung (Society for Consumer Research) is an international market research organization providing services in the three sectors Custom Research, Retail and Technology and Media.

- (63) As pointed out at Paragraph 41 of the Commission Notice on the definition of relevant market for the purpose of Community competition law (“Market Definition Notice”).²⁵

"The methodology followed in consumer surveys carried out ad hoc by the undertakings involved or their competitors for the purposes of a merger procedure or a procedure pursuant to Regulation No 17 will usually be scrutinized with utmost care. Unlike pre-existing studies, they have not been prepared in the normal course of business for the adoption of business decisions."

- (64) The Notifying Parties do not contest that the GfK Survey was conducted in contemplation of merger proceedings.²⁶ However, they submit that (i) customers' replies were genuine, as those replies were not tainted by the knowledge of the Transaction; and (ii) even if customers used the GfK Survey to convey a particular message to Solvay, who had no access to the identity of those customers, this would also apply to surveys in the context of merger proceedings.
- (65) The Commission regards the GfK Survey as biased and unreliable for the reasons set out in Recitals 66-71.²⁷
- (66) First, the fact that the GfK Survey was carried out on behalf of Solvay casts doubts on its reliability.²⁸ It is unlikely that customers, when questioned about their ability to switch to other S-PVC suppliers or to react to a price increase, would respond in a way that shows vulnerability. This is particularly true when those replies could reveal a strong dependence on one of the two top players in the market. On the contrary, it is likely that customers would overemphasise their ability to find alternative suppliers, knowing that these statements would be conveyed to Solvay. This is not comparable with customers trying to oppose a transaction because of genuine concerns. The Commission should discard poorly reasoned concerns and retain valid ones.
- (67) Second, Paragraph 41 of the Market Definition Notice refers to customers' surveys as an important investigative tool mainly with respect to consumer goods markets. These markets are generally characterised by a large number of consumers with relatively homogeneous features. For that reason, customer surveys appear to be an important instrument, which complements other investigative tools. The same does not apply to industrial goods markets - such as the market for Commodity S-PVC - which can involve business-to-business relationships, a smaller number of customers with some degree of differentiation.
- (68) Third, the Notifying Parties could not disclose the identity of the customers who participated in the GfK Survey due to the data protection rules enforced by GfK. For that reason, the Commission attempted to ascertain what companies participated and

²⁵ OJ C 372, 9.12.1997, p. 5.

²⁶ Response to the SO, Footnote 258.

²⁷ See Commission's Decision of 7 November 2012 in Case M.6471 - *Outokumpu / Inoxum* (2012), Paragraphs 436-443.

²⁸ The GfK template submitted to the Commission contained the following introduction: "*Good morning/afternoon/evening. My name is [●] from GfK, the market research company. We are carrying out a survey about the suspension polyvinyl chloride (S-PVC) market on behalf of SolVin.*"

what categories of individuals were involved in it. However, only one customer with whom the Commission held conference calls seems to have knowledge of this survey. Moreover, customers' representatives generally explained that major surveys such as the Commission's market investigation require the involvement of higher management, legal department and technical team. This does not appear to have been the case for the GfK Survey.

- (69) Fourth, the Notifying Parties have not provided the Commission with the raw data underlying the GfK Survey, apart from the final template of the survey and the results compiled by their economic consultant. In other words, the Commission could not analyse the correctness and truthfulness of the original responses. Moreover, the Commission could not identify customers which provided answers in order to better interpret the results of the survey. In the absence of further evidence demonstrating that the GfK Survey is sufficiently robust, its probative value is questionable at best. This limitation does not apply to the Commission's market investigation, to which access was granted to the Notifying Parties in order to guarantee their rights of defence.
- (70) Fifth, the GfK Survey seems to be essentially based on single and multiple choice questions,²⁹ without granting customers the possibility to elaborate on their answers. This methodology does not appear to be sufficient to grasp the complexity of the market for Commodity S-PVC, where, among other things, geographic differentiation plays a crucial role. This does not apply to the Commission's market investigation which consisted of several questionnaires, contained numerous questions on key topics, both single and multiple choice and free text questions, and was complemented with conference calls.
- (71) Sixth, the GfK Survey remains of limited actual value for the purpose of assessment of the Transaction. For instance, the Commission identifies significant likely anticompetitive effects as a result of the Transaction, regardless of the customers' ability to switch. This is also implicitly acknowledged in the economic simulation model based on Bertrand-Edgeworth competition (the "BE Model") submitted by the Notifying Parties to the Commission.³⁰
- (72) The Commission therefore concludes that the GfK Survey does not constitute a reliable piece of evidence and should be disregarded. The Commission will also show that the GfK Survey would not be of assistance to the Notifying Parties, given that its results are either inconclusive or even detrimental to them and in line with the Commission's findings.

5.1.3. *Interpretation of the results of the commitments market test*

- (73) At many stages of the proceedings, the Notifying Parties have stated that (i) the responses from competitors to the market testing of the commitments should be given more weight compared to those from customers; and (ii) the Commission's

²⁹ For instance, the GfK Survey contains Yes/No questions, as well as likelihood questions (very likely, quite likely, unlikely and very unlikely).

³⁰ See Recitals (1225) *et seq.* below.

questions in the market test were biased and therefore the resulting answers could not be considered as reliable.³¹

- (74) The Commission does not consider the criticism referred to in Recital 73 (i) as justified. The views of all market players may be relevant for the purposes of assessing the impact of a remedy package on the market. This is particularly true for customers, who would risk facing a price increase in case of ineffectiveness or unworkability of a remedy package.
- (75) The Commission however acknowledges that for the purposes of assessing certain more technical aspects in the context of remedy appraisal, it may be justified to give more weight to the views of competitors. For that reason, the Commission has carefully looked into the competitors' responses in the context of its appraisal of the remedies.
- (76) As regards the criticism referred to in Recital 73 (ii), the Notifying Parties voiced some concerns that some of the questions put to market participants - in particular customers - were either biased or leading.
- (77) The Commission notes that by its very nature a market test aims at gathering views on the suitability of a remedy package - along with all the relevant requirements - to address the competition concerns identified in a given case. In doing so, the Commission questions market participants on their market knowledge and experience - be it limited or extensive - relating to the assets the Notifying Parties offered to divest. In this context, it cannot be considered biased or leading to ask customers and competitors to identify any weaknesses, deficiencies or any other structural and non-structural issue that may affect the suitability of the remedy package in question. Contrary to Notifying Parties' claims, even negative feedback is of utmost importance, because if retained by the Commission³² it can allow them to improve their current proposal with a view to obtaining conditional clearance.
- (78) Moreover, the market test is only one of the instruments used by the Commission to assess the suitability of a remedy package. The Commission's assessment of the Notifying Parties' submissions and its economic and financial analysis are other important tools for that purpose. In this case, as the Notifying Parties are aware, the Commission could not market test important technical details of the remedy packages due to their confidential nature and, therefore, the market test could only complement the Commission's own assessment and analysis.
- (79) Finally, the Commission notes that the Notifying Parties launched, concurrently with the Commission's market test, a so-called "communication programme." This programme consisted of providing customers with documents (for instance, a letter or a presentation) illustrating several aspects of the remedy packages.³³ The Commission therefore considers that the Notifying Parties cannot credibly complain that the market test has been in any way biased. If anything, customers' replies may have been positively influenced by the said communication programme.

³¹ See in particular Notifying Parties' letter of 17 March 2014.

³² See by analogy Case T-102/96, *Gencor v Commission*, [1999] ECR II-753, Paragraph 291.

³³ See Notifying Parties' reply to the RFI of 18 March 2014.

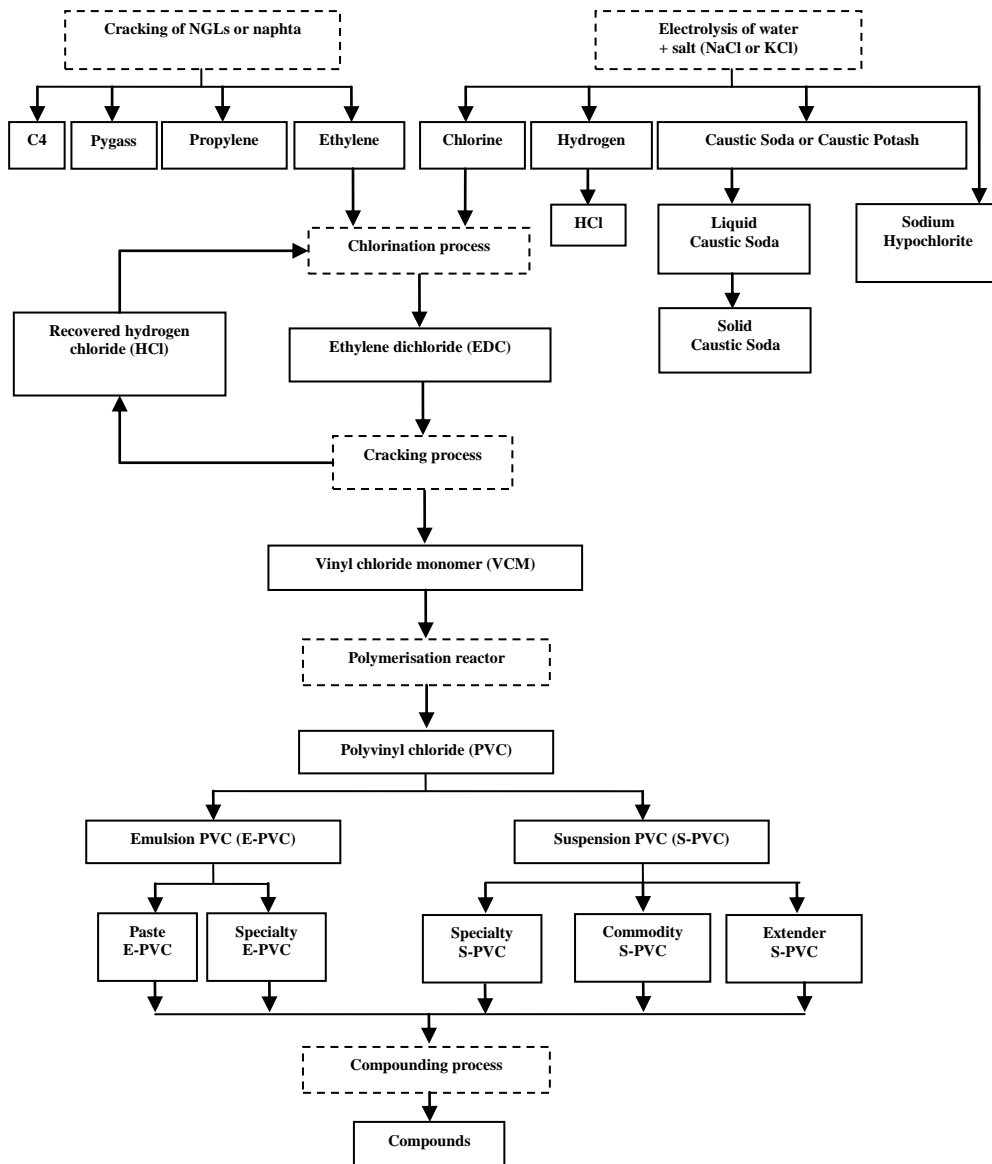
- (80) The Commission therefore concludes that the Notifying Parties' concerns as regards the market test in this case are unfounded.

6. INTRODUCTION TO THE PVC INDUSTRY

6.1. PVC, production process, main types and main applications

- (81) PVC is produced through an integrated chain of processes, in which ethylene and chlorine constitute the two main inputs.
- (82) The process begins by the cracking of natural gas liquids ("NGLs") or naphtha to produce ethylene and other by-products. The ethylene is subsequently chlorinated to produce EDC which, after a further cracking process, is transformed into VCM. The VCM is then polymerised into PVC.
- (83) The chlorine used in this process is produced through the electrolysis of salt and water, which also results in the production of a number of by-products sold by the Notifying Parties on the merchant market, notably caustic soda ("CS") and caustic potash, which the Commission understands being the most economically relevant by-products in the PVC vertical chain.

Figure 1: PVC Production Chain



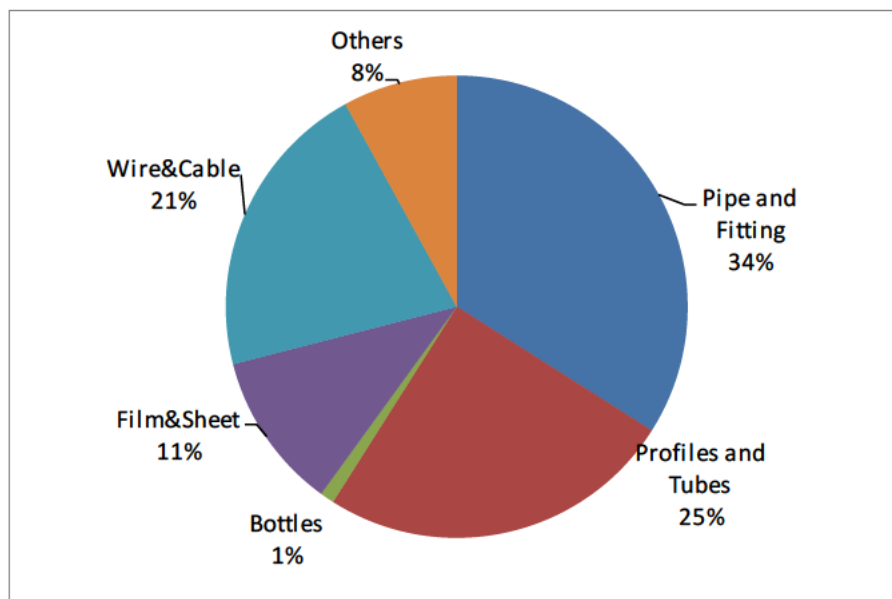
Source: Form CO

(84) The PVC production process follows three steps, as shown in **Figure 1**:

- Ethylene is chlorinated to produce EDC. The direct chlorination of ethylene requires about 300 kg of ethylene and 725 kg of chlorine per tonne of EDC.
- EDC is then cracked to obtain VCM. In principle, the production of 1 ton of VCM requires about 472 kg of ethylene and 600 kg chlorine.
- VCM is subsequently polymerised into PVC by joining small molecules (monomers) together to make a long chain (a polymer). The conversion of VCM to PVC in the polymerization step is close to 100%, but about 7% of the raw materials are lost in the entire production chain. The polymerization is a batch process which takes place in PVC reactors.

- (85) The polymerization of VCM described above can take two forms giving rise to S-PVC and E-PVC.
- (86) S-PVC is the most common type of PVC resin accounting for about 95% of the world's total production of PVC. According to the Notifying Parties' best estimates, in 2012 the market for commodity S-PVC (the main type of S-PVC) was worth EUR 3 175 million in the EEA.
- (87) S-PVC is used for both rigid (unplasticised) and flexible (plasticised) end-applications. Rigid applications include pipes, moulded fittings, and profiles (that is to say window and door frames). Flexible applications include films, sheets and cable insulation. Error! Reference source not found.2 shows how much each application represents out of the total market.

Figure 2: World Suspension Polyvinyl Chloride Demand by End Use (2012)



Source: Form CO

- (88) Before PVC can be used in any application, it needs to be "compounded", that is to say blended with other ingredients such as pigments and other materials in order to confer the desired characteristics on the final product. PVC is converted into end products through a variety of processes, including extrusion, continuous coating, blow moulding and injection.

6.2. PVC/CS, full chain margin and netback

- (89) Through chlorine, PVC and CS production are effectively linked in a fixed ratio. The production of one tonne of S-PVC also leads to the production of 0.66 tonne of CS. Therefore, this joint production creates an economic relationship between the two products. This is confirmed by the Notifying Parties' economic submission that explains that due to the existence of this joint production foregoing a sale of one tonne of PVC, with a content of around 0.6 tonnes of chlorine, in general means also giving up a sale of around 0.66 tonnes of CS. One tonne of S-PVC left unsold not

only implies a foregone margin on the tonne of S-PVC and also a foregone margin on the CS (adjusted).³⁴

- (90) The joint production has two main implications. First, PVC and CS production and sales decisions are intertwined and based on joint profits. In other words, a PVC supplier calculates profitability on the basis of a full chain margin that includes CS and also all the other by-products and eventually PVC and CS contribute to overall profitability.³⁵ PVC and CS have inherent counter-cyclicality: when PVC demand decreases, caustic production volumes drop, increasing caustic margins.³⁶
- (91) The Notifying Parties, when evaluating the efficiencies that the Transaction would create, compute profitability of S-PVC by netting off the profitability of CS. That is consistent with the Notifying Parties evaluating their overall profitability on the basis of a full chain margin assessment and thus evaluating CS and PVC profitability jointly.³⁷
- (92) That is also consistent with the pricing formula contained in the contract that INEOS signed with Dow Europe GmbH ("Dow", Germany), another major player in the chemical industry, for the supply of VCM to one of its S-PVC plants in Germany, Schkopau. The pricing formula is designed to access the profit of the full production chain and, in particular, the profit resulting from the sale of CS. Likewise, Solvay's internal documents show that, [...]*. This confirms that CS is used as a negative cost in the PVC production chain and also in that context the cost of chlorine was negative.³⁸
- (93) As mentioned, PVC and CS are countercyclical, that is to say when profitability in PVC is low the profitability of CS is high and vice-versa. CS can thus effectively be used to hedge both short term large demand shocks and medium term price trends in the PVC market. In extreme cases, it might even be possible for PVC suppliers to sustain losses in one market, if margins on the other market are strong.³⁹
- (94) On the basis of the dataset provided by the Notifying Parties, the Commission has also computed the evolution of INEOS' S-PVC and CS prices as well as INEOS' S-PVC and CS margins. **Figure 3** confirms the counter-cyclicality of the S-PVC prices and the CS prices and **Figure 4** shows how the position in both S-PVC and CS markets smoothed the large economic shock in 2008-2009, helping to preserve the overall profitability of the INEOS' PVC production chain.

³⁴ CRA, BE Model for the S-PVC industry, 9 September 2013.

³⁵ This logic also applies to caustic potash, another chemical resulting from the electrolysis of water and salt.

³⁶ INEOS' internal documents, "EUR 250 m Equity Issue - Investor Presentation - February 2011", INEOS_SET2_14_11_RFL_00000167, Page 24.

³⁷ The Boston Consulting Group, "Synergies from potential JV" of February 2013.

³⁸ Solvay's internal document, [...] of 2011.

³⁹ Kerling PLC 2012 Annual Report to Bondholders, Page 25 ("[...]".)

**Figure 3: INEOS S-PVC and CS (NaOH) Average Price Evolution
in NWE (EUR/tonne)**

[...]*

Source: Notifying Parties' data

**Figure 4: INEOS Total Chain Margin, S-PVC and CS (NaOH) Margin Evolution
in NWE (EUR/tonne)⁴⁰**

[...]*

Source: Notifying Parties' data

6.3. Vertical integration and the European model

- (95) Historically, the European petrochemical industry has characterised by the creation of national champion companies, active in several chemical products and largely vertically integrated. The majority of S-PVC suppliers were historically active in the chlorine industry for the production of CS and diversified downstream into S-PVC as an outlet for chlorine.
- (96) Over the last 20 years, financial markets have pushed for a break-up of those integrated players, mainly for short term reasons. In particular, private equity companies and investment funds entered the sector because of the temporary high growth of the construction industry and lower oil prices. This is no longer the case in today's economy.
- (97) That breaking-up of fully vertically integrated chains has exposed non-vertically integrated players to risks and crisis, namely, the cyclicity of some chemical products and of the economy in general, which could in the past be hedged through presence at different levels of the supply chain.
- (98) The Kem One case in France has shown how problematic that breaking-up can be. In 2004, Total S.A. ("Total", France) restructured its portfolio and shed some of its activities, creating the Arkema Group ("Arkema", France). In 2012, Arkema sold its PVC business to the Klesch Group (Switzerland), creating Kem One (France). As a result, Kem One lost its vertical integration up to ethylene and now has to buy this key raw material, mainly from the previous owner Total. Kem One has suffered severe financial distress and filed for insolvency with the Commercial Court of Lyon.⁴¹ On 27 March 2013, the Court formally opened receivership proceedings

⁴⁰ The transportation cost data of INEOS underreports the true transportation costs before 2010 for the Barry, Runcorn, Schkopau and Wilhelmshaven plants. Therefore INEOS' average margins in 2007, 2008 and 2009 are smaller than the one indicated in the Figure.

⁴¹ As explained by Kem One (the Klesch Group) "One of the main problems of Kem One resides in the acquisition price for ethylene from Total. Ethylene trades at a discount and currently, Kem One has historically enjoyed a 5-6% discount, while, in order to be competitive it would need a far greater discount of circa 20% discount (which is the discount the INEOS and Solvay enjoy through direct ownership of steam crackers). Kem One requested a discount of 17%, but it did not reach an agreement

("redressement judiciaire") and appointed an official receiver to take full charge of Kem One's administration for an interim period. On 13 December 2013, the Commercial Court of Lyon concluded the *redressement judiciaire* and Kem One was eventually acquired by a partnership established between Open Gate Capital ("Open Gate", United States) and Mr Alain de Krassny.

(99) In short, this is how INEOS itself describes the process of breaking up in the industry:

[...]*⁴²

(100) Today, S-PVC suppliers in the EEA are essentially vertically integrated players up to chlorine, one of the two key inputs for producing PVC. By contrast, few players are integrated into ethylene, the other key input accounting for the largest share of S-PVC production costs. For that reason, good access to ethylene constitutes a crucial element in the industry.

(101) As regards ethylene, INEOS currently secures access to ethylene for its EDC/VCM production units in Tessenderlo through the ARG pipeline,⁴³ via vertical integration into a cracker at Rafnes, Norway,⁴⁴ through the United Kingdom, pipeline at Runcorn⁴⁵ and from [...]* ([...]*), [...]* and [...]*. Likewise, Solvay's NWE capacity is well connected to the ARG+ pipeline, except for its plant in Tavaux. This latter is connected to the French network and fed by the Feyzin cracker, in which Solvay has a 42.5% interest.

(102) The analysis of the internal documents of the Notifying Parties confirms that view.⁴⁶ The Notifying Parties claim that better access to inputs is also one of the efficiencies that the Transaction will bring to the JV. This further confirms the strategic need for S-PVC suppliers to secure favourable access to ethylene.

(103) As regards chlorine, three main levels of integration can be envisaged in the European PVC industry:

- Model 1 - Fully vertically integrated player: in this case, three main raw materials are required to produce PVC: ethylene, energy and salt/brine.⁴⁷ On average, the Notifying Parties consider that ethylene and energy account for approximately 70% of PVC production costs.⁴⁸

with Total, which led to 100 million Euro losses in 6 months." Non-confidential version of agreed minutes of a conference call with Mr Gary Klesch - Kem One of 19 July 2013 ID3645.

⁴² INEOS' internal document, "PROJECT IPSWICH: Management Presentation Q&A" of 3 September 2009, Page 11 INEOS_SET2_14_11_RFI_00000044.

⁴³ ARG operates a pipeline grid linking Antwerp to Cologne and the Ruhr industrial area, used for ethylene transport. ARG also connects the market in Rotterdam.

⁴⁴ A cracker is a piece of equipment that breaks down complex organic molecules and, in this case, is used for producing ethylene.

⁴⁵ In various internal documents (for example "Kerling RAP FINAL.ppt", Page 13; and "Kerling Background Info ppt", Pages 3-4), INEOS [...]*.

⁴⁶ For instance, see Solvay's internal document, "[...]* SOLVAY_14_11_RFI_00002662.

⁴⁷ Form CO, Section 6, Part A, "Commodity S-PVC", Annex A2, Paragraph 1.2(C) ("*... the main raw materials will be ethylene (accounting for approximately 50-60% of the total production costs) and electricity (approximately 15-20% of production costs).*") The Commission understands that brine/salt accounts for a very reduced amount of PVC production costs, compared with ethylene and electricity.

⁴⁸ Form CO, Section 6, Part A, "Commodity S-PVC", Paragraph 6.161.

- Model 2 - Partially integrated player: in this case, raw materials will depend on the specific set-up of each player.⁴⁹ The Commission understands that the most likely scenarios comprise a set-up including either
 - (a) EDC/VCM/PVC production assets, with a dependence on third parties for chlorine; or
 - (b) VCM/PVC production assets, with a dependence on third parties for EDC.
 - Model 3 - Standalone non-integrated PVC plant: in this case, the main raw material will be VCM, which accounts for 80-85% of S-PVC production costs.⁵⁰
- (104) The Notifying Parties argue that - in the rest of the world – S-PVC suppliers are not necessarily vertically integrated up to chlorine and do operate successfully businesses such as Shin-Tech Inc. ("Shin-Tech", Japan) and Mexichem S.A.B. de C.V. ("Mexichem", Mexico). Moreover, in Asia, the non-integrated business model would be the most common.⁵¹
- (105) According to the Notifying Parties, vertical integration can be effectively replicated through EDC or VCM supply contracts, which can be structured in a way that mimics actual vertical integration. That system is referred to as “virtual” vertical integration. In other words, contractual access to a share of the full chain margin from chlorine to PVC production (including caustic netback) is sufficient for an S-PVC business to be successful. In the opinion of the Notifying Parties, the supply contracts between INEOS and Dow for VCM and between Shin-Etsu Chemical Co., Ltd ("Shin-Etsu", Japan) and Akzo Nobel N.V. ("Akzo", the Netherlands) for chlorine, which have been in place for many years, demonstrate that this would be the case.
- (106) While the Commission does not contest that this business model may exist in other continents (and competitive scenarios), it observes that this is the exception in the EEA. Furthermore, vertical integration up to chlorine (and even up to ethylene) is the chosen business model of the main United States PVC suppliers such as Formosa Plastics Corporation U.S.A. (“Formosa Plastics”),⁵² Westlake Chemical Corporation (“Westlake”)⁵³ and Axiall's Corporation (“Axiall”).⁵⁴

⁴⁹ Form CO, Section 6, Part A, "Commodity S-PVC", Annex A2, Paragraph 1.2(B) ("... *the main raw materials will be ethylene (approximately 50-60% of total production costs), chlorine and/or EDC (approximately 10-20% of production costs, depending on the level of industrial integration)*").

⁵⁰ Form CO, Section 6, Part A, "Commodity S-PVC", Annex A2, Paragraph 1.2(A) ("*VCM purchases will account for 80-85% of the PVC production cash costs. The remaining 15-20% of production costs will be accounted for by inputs to the polymerisation process (such as additives)*").

⁵¹ Notifying Parties' submission of 25 September 2013 titled "Vertical Integration in the S-PVC Industry in the EEA."

⁵² Formosa Plastics is a vertically-integrated producer of PVC, VCM, EDC, chlorine, caustic soda, commercial bleach, hydrochloric acid and other plastic resins and petrochemicals. Being vertically integrated up to natural gas, Formosa Plastics considers that "One important way in which we differentiate ourselves in our marketplaces is through the extensive vertical integration of our supply chain." See Formosa's Plastic website <http://www.fpcusa.com/about.html>, retrieved on 6 January 2014.

⁵³ Westlake is vertically integrated up to ethylene, which is mostly used for their internal needs in the polyethylene and vinyls businesses. See Westlake's website <http://www.westlakechemical.com/fw/main/Vinyls-97.html> retrieved on 6 January 2014.

- (107) As regards the two main examples cited by the Notifying Parties, Mexichem and Shin-Tech, the Commissions observations are set out in Recitals 108-109.
- (108) Occidental Petroleum Corporation ("OxyChem", United States) recently announced the formation of a 50/50 joint venture with Mexichem to build an ethylene cracker at the OxyChem plant in Ingleside, Texas, with a capacity of 1.2 billion-pounds per year. All of the ethylene produced from the cracker will be used to produce VCM, which will in turn be delivered to Mexichem's PVC plants.⁵⁵ It is evident that Mexichem - one of Notifying Parties' main examples - considers vertical integration an important business driver and a significant competitive advantage.⁵⁶
- (109) Shin-Tech, the largest producer of PVC in the United States, does have an on-going chlorine purchase agreement with Dow, but it is also vertically integrated up to chlorine. It operates a chlor-alkali-vinyl complex in Louisiana, which provides part of the input necessary for producing PVC.
- (110) With regard to the current situation of the European PVC industry, the Notifying Parties are themselves vertically integrated players up to chlorine, either on-site or via intragroup shipments of raw materials, also called "ownership integration", that is to say they are structured according to the Model 1 described at Recital 103 (i). Based on the information available to the Commission, this is also true for almost all their competitors in the European PVC industry, that is to say Anwil S.A. ("Anwil", Poland), BorsodChem Zrt ("BorsodChem", Hungary), Ercros S.A. ("Ercros", Spain), Fortischem a.s. ("Fortischem", Slovakia), Kem One, Vinnolit GmbH&Co KG ("Vinnolit", Germany) and Vestolit GmbH ("Vestolit", Germany).
- (111) Shin-Etsu is the only exception to this rule. Shin-Etsu is vertically integrated up to EDC / VCM, but not up to chlorine, that is to say they are structured according to the Model 2 described at Recital 103 (ii). Shin-Etsu entered the market via the acquisition of Rovin, a joint venture between Royal Dutch Shell plc ("Shell", United Kingdom and the Netherlands) and Akzo and has long standing supply contracts with Shell for ethylene and with Akzo for chlorine.⁵⁷ This relationship thus results from a specific historical context.
- (112) Ercros, a fully vertically integrated player, has recently decided to rely on EDC purchases, but only to a limited extent in addition to its internal production. That decision stems from a number of factors, among which a particularly favourable pre-existing logistical arrangement, the economic condition of the Iberian Peninsula and the challenge posed by mercury conversion.⁵⁸

⁵⁴ Axiall's chlorovinyls segment consists of a highly integrated chain of products that include electro-vinyl products, compound products and chlorine-based products. Axiall is North America's third largest producer of chlor-alkali and second largest producer of VCM. See Axiall's website <http://www.axiall.com/product-chlorovinyls.aspx>, retrieved on 6 January 2014.

⁵⁵ See OxyChem's website <http://newsroom.oxy.com/news/oxy/20131031006351/en>, retrieved on 6 January 2014.

⁵⁶ Non-confidential version of the agreed minutes of a conference call with Mexichem of 10 July 2013 and 27 November 2013 ID5206 and ID5292.

⁵⁷ Non-confidential version of the agreed minutes of a conference call with Shin-Etsu of 2 October 2013 ID3666.

⁵⁸ Mercury technology used for chlorine production needs to be phased-out by 2020. National authorities are entitled to impose shorter deadlines.

- (113) INEOS' (S-PVC) plant and Vinnolit's (E-PVC) plant in Schkopau also depart from the general rule, as they source VCM from Dow to produce PVC, that is to say they are structured according to the Model 3 described at Recital 103 (iii). Schkopau was originally part of a fully integrated vertical chain owned by Dow. These plants are embedded in the premises of their previous owners. Their current situation is the result of specific arrangements for the supply on-site, without incurring transport costs, of certain raw materials by their previous owners.
- (114) As noted in Recital 98, Kem One, formerly part of Arkema, is probably the company that suffered the most from the break-up of a vertically integrated chemical chain. Its view is therefore very illustrative. Kem One believes that vertical integration as far as possible upstream constitutes an important advantage when facing problems such as high price of inputs, *force majeure* events, financial crisis, low demand and lack of cash. Sourcing raw materials within a group of companies presents many advantages compared to sourcing them from an external provider. As owner of the entire chain, when market conditions are difficult, an S-PVC supplier can maximize its financial position by shifting margins from one part of the supply chain to the other, which is different from buying all the raw materials at market prices.⁵⁹
- (115) Kem One even suggests that "*Integration proves to be the only way to be competitive in the PVC business: the lack of integration leads to a strong competitive disadvantage, although operators may attempt to "survive" by having a little niche market or charging a premium.*"⁶⁰
- (116) Therefore, the Commission considers that the current competitive landscape indicates that full vertical integration is the general trend in the industry.

6.4. Supply side of the Commodity S-PVC market

- (117) S-PVC is produced via the polymerization of VCM in water with an initiator. That reaction is carried out in an autoclave where the raw materials are dispersed in demineralized water under vigorous agitation. Following polymerisation and further processing, S-PVC takes the form of a coarse porous white powder.
- (118) The production of S-PVC is a batch process. A batch process consists in the intermittent introduction of raw materials and may entail varying process conditions and output with different characteristics.
- (119) There are three types of S-PVC: Commodity S-PVC, Extender S-PVC and Speciality S-PVC. The production processes for these three types of S-PVC differ. Extender S-PVC is characterised by particles of smaller size, which is achieved by different VCM reactor conditions such as the stirring rate and the anti-coagulant stabilisers used. Speciality S-PVC is produced with the addition of a co-monomer during the polymerisation stage.
- (120) Commodity S-PVC is the most common S-PVC resin and is mainly used for pipes and rigid profiles. Extender S-PVC is used for dispersion resins to provide specific plastisols and compound characteristics as well as to reduce costs and to improve

⁵⁹ Non-confidential version of agreed minutes of a conference call with Kem One of 23 November 2013 ID5216.

⁶⁰ Non-confidential version of the agreed minutes of a conference call with Mr Gary Klesch - Kem One of 19 July 2013 ID3645.

physical properties. Specialty S-PVC is used in specialty applications, both rigid applications (such as bottles, sheets, fittings etc.) and flexible applications (such as wire and cable film, flexible profiles and tubes, coating, etc.).

- (121) There are various grades of Commodity S-PVC determined by their molecular weight, commonly called K-value. This is achieved by adjusting the pressure (that is to say temperature) and duration of the polymerisation process. Typically, S-PVC suppliers produce Commodity S-PVC within the following range: K-values K55-K80. To produce Commodity S-PVC with particularly low K-values such as K48, the reactors need to operate at higher temperatures and pressure. Conversely, to produce Commodity S-PVC with particularly high K-values such as K80, specialised additives are needed. As S-PVC is produced in batches, different K-values can be produced on the same production line. The shift from one K-value to another entails a certain loss of productivity, because S-PVC suppliers must clean the reactors to avoid cross contamination between different K-values. Of course, the closer the K-values produced on the same line, the lower the contamination risks between the different S-PVC K-values.
- (122) Different S-PVC grades may correspond to a number of different end-use properties ranging from rigid applications such as pipes, window profiles and moulded fittings to more flexible end-applications such as cable insulation and flexible tubes for crystal clear medical products. Each application is not confined to only one type of K-value.
- (123) In the EEA, S-PVC is currently produced or imported by eleven companies: INEOS, Solvay, Vinnolit, Vestolit, Kem One, Shin-Etsu, Ercros, Anwil, BorsodChem, Fortischem and Mexichem. Mexichem is the only significant importer.⁶¹ The Notifying Parties' activities will be described in Section 6.4.2. and their competitors are described in Section 6.4.1.

6.4.1. *The Notifying Parties' competitors*

6.4.1.1. Kem One

- (124) Kem One is a PVC supplier based in France, once part of the Arkema's vinyl business and later of the Klesch Group. Kem One's turnover in 2012 amounted to EUR 1.1 billion.⁶²
- (125) Kem One has five PVC plants: Berre, Balan, Saint-Auban, Saint-Fons (all in France) and Hernani (Spain). Only Berre, Balan and Saint-Fons produce S-PVC. Kem One is vertically integrated up to chlorine, but not on-site. The S-PVC plants are supplied internally with VCM from Kem One's plants in Lavera and Fos through a dedicated

⁶¹ The Commission understands that another S-PVC supplier, Oltchim, is currently out of business (Letter addressed to the Commission on 20 September 2013 ID2283). In fact, on the basis of the Notifying Parties' submission it has produced only a very limited amount of S-PVC in 2012 (18 kt) and no sales have been done in the same year.

⁶² See Kem One's website: <http://www.kemone.com/fr/Groupe/Faits-et-chiffres>, visited on 8 January 2014.

logistical system.⁶³ Only Fos has converted its mercury cell rooms to membrane, whilst Lavera did not.⁶⁴ The deadline for conversion is the end of 2019.⁶⁵

- (126) Based on the Notifying Parties' own best estimates, Kem One's S-PVC capacity amounted to [...] kilo tonnes per year ("kt/y") in 2012,⁶⁶ with an utilization rate of [...] % and a spare capacity of [...] kt/y.⁶⁷
- (127) Kem One has been going through serious financial difficulties in recent years. Those financial problems will be discussed in more detail in Section 9.1.5.1.

6.4.1.2. Shin-Etsu

- (128) Shin-Etsu is a Japanese-based chemical company with an overall yearly turnover exceeding YEN 1 billion.⁶⁸ It is active in the United States through Shin-Tech, which is the largest United States producer of PVC.
- (129) In the EEA, Shin-Etsu currently operates only two S-PVC plants, one in the Netherlands (Pernis) and one in Portugal (Estarreja) with a production capacity of 450 kt/y in Pernis and 210 kt/y in Estarreja.⁶⁹ Based on the Notifying Parties' own best estimates, the utilization rate of Shin-Etsu's plants amounted to [...] %, with a spare capacity of around [...] kt/y in 2012, of which [...] kt in NWE.⁷⁰
- (130) As previously explained, Shin-Etsu is vertically integrated up to EDC / VCM, but not up to chlorine, and has long standing supply contracts with Shell for ethylene and with Akzo for chlorine. For its plant in Portugal, Shin-Etsu buys some small quantities of VCM on a spot basis. Shin-Etsu also mentioned that up to 2012 it had a supply contract with INEOS, but subsequently that could not be renewed on economically acceptable terms.⁷¹
- (131) Shin-Etsu production in Pernis is 100% Commodity S-PVC, while in Estarreja it also produces E-PVC and other products.⁷²

6.4.1.3. Vinnolit

- (132) Vinnolit is a German PVC supplier. It is a fully owned subsidiary of Vinnolit Holdings GmbH. The main shareholders of Vinnolit Holdings GmbH are private

⁶³ Non-confidential version of the minutes of the conference call with Kem One of 23 November 2013 ID5216.

⁶⁴ Non-confidential version of the minutes of the conference call with Mr Klesch - Kem One of 19 July 2013 ID3645.

⁶⁵ Notifying Parties' response to the RFI of 12 June 2013, Annex 3 "Conversion requirements for plants producing CSL".

⁶⁶ Form CO, Section 6, Part A "Commodity S-PVC", Annex A 22.

⁶⁷ Form CO, Section 6, Part A "Commodity S-PVC", Table A 6.9. The Notifying Parties did not communicate the spare capacity excluding copolymers and HIS PVC.

⁶⁸ See Shin-Etsu website: http://www.shinetsu.com.tw/en_company.html, visited on 20 December 2013.

⁶⁹ Non-confidential version of the minutes of the conference call with Shin-Etsu of 17 May 2013 ID5213. The Notifying Parties estimate Shin-Etsu's capacity in [...] kt.

⁷⁰ Form CO, Section 6, Part A "Commodity S-PVC", Table A 6.9.

⁷¹ Non-confidential version of the minutes of the conference call with Shin-Etsu of 2 October 2013 ID3666.

⁷² Non-confidential version of the minutes of the conference call with Shin-Etsu of 17 May 2013 ID5213.

equity funds under the management of Advent International (United States). Vinnolit had a turnover of EUR 905 million in 2012.⁷³

- (133) Vinnolit has five production sites located in Germany (Burghausen, Gendorf, Cologne, Knapsack, Schkopau) and one in the United Kingdom (Hillhouse).
- (134) Commodity S-PVC is only produced in Knapsack and Cologne.⁷⁴ Based on the Notifying Parties' own best estimates,⁷⁵ Vinnolit's S-PVC total capacity in 2012 amounted to [...] kt/y⁷⁶ with a spare capacity of [...] kt/y.⁷⁷ According to the Notifying Parties' response to the RFI of 18 November 2013, Vinnolit's commodity S-PVC capacity would be [...] kt/y, but if the fact that, as mentioned in this Recital, Commodity S-PVC is produced only in Knapsack and Cologne, was taken into account, then Vinnolit's capacity would be reduced to [...] kt/y, at most.⁷⁸
- (135) Vinnolit purchases ethylene, salt and electricity from third parties, but sources its chlorine, EDC and VCM internally. Only Knapsack is a vertically integrated S-PVC plant on-site. Cologne is supplied with VCM by vessel and pipeline by Knapsack, which is 40 km away from Cologne. From time to time, Vinnolit buys additional quantities of VCM for its plant in Knapsack.⁷⁹ All other plants and the majority of Vinnolit's capacity are dedicated to the production of E-PVC and specialty S-PVC. That is also the result of the acquisition by Vinnolit of INEOS' plants in Hillhouse and Schkopau in 2007.⁸⁰ Therefore, Speciality S-PVC is Vinnolit's strategic focus.⁸¹

6.4.1.4. Vestolit

- (136) Vestolit is a German PVC supplier, who had turnover in 2012 of EUR 473 million.⁸²
- (137) It has only one production site in Marl, Germany, which is vertically integrated up to chlorine with a membrane process technology. To balance its production, Vestolit from time to time buys both EDC and VCM on the merchant market.
- (138) Based on the Notifying Parties' own best estimates, Vestolit S-PVC total capacity amounted in 2012 to [...] kt/y,⁸³ with a spare capacity of [...] kt/y.⁸⁴ According to

⁷³ See Vinnolit's website: http://www.vinnolit.de/vinnolit.nsf/id/EN_Company, visited on 20 December 2013.

⁷⁴ Non-confidential version of the minutes of the conference call with Vinnolit of 19 November 2013 ID4859.

⁷⁵ Unless differently indicated, all capacity and overcapacity data included in this Section are estimates on the basis of the Notifying Parties submission in the Form CO, Annexes A22 and A26 and the Notifying Parties' Reply to the RFI of 18 November 2013.

⁷⁶ Form CO, Section 6, Part A "Commodity S-PVC", Annex A 22.

⁷⁷ Form CO, Section 6, Part A "Commodity S-PVC", Table A 6.9. The Notifying Parties did not communicate the spare capacity excluding copolymers and HIS PVC.

⁷⁸ Form CO, Section 6, Part A "Commodity S-PVC" Annex A1, Table 4.1.

⁷⁹ Non-confidential version of the minutes of the conference call with Vinnolit of 19 November 2013 ID4859.

⁸⁰ Commission's decision of 30 January 2008 in Case No. M. 4572 - *Vinnolit / INEOS CV Specialty PVC Business*.

⁸¹ Non-confidential version of the minutes of the conference call with Vinnolit of 17 May 2013 ID5225.

⁸² Reply of Vestolit to question 3 - Phase I Questionnaire to competitors (S-PVC) ID2447.

⁸³ Form CO, Section 6, Part A "Commodity S-PVC", Annex A 22.

⁸⁴ Form CO, Section 6, Part A "Commodity S-PVC", Table A 6.9. The Notifying Parties did not communicate the spare capacity excluding copolymers and HIS PVC.

the Notifying Parties' response to the RFI of 18 November 2013, Vestolit's capacity, excluding HIS-PVC, is [...] kt/y.

- (139) Co-polymers are Vestolit's main product and account for approximately [60-70]*% of its production.⁸⁵ As a consequence, in 2012 Vestolit's Commodity S-PVC production amounted to only [...] kt/y.

6.4.1.5. Ercros

- (140) Ercros is a Spanish supplier of S-PVC and had a turnover of EUR 699 million in 2012.⁸⁶

- (141) Ercros produces S-PVC in one production site in Vilaseca. On that site Ercros produces chlorine, caustic soda, EDC, VCM and S-PVC. The mercury technology accounts for 60% of the cellrooms capacity, but Ercros intends to convert it by the deadline 2017-2018.⁸⁷ Currently, Ercros sources part of its EDC needs from the merchant market. Ercros can purchase EDC at competitive conditions because of its particular position, further explained in Section 11.1.2.

- (142) Based on the Notifying Parties' own best estimates, Ercros' S-PVC capacity amounted to [...] kt/y in 2012, with a utilization rate of [...] % and a spare capacity of [...] kt/y.

6.4.1.6. Anwil

- (143) Anwil is a Polish based supplier of S-PVC and had a turnover of EUR 802 million in 2012.⁸⁸

- (144) Anwil operates two S-PVC plants in Neratovice (Czech Republic) and Wloclawek (Poland), which are mainly used for the production of commodity S-PVC. According to IHS, Anwil is the only European PVC producers that is effectively 100% integrated up to ethylene.⁸⁹ The plant in Neratovice is still operating on mercury technology, while the Wloclawek plant has membrane cellrooms.⁹⁰ The deadline for cellrooms conversion is the end of 2019.⁹¹ Anwil relies on third party EDC/VCM only in case of disruptions to its own EDC/VCM chain, such as *force majeure* events.

- (145) Based on the Notifying Parties' own best estimates, Anwil's S-PVC capacity amounted to [...] kt/y in 2012, with a utilization rate of [...] % and a spare capacity of [...] kt/y.

⁸⁵ Proportion based on Notifying Parties' production market shares.

⁸⁶ Reply of Ercros to question 3 - Phase I Questionnaire to competitors (S-PVC) ID2562.

⁸⁷ Reply of Ercros to question 56 - Phase I Questionnaire to competitors (S-PVC) ID2562.

⁸⁸ Reply of Anwil to question 3 - Phase I Questionnaire to competitors (S-PVC) ID 3994.

⁸⁹ IHS 2013 World Analysis - Vinyls, Page 185.

⁹⁰ INEOS' internal document, "European PVC Companies", updated in January 2012, INEOS_14_11_RFI_00000148, Page 3.

⁹¹ Notifying Parties' Reply to the RFI of 12 June 2013, Annex 3 "Conversion requirements for plants producing CSL".

6.4.1.7. BorsodChem

- (146) BorsodChem is a Hungarian PVC supplier. Since February 2011, it has been part of the Wanhua Industrial Group, a Chinese company with a turnover of USD 2.6 billion in 2012.⁹²
- (147) BorsodChem produces only commodity S-PVC in one single plant located in Kazincbarcika (Hungary). BorsodChem is vertically integrated on-site up to chlorine and EDC/VCM. The company sources all its chlorine, EDC and VCM internally. The mercury cell room was built in 1971 and the membrane cell room added in 2007.⁹³ The deadline for chlorine cellrooms conversion is the end of 2019.⁹⁴
- (148) Based on the Notifying Parties' own best estimates, BorsodChem's S-PVC capacity amounted to [...] kt/y in 2012, with a utilization rate of [...] % and a spare capacity of [...] kt/y.

6.4.1.8. FortisChem

- (149) FortisChem a.s. ("FortisChem"), a subsidiary of EnergoChemica SE, was set up in August 2012. On the same year, it acquired Novacke a bankrupt Slovak PVC company.⁹⁵ Consequently, FortisChem's efforts are concentrated on the reconstruction of its predecessor's commercial activities.
- (150) It produces mainly commodity S-PVC in its only production site in Novacke (Slovakia). FortisChem is integrated on-site up to chlorine, EDC and VCM and sources all of these materials internally.⁹⁶ As its chlorine cellrooms are still based on mercury technology, the deadline for conversion being 2020, FortisChem intends to build a new non-mercury based chlorine plant and close down the existing one.⁹⁷
- (151) Based on the Notifying Parties' own best estimates, FortisChem's S-PVC capacity amounted to [...] kt/y in 2012, with a utilization rate of [...] % and a spare capacity of [...] kt/y.

6.4.1.9. Mexichem

- (152) Mexichem, a company that had a turnover of EUR 1 549 million in 2012,⁹⁸ does not have any European PVC production facilities. It is however setting up local offices in Italy and the United Kingdom and storage capacity in the United Kingdom, Italy and Germany.
- (153) Mexichem is currently not a fully integrated player, as it sources its VCM externally. However, Mexichem plans to address that structural issue by becoming VCM self-sufficient and is involved in different projects to this end, as explained in Section

⁹² See Wanhua Industrial Group's website: <http://www.ytpu.com/english/en/about/default.shtml>, visited on 20 December 2013.

⁹³ INEOS' internal document, "European PVC Companies", updated in January 2012, INEOS_14_11_RFI_00000148, Page 5.

⁹⁴ Notifying Parties' Reply to the RFI of 12 June 2013, Annex 3 "Conversion requirements for plants producing CSL".

⁹⁵ See <http://www.camcomit-sk.com/index.php/opportunita/199-daily-monitoring-slovacchia-02082012.html>, retrieved on 20 December 2013.

⁹⁶ Reply of FortisChem to questions 43, 45 - Phase I Questionnaire to competitors (S-PVC) ID4710.

⁹⁷ Reply of FortisChem to question 56 - Phase I Questionnaire to competitors (S-PVC) ID4710.

⁹⁸ Reply of Mexichem to question 3 - Phase I Questionnaire to competitors (S-PVC) ID2457.

11.1.2. Mexichem has an overall S-PVC production capacity of over 1 000 kt/y, while local demand in Mexico and Colombia only accounts for 40% of that capacity. Mexichem therefore uses the remaining part of its capacity for exports all over the world. At the moment Mexichem exports to South America, EEA, Turkey, United States and India.

- (154) According to the Notifying Parties best estimates, in 2012 Mexichem had [0-5]*% market shares in NWE ([0-5]*% in the EEA).⁹⁹ In 2012, Mexichem has also acquired Wavin B.V. ("Wavin", the Netherlands), a European company specialised in the manufacture and supply of pipe systems and solutions, which uses S-PVC as raw material.
- (155) In spite of the apparently significant number of competitors active in this market, the large majority of sales in NWE (as well as in NWE+)¹⁰⁰ is accounted for by a few players, as it will be discussed in greater detail in Section 9.1. below.

6.4.2. *The Notifying Parties' PVC activities*

- (156) Solvay produces S-PVC at its plants in Rheinberg (Germany), Martorell (Spain), Jemeppe (Belgium) and Tavaux (France). According to the Notifying Parties' best estimates, in 2012 it had an EEA capacity of [...] kt/y, of which [...] in NWE.¹⁰¹ Solvay had a spare capacity of [...] kt/y in the EEA and [...] kt/y in NWE, in the same year.
- (157) INEOS produces S-PVC at its plants in Schkopau (Germany), Wilhelmshaven (Germany), Aycliffe (United Kingdom), Stenungsund (Sweden), Porsgrunn (Norway), Beek Geleen (Netherlands) and Mazingarbe (France). According to the Notifying Parties' best estimates, in 2012 it had an EEA capacity of [...] kt/y - all located in NWE - and a spare capacity of [...] kt/y.¹⁰²
- (158) Whilst INEOS only produces Commodity S-PVC, Solvay also produces speciality S-PVC. Neither Party produces Extender S-PVC.¹⁰³
- (159) The production sites referred to in Recitals 156 and 157 will be transferred to the JV, together with the up-stream plants related to the production of PVC.
- (160) Solvay will transfer two chlorine plants and an EDC/VCM plant in Rheinberg (Germany), a chlorine plant and an EDC/VCM plant in Martorell (Spain), salt/brine, a chlorine plant and an EDC/VCM plant in Jemeppe (Belgium), two chlorine plants

⁹⁹ Form CO, Section 6, Part A, "Commodity S-PVC", Table A 6.7.

¹⁰⁰ NWE plus Austria, Finland, Italy and Switzerland. See Section 7.2.

¹⁰¹ The Commission observed some inconsistencies in Solvay's capacity figures. For example, the capacity figures contained in Annex A1 and Annex A2 of the Form CO do not match the data that was informally submitted pre-Transaction. In response to the Commission's RFI of 19 September 2013, Solvay provided new capacity figures on 23 September 2013. In Annex 1 to its response, Solvay declares an overall capacity of [...] kt in NWE (Rheinberg [...] kt, Jemeppe [...] kt and Tavaux [...] kt) as opposed to [...] kt contained in the Form CO. The Commission has not recomputed the Notifying Parties' best estimates for the purpose of the competitive assessment, under the assumption that the Notifying Parties' market shares would not change dramatically. However, any remedies offered by the Notifying Parties were assessed against both the data provided in the Annexes to the Form CO and the most recent submission, that is to say [...] kt.

¹⁰² According to the Notifying Parties' Reply to the RFI of 19 September 2013, INEOS' EEA and NWE S-PVC capacity is 1 830 kt (including Runcorn).

¹⁰³ Form CO, Section 6, Part A, "Commodity S-PVC", Paragraph 6.39, Footnote 13.

and an EDC plant in Lillo/Zandvliet (Belgium), salt/brine, two chlorine plants, and an EDC/VCM plant in Tavaux (France), an ethylene cracker (42.5% interest in JV with Total Petrochemicals) in Feyzin (France), and a chlorine plant in Rossignano (Italy); INEOS will contribute an EDC/VCM plant in Wilhelmshaven (Germany), two chlorine plants and an EDC plant in Runcorn (United Kingdom), brine facilities in Holford (United Kingdom), a chlorine plant and an EDC/VCM plant in Stenungsund (Sweden), a chlorine plant and an EDC/VCM plant in Rafnes (Norway), two chlorine plants and an EDC/VCM plant in Tessenderlo (Belgium).

(161) The Notifying Parties are fully vertically integrated players, with a higher or lower degree of *on-site* integration, depending on the specific set-up of their plants. The following Section provides a detailed description of the Notifying Parties' S-PVC plants.

6.4.2.1. Solvay

(162) Solvay's S-PVC plants which will be transferred to the JV are the followings:

- Jemeppe is integrated on-site up to chlorine and also has salt purification capacity. Ethylene is supplied from [...]***¹⁰⁴ [...]*** via the ARG+ network. To fulfil its requirements,¹⁰⁵ additional quantities of EDC are received by rail from [...]***. The chlorine plant uses membrane-based technology.
- Tavaux is integrated on-site up to chlorine. Ethylene is supplied from [...]***,¹⁰⁶ [...]***. To fulfil its requirements,¹⁰⁷ additional quantities of EDC are received by rail from [...]***. The chlorine plant uses membrane-based technology.
- Rheinberg is integrated on-site up to EDC. Ethylene is supplied from [...]*** via the ARG+ network. Most of its EDC requirements are met through deliveries by rail from [...]***.¹⁰⁸ Rheinberg's VCM plant also includes a chlorination unit, which is connected to the on-site electrolysis unit which is used for the production of allyl chloride and epichlorhydrin. Exceptionally, the chlorination unit converts chlorine to EDC when small additional quantities of EDC are required for S-PVC production.
- Martorell is integrated on-site up to chlorine. Ethylene is supplied from [...]***. The chlorine plant still uses mercury-based technology. The deadline for conversion is the end of 2019.

6.4.2.2. INEOS

(163) INEOS' S-PVC plants which will be transferred to the JV are the followings:

- Mazingarbe is a standalone S-PVC plant. VCM is supplied from INEOS' sites at Tessenderlo by rail and [...]*** by ship and rail.

¹⁰⁴ BASF has 25% ownership in SolVin.

¹⁰⁵ According to the Notifying Parties' reply to the RFI of 14 February, over the past 5 years, between [...]***.

¹⁰⁶ Solvay has a 42.5% interest in joint venture with Total in the Feyzin cracker.

¹⁰⁷ [...]*** kt received in 2012, out of [...]*** kt capacity. According to the Notifying Parties' reply to the RFI of 14 February, the additional volumes of EDC account for between [...]***% and [...]***% of Tavaux's EDC requirements.

¹⁰⁸ [...]*** kt received in 2012 out of [...]*** kt capacity.

- Beek Geleen is a standalone S-PVC plant. VCM is supplied by pipeline from INEOS' site at Tessenderlo.
- Schkopau is a standalone S-PVC plant. VCM is supplied by pipeline from an adjacent site belonging to Dow. That plant is effectively embedded into Dow's chemical site.¹⁰⁹
- Porsgrunn is a standalone S-PVC plant. VCM is supplied by pipeline from [...]*
- Stenungsund is integrated on-site up to chlorine. Ethylene is supplied from [...]*, [...]* and [...]*. Its VCM requirements are partially met through deliveries from [...]* (by ship).¹¹⁰ The chlorine plant still uses mercury-based technology. The deadline for conversion is the end of 2015.¹¹¹
- Aycliffe is a standalone S-PVC plant. VCM is supplied by ship or road from [...]* at [...]*
- Wilhelmshaven is integrated on-site up to VCM. EDC is supplied by ship from INEOS' sites at Runcorn and [...]*. The plant also sources ethylene from [...]* for the oxychlorination of EDC.

6.5. Demand side of the market

- (164) Based on end-use applications, that is to say the final products, different groups of customers can be distinguished: profiles and tubes, pipes and fittings, wire and cables, film and sheet, flooring, others.
- (165) In general, S-PVC suppliers do not distinguish between customers, but sometimes distinguish between rigid and flexible applications. Suppliers also differentiate customers according to their size (big, medium and small size), purchasing behaviour (customers with whom a regular commercial relationship exists and customers who buy on a spot basis), and geographical spread of their business activities.¹¹²
- (166) The pipe sector was the biggest end user of PVC in Western Europe, but, in recent years, rigid profiles surpassed pipes as the largest application.¹¹³
- (167) From a geographic point of view, the S-PVC demand is especially high in Germany ([...]* kt/y), followed by Italy ([...]* kt/y), the United Kingdom ([...]* kt/y), Poland ([...]* kt/y), France ([...]* kt/y), the Benelux ([...]* kt/y), Spain ([...]* kt/y), Romania and Portugal ([...]* kt/y), Hungary ([...]* kt/y) Sweden, Austria, Switzerland, Bulgaria, Greece (around [...] kt/y or below [...] kt/y), Norway, Denmark, Lithuania, Slovakia (below [...] kt/y), Estonia, Latvia, Slovenia, Malta, and Cyprus (below [...] kt/y).¹¹⁴
- (168) The market investigation reveals that customers pursue multi-sourcing strategies in order to ensure security of supply and a better negotiating position, or to meet the

¹⁰⁹ Schkopau is provided with all necessary site services and utilities by [...]*

¹¹⁰ [...] kt received in 2012 out of [...] kt capacity.

¹¹¹ In 2012, from Stenungsund, [...] kt/y of EDC were delivered to [...] and [...] and [...] kt/y of VCM to [...]*

¹¹² Replies to question 1 and 2 of BorsodChem, Anwil, Kem One, Ercros, Fortischem, Shin-Etsu, Vinnolit to the RFI of 4 December 2013 ID5409, ID4545, ID4490, ID4484, ID5093, ID5342, ID4861

¹¹³ 2014 IHS World Analysis - Vinyls, Page 170.

¹¹⁴ Notifying Parties' Reply to the RFI of 18 November 2013. All data refer to year 2012.

requirements of specific customers or production processes. On average, customers seem to qualify three to four S-PVC suppliers for each of their plants, while 46% of them actually sources from three S-PVC suppliers per plant.¹¹⁵ That trend can vary, however, to a significant extent, according to specific K-value concerned. That is because customers qualify suppliers for specific K-values or grades.

6.5.1. *Price formation (contracts: monthly negotiations and formulas based on price lists)*

- (169) According to the Notifying Parties,¹¹⁶ there are two main types of supply contracts for S-PVC in the EEA: fixed formula contracts and monthly negotiated contracts. These contracts are usually for a maximum duration of one year, although a minority may be as long as two to three years.
- (170) The Notifying Parties estimate that some 50% of S-PVC volumes in the EEA are sold on the basis of orders and prices that are negotiated monthly (monthly negotiated contracts). In the context of monthly negotiated contracts, negotiations are carried out, and prices agreed, on a monthly basis, against a pre-agreed delivery volume-range for the year, quarter and month.¹¹⁷
- (171) There is no minimum volume requirement on the purchaser. Some contracts may have a discount rebate triggered by the customer exceeding volume targets. Typically these rebates operate on the basis of annual volumes of purchased PVC (rather than, for example, quarterly or monthly volumes) and are generally paid annually (for example 1% rebate is paid for every 1 000 tonnes, 2% for every 2 000 tonnes, etc.).
- (172) Fixed formula contracts stipulate a pricing mechanism for the duration of the contract, which is generally less than 1 year: in the majority of cases, the price is based on a market price reference such as the IHS index and an agreed discount from that price. Prices might also be linked to raw material costs such as ethylene or energy. There are therefore no monthly negotiations as to price under fixed formula contracts.
- (173) A fixed formula contract will typically stipulate a volume range for the contract's duration as do monthly negotiated contracts. The monthly volumes requested by a customer can therefore vary, but these variations will not be subject to negotiations, unless the customer is requesting volumes outside the ranges agreed in the contract. While customers who use fixed formula contracts cannot switch their entire S-PVC requirement away from the supplier for the term of the contract, they can still switch some of their volume requirements to other suppliers as long as they continue to purchase minimum contracted volumes.
- (174) Overall, the results of the market investigation are in line with the Notifying Parties' description of the contracts and price formation mechanisms most commonly used in the market.¹¹⁸ Indeed, customers indicate that contracts are split between fixed formula contracts and monthly negotiated contracts. They also explain that when markets are extremely volatile, long-term assumptions and even indexes may prove

¹¹⁵ Replies to questions 50 and 51 - Phase I Questionnaire to customers (S-PVC).

¹¹⁶ Form CO, Section 6, Part A, "Commodity S-PVC", Paragraphs 6.100 - 6.106

¹¹⁷ For both Notifying Parties, the agreed prices are on a 'delivered' basis in EUR/metric tonne, for delivery in full bulk road tankers.

¹¹⁸ Replies to question 57 - Phase I Questionnaire to customers (S-PVC).

to be wrong and, therefore, some customers prefer monthly negotiations that allow them to rely more on their market knowledge. That comes of course at a cost, that is to say security of supply. Other customers prefer to pay a premium to have a contract with a volume commitment to avoid any sourcing issues.

6.5.2. *Demand forecast*

- (175) Based on the industry reports submitted by the Notifying Parties, which contain both historical data starting from 2007 and detailed forecasts from 2013 to 2023, the Commission understands that IHS distinguishes three main European regions: (i) West Europe, (ii) Central Europe and (iii) Commonwealth of Independent States and the Baltics. Therefore, the countries of the EEA are divided across these regions. The data are provided for overall PVC demand, not for commodity S-PVC only.
- (176) Focussing on West Europe, these industry reports show that 2007 was the year when internal demand was the highest, at 5 957 kt/y.¹¹⁹ It then started to fall in line with the decline of the construction industry, which is a crucial outlet for S-PVC. In 2011 and in 2012, demand was respectively at 4,332kt/y and 4 081 kt/y and is forecast to reduce slightly to 4 020 kt/y in 2013. Following that, market reporters expect a recovery up to 4 366 kt/y in 2018 and IHS forecast an average annual growth rate of 1.7% between 2013 and 2018.¹²⁰ In their internal documents, the Notifying Parties share similar expectations.¹²¹

6.6. **Introduction to Sodium Hypochlorite**

- (177) The majority of sodium hypochlorite in the EEA is the inevitable result of the production of chlorine. The electrolysis of brine (salt and water) generates gaseous chlorine and caustic soda (point 1 of **Figure 5**). At this stage, the chlorine and caustic soda produced are kept apart. However, the gaseous chlorine needs to be further processed to be liquefied and this generates a “tail gas” stream with a residual concentration of gaseous chlorine, which cannot be dissipated in the atmosphere due to environmental and safety reasons and must be disposed of.
- (178) Chlorine suppliers therefore scrub these “tail gas” streams by reacting them with caustic soda, thereby producing sodium hypochlorite (point 2 of **Figure 5**). Such sodium hypochlorite is referred to as “fatal” hypochlorite. Since destroying “fatal” sodium hypochlorite is an uneconomical option for producers, most chlorine manufacturers prefer to sell it on the merchant market.¹²²

¹¹⁹ 2013 IHS World Vinyls - Analysis, Page 190.

¹²⁰ 2014 IHS World Vinyls - Analysis, Pages 169 and 179.

¹²¹ INEOS' internal document, "INEOS ChlorVinyls Strategy Day" of 4 September 2012 final", Page 4; INEOS' internal document, "INEOS ChlorVinyls Strategy Day Agenda" of 2013, Page 25; and INEOS' internal document, "Vinyls Business Strategy Presentation" of 10 December 2012, Page 12.

¹²² Other streams of weak chlorine gas generated by other operations such as chlorine tanker and package filling, for example, are dealt with in the same manner, although manufacturers usually need to add chlorine to the sodium hypochlorite produced in order to ensure that it meets specifications.

Figure 5: Flow Chart of Sodium Hypochlorite Production

- (179) 1. Electrolysis of brine: production of chlorine and caustic soda
- (180) $2 \text{ NaCl (salt)} + 2 \text{ H}_2\text{O (water)} \rightarrow \text{Cl}_2 \text{ (chlorine)} + \text{H}_2 \text{ (hydrogen)} + 2 \text{ NaOH (caustic soda)}$
- (181) 2. Reaction of chlorine and caustic soda : production of sodium hypochlorite
- (182)** $\text{Cl}_2 + 2 \text{ NaOH} \rightarrow \text{NaClO (sodium hypochlorite)} + \text{NaCl} + \text{H}_2\text{O}$

Source: Form CO

- (183) When demand exceeds the “fatal” volume produced as a by-product of the chlorine production process, sodium hypochlorite can also be produced intentionally. That is done by diverting the gaseous chlorine produced in the electrolysis cell to a dedicated plant, where it is absorbed in liquid CS to produce sodium hypochlorite. Such sodium hypochlorite is referred to as “voluntary”. Choosing to increase production of “voluntary” sodium hypochlorite has an impact on the production of other by-products of the chlorine manufacturing process.
- (184) Costs for the production of sodium hypochlorite vary amongst producers and plants. However, the costs for the production of “fatal” and “voluntary” sodium hypochlorite are similar.
- (185) Sodium hypochlorite is used in varying strengths for various applications. It is used as a disinfectant and a bleaching agent in household and industrial applications and for water treatment. In Western Europe, household applications account for around one third of sodium hypochlorite use such as laundry bleach and disinfection, while industrial applications account for around two thirds of sodium hypochlorite use in particular, municipal and industrial water treatment disinfection accounts for about 60% of total industrial consumption.
- (186) Solvay produces both “fatal” and “voluntary” sodium hypochlorite in Belgium, France, Italy, Portugal and Spain and sells it in [...]*
- (187) INEOS produces both “fatal” and “voluntary” sodium hypochlorite in [...]*. It sells it in [...]*

7. RELEVANT MARKETS

7.1. Commodity S-PVC - Relevant Product Market

- (188) A relevant product market comprises all those products or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use.¹²³
- (189) An analysis of the product characteristics and its intended use allows the Commission, as a first step, to limit the field of investigation of possible substitutes. However, product characteristics and intended use are insufficient to show whether two products are demand substitutes. Functional interchangeability or similarity in characteristics may not, in themselves, provide sufficient criteria, because the

¹²³ Market Definition Notice, Paragraph 7.

responsiveness of customers to relative price changes may be determined by other considerations as well.¹²⁴

7.1.1. *S-PVC v. E-PVC*

- (190) In previous decisions, the Commission found that E-PVC and S-PVC constitute separate markets.¹²⁵ In particular, from a demand-side perspective S-PVC and E-PVC are used for different applications, while from a supply-side perspective the equipment to produce these products is different and the conversion of an S-PVC facility into an E-PVC facility and the other way around is costly.
- (191) In the Form CO, the Notifying Parties agree with the Commission's approach in previous cases where a distinction was made between S-PVC and E-PVC.
- (192) On the basis of the results of the market investigation, the Commission has confirmed its precedents in this regard. 80% of PVC customers¹²⁶ and all competitors¹²⁷ agree that the market for PVC should be segmented into S-PVC and E-PVC.
- (193) In particular, customers explain that they cannot switch from S-PVC to E-PVC and the other way around in a reasonable time frame without incurring significant costs, because the two products feature different technical properties. In fact, customers use these two products for different purposes.
- (194) Competitors cannot switch from producing one to the other in a short time frame without incurring significant costs, because the technical set-up for producing S-PVC significantly differs from that required for producing E-PVC.
- (195) Therefore, in light of the lack of demand- and supply-side substitutability, the Commission concludes that E-PVC and S-PVC constitute two separate product markets.

7.1.2. *Commodity v. Speciality and Extender S-PVC*

- (196) In previous decisions,¹²⁸ S-PVC was further segmented into three separate product markets: extender, speciality and commodity S-PVC, due to their different properties, separate production processes, pricing and their range of possible

¹²⁴ Market Definition Notice, Paragraph 36.

¹²⁵ Commission Decision Case No. M.6563 *Mexichem SIH/Wavin* (2012), OJ C 189, 29.06.2012, Paragraph 15; Commission Decision Case No. M.4734 *INEOS/Kerling* (2008), OJ C 2019, 28.08.2008, Paragraph 19; and Commission Decision Case No. M.4572 *Vinnolit/INEOS CV Speciality PVC Business* (2007), OJ C 160, 13.07.2007, Paragraphs 7-9.

¹²⁶ See in particular replies to question 4 - Phase I Questionnaire to customers (S-PVC) (74% of S-PVC customers agreed with the segmentation) and to question 6 - Phase I Questionnaire to customers (E-PVC) (96% of E-PVC customers replied that they could not switch from commodity S-PVC to E-PVC in their manufacturing activities).

¹²⁷ See in particular replies to question 4 - Phase I Questionnaire to competitors (S-PVC): unanimously all competitors agreed with the segmentation.

¹²⁸ Commission Decision Case No. M.6563 *Mexichem SIH/Wavin* (2012), OJ C 189, 29.06.2012, Paragraph 21; Commission Decision Case No. M.4734 *INEOS/Kerling* (2008), OJ C 219, 28.08.2008, Paragraph 20; and Commission Decision Case No. M.4572 *Vinnolit/INEOS CV Speciality PVC Business* (2007), OJ C 160, 13.07.2007, Paragraphs 7-9.

applications as well as supplier structure. The Notifying Parties' submission¹²⁹ is summarized at Recitals 193-195.

- (197) Extender S-PVC is differentiated from commodity S-PVC by particle size and by the fact that, unlike either commodity S-PVC or speciality S-PVC, it can be used in combination with E-PVC. End-users of extender S-PVC use that type of S-PVC rather than commodity S-PVC in applications that require an E-PVC-type material. For example, extender S-PVC is most often used as filler in E-PVC end-applications.
- (198) Speciality S-PVC is produced with the addition of a co-monomer, such as vinyl-acetate, that modifies the properties of the S-PVC resin and thereby produces a speciality S-PVC for use in niche end applications, such as films and sheets that require crystal-clear transparency.
- (199) Commodity S-PVC is a standard S-PVC resin which the Commission has previously identified as S-PVC with K-values between K-55 and K-80.
- (200) In essence, the Notifying Parties agree with the Commission's segmentation of the market into extender S-PVC, speciality S-PVC and commodity S-PVC.¹³⁰ They submit that extender S-PVC and specialty S-PVC are differentiated from commodity S-PVC in view of the different production processes and characteristics but not on the basis of K-values and that demand substitutability is limited.¹³¹
- (201) However, from a supply-side perspective the Notifying Parties submit that the production lines used for the production of extender S-PVC and specialty S-PVC can also be used to produce commodity S-PVC, although the reverse is not true, unless appropriate equipment such as drying units, co-monomer injection lines and monomer recovery units is already installed.
- (202) In fact, extender S-PVC can be produced on production lines used for the production of speciality S-PVC or commodity S-PVC, as long as there is an appropriate drying unit. That is because extender S-PVC particles are far smaller than commodity S-PVC particles and, therefore, more sophisticated drying equipment is required. Speciality S-PVC can also be produced on production lines normally used for commodity S-PVC or extender S-PVC production, as long as there are co-monomer injection lines and appropriate monomer recovery units in place.
- (203) Despite constituting separate markets, the Notifying Parties consider that capacity dedicated to speciality and extender S-PVC should also be taken into account in the market for commodity S-PVC market, namely, in the computation of market shares based on capacity.¹³²
- (204) The market investigation confirmed the Commission's precedents in the sector. In particular, the market investigation points to a lack of demand-side substitutability between extender, speciality and commodity S-PVC due to the distinctive features of each of these products such as properties, production processes, pricing and

¹²⁹ Form CO, Section 6, Part A "Commodity S-PVC", Paragraph 6.34 and 6.37.

¹³⁰ Form CO, Section 6, Part A, "Commodity S-PVC", Paragraph 6.38.

¹³¹ Form CO, Section 6, Part A, "Commodity S-PVC, Paragraphs 6.34, 6.36, 6.37.

¹³² Notifying Parties' Reply to the RFI of 18 November 2013 and follow-up response to the same RFI.

applications.¹³³ From a supply-side perspective, substitutability is also limited, at most.¹³⁴ 74% of customers and all competitors agree that S-PVC should be sub-segmented into commodity, speciality and extender S-PVC.¹³⁵

- (205) Therefore, based on the results of the market investigation the Commission concludes that commodity S-PVC constitutes a separate product market from specialty and extender S-PVC.
- (206) INEOS only produces commodity S-PVC, Solvay also produces speciality S-PVC. Neither Party produces extender S-PVC. Therefore, only the commodity S-PVC market will be further analysed.
- (207) However, the capacity used to produce specialty or extender S-PVC will however be taken into account in the calculation of capacity shares, in order to reflect the technical capability to redeploy capacity.

7.1.3. Commodity S-PVC - Distinction by grade/end application

- (208) As indicated above in Section 7.1.2., commodity S-PVC is S-PVC within the K55-80 range. In previous decisions, the Commission considered whether Commodity S-PVC could be further segmented according to K-values or ranges of K-values. Although it ultimately left this question open, the Commission noted that supply-side substitutability may justify the finding of an overall product market for commodity S-PVC, despite limited demand-side substitutability.¹³⁶
- (209) The Notifying Parties submit that no further segmentation of the relevant product market for commodity S-PVC according to K-values is appropriate. Firstly, most commodity S-PVC plants are capable of producing those K-values making up around 95% of EEA demand for S-PVC.¹³⁷ Where S-PVC with particularly low or

¹³³ In that regard, Mexichem referred that: "a resin is regarded as a specialty product, when it presents the following characteristics: (i) low consumption in terms of volumes; (ii) special characteristics in terms of quality; (iii) the fact that customers cannot easily switch from one supplier to another or from one product to another; and (iv) higher production costs. That is the reason why specialty products have a higher price than commodity products" (Non-confidential version of agreed minutes of a conference call with Mexichem of 27 November 2013 ID5292). Likewise Vinnolit explained that Specialty S-PVC products "are produced in small volumes for niche markets, often used in special applications. Product performance / value is the key driver for its use. Thus a lot of care is taken for developing and manufacturing of these tailor made grades. All grades are highly specialised and require high marketing efforts and costs" (Reply of Vinnolit to question 10 of the RFI of 26 November 2013 ID4862. The same concept is expressed by Vestolit, according to which the "differentiation [between Specialty and Commodity] is done based on specific requirements during processing, the specifically required technical characteristics of the grade adding value for the converter" (Reply by Vestolit to question 3 of the RFI of 29 November 2013 ID4485).

¹³⁴ See competitors' replies to the RFIs sent in Phase II between 27 November 2013 and 4 December 2013.

¹³⁵ See in particular replies to question 4 - Phase I Questionnaire to customers (S-PVC) and to question 4 - Phase I Questionnaire to competitors (S-PVC): unanimously all competitors agreed with the segmentation. See also Non-confidential version of agreed minutes of a conference call with Klöckner Pentaplast Films ("KP Films", Germany) of 17 May 2013 ID3664.

¹³⁶ Commission's Decision of 26 July 2011 in Case No. M.6218 *INEOS/Tessenderlo Group S-PVC Assets*, Paragraphs 17-19; and Commission's Decision of 30 January 2008 in Case No. M.4734 *INEOS/Kerling* (2008), Paragraphs 21-23.

¹³⁷ Estimated by the Notifying Parties to be K-values between K57 and K70, see Form CO, Section 6, Part A, "Commodity S-PVC", Paragraph 6.41.

particularly high K-values is required,¹³⁸ reactors need some specific adjustments. These reactors can be used to produce the full range of commodity S-PVC, if so required.¹³⁹ Secondly, there are no significant price differences between the different K-values. According to the Notifying Parties, an analysis of prices for different K-values shows that all K-values are sold across a broad range of overlapping prices. Thirdly, the Notifying Parties submit that there is a significant degree of demand-side substitutability across K-values.

- (210) As regards supply-side substitutability, the market investigation supports the Notifying Parties' claim. Indeed, competitors agree that commodity S-PVC capacity is fungible across different K-values.¹⁴⁰ However, that is not the case as regards demand-side substitutability.¹⁴¹ When asked to what extent they would switch from using a given K-value to another, if the price of the K-value they currently use increased due to Small but Significant And Non-transitory Increase in Price ("SSNIP")¹⁴² the 54% of the customers indicate that they would not change their purchasing patterns.¹⁴³ 43% of the customers reply that switching K-values entails major adjustments in their recipes and production processes with high costs and time loss, while another 33% explain that they have either never tested or never even studied this option.¹⁴⁴
- (211) At the same time, it appears that there is a +/- 1 degree of tolerance to changes in the manufacture of commodity S-PVC. In other words, K67 from Solvay may also be used as K66 or K68. Therefore, a certain degree of chain substitutability between neighbouring K-values could, at least in principle, be envisaged. However, customers could still need some adjustments in their formulations.¹⁴⁵

¹³⁸ Estimated by the Notifying Parties as less than 5% of S-PVC production in the EEA, see Form CO, Section 6, Part A, "Commodity S-PVC", Paragraph 6.42.

¹³⁹ Whilst the reverse is not true, reactors capable of producing more mainstream K-values but which lack the specific reactor characteristics will not be able to produce particularly low or particularly high K-values without modification.

¹⁴⁰ See in particular replies to question 11 - Phase I Questionnaire to competitors (S-PVC): 7 out of 8 non confidential responses.

¹⁴¹ Customers have acknowledged that quality differences may require formulation adjustments also when using the same K-value from two different suppliers or even from the same supplier but from different plants (see for instance reply by Tessenderlo Chemie NV ("Tessenderlo Chemie", Belgium) to question 13 - Phase I Questionnaire to customers (S-PVC) ID5354; non-confidential version of agreed minutes of a conference call with KP Films of 17 May 2013 ID3664). This would suggest the existence of a high degree of product differentiation which could not be captured by a simple breakdown of the market by K-value, but would require a very narrow segmentation of no use for the assessment of the present case: in fact, under such segmentation there would be no overlap.

¹⁴² The SSNIP test is one of the test identified in the Market Definition Notice for the determination of the relevant market. It is used in particular to assess demand side substitutability. According to this test, a relevant market is the narrowest collection of products to which customers would switch in response to a hypothetical small (in the range 5 % to 10 %) but permanent relative price increase in the products and areas being considered. See Market Definition Notice, Paragraph 17.

¹⁴³ Replies to question 12 - Phase I Questionnaire to customers (S-PVC). 10 other customers indicated that they would switch only partially.

¹⁴⁴ Replies to question 11 - Phase I Questionnaire to customers (S-PVC).

¹⁴⁵ Reply of Tessenderlo to question 11 - Phase I Questionnaire to customers (S-PVC) ID5354; and reply of REHAU GmbH ("Rehau", Germany) to question 13 - Phase I Questionnaire to customers (S-PVC) ID5372.

(212) In light of the fungible nature of commodity S-PVC capacity, the Commission concludes that, in line with its decisional practice, the relevant market for commodity S-PVC includes all K-values between K-55 and K-80.

(213) However, in the competitive assessment the Commission will also take into account the existence of a certain degree of product differentiation from a demand-side perspective and will analyse customers' switching in particular with regard to the K-values, where the Notifying Parties' actual production and sales overlap, that is to say K57, K60, K63, K67 and K75.

7.1.4. *Commodity S-PVC v. Co-polymers*

7.1.4.1. Co-polymers in general

(214) Co-polymers are the result of the polymerization of a molecule of PVC with another monomer, such as vinyl acetate.¹⁴⁶ There are also other types of co-polymers, such as the ones containing polybutyl acrylate. Due to the addition of a co-monomer, co-polymers show properties which appreciably differ from those of the corresponding molecule of PVC and allow the production of blends with particular properties such as improved thermo-formability, higher transparency and so forth.¹⁴⁷ In the EEA, co-polymers are currently produced by Solvay, Vestolit, Vinnolit and Fortischem. Therefore, the Transaction does not lead to horizontal overlaps as regards co-polymers.

(215) In its previous Decisions, the Commission had not expressly considered co-polymers for market definition purposes.¹⁴⁸

(216) The Commission understands that the description of speciality S-PVC, which the Notifying Parties submitted in the Form CO,¹⁴⁹ corresponds to the one that Solvay itself uses to describe co-polymers and, therefore, it considers that co-polymers are not part of the Commodity S-PVC market.¹⁵⁰ The Notifying Parties have not submitted any specific argument as regards co-polymers in general and this conclusion is in line with the results of the Phase II investigation, as customers using co-polymers state that they do not substitute volumes of commodity S-PVC with volumes of co-polymers or the other way around.¹⁵¹

¹⁴⁶ See Solvay's website:

http://www.solvayplastics.com/sites/solvayplastics/SiteCollectionDocuments/SolVin/Brochures/BR_SoIVin_VC-VAC_Copolymers_EN.pdf, visited on 18 December 2013.

¹⁴⁷ Ibidem.

¹⁴⁸ However, certain references to this product can be found in the *INEOS/Kerling* decision, which seem to indicate that the question, as to whether they were part of the relevant market for Commodity S-PVC, was left open given the small size of the segment: see Case No. M.4734 *INEOS/Kerling* (2008), Footnotes 116 and 132.

¹⁴⁹ Form CO, Section 6, Part A, "Commodity S-PVC", Paragraph 6.37: "*Speciality S-PVC is produced with the addition of a co-monomer, such as vinyl acetate, during the polymerisation stage. Co-monomers are used to modify the properties of SPVC resin (e.g. by making it more thermo-formable than would be possible without the addition of a co-monomer) and thereby produce a 'speciality' S-PVC capable of use in niche end-applications, such as films and sheets which require crystal-clear transparency.*"

¹⁵⁰ See Solvay's website:

http://www.solvayplastics.com/sites/solvayplastics/SiteCollectionDocuments/SolVin/Brochures/BR_SoIVin_VC-VAC_Copolymers_EN.pdf, visited on 18 December 2013.

¹⁵¹ None of the nine customers which indicated in their reply to use copolymers (replies to question 16 - Phase I Questionnaire to customers (S-PVC), have ever undertaken such substitution (replies to

- (224) Finally, even if for a given customer group there was no demand side substitutability, HIS-PVC production capacity could be used to produce Commodity S-PVC.
- (225) Based on the results of the market investigation and on its own assessment of the Notifying Parties' submissions, the Commission considers that there is no reason to include HIS-PVC in the relevant market for both demand side and supply side reasons.

7.1.4.3. Demand side substitutability

- (226) From a demand side perspective, substitutability between Commodity S-PVC and HIS-PVC appears to be limited.
- (227) In that regard the Commission notes that the 69% of customers indicated that if the price of Commodity S-PVC increased due to a SSNIP they would not switch to copolymers of vinyl chloride and polybutyl acrylate, such as HIS-PVC.¹⁵⁶
- (228) In their Response to the SO, the Notifying Parties contested the SSNIP question for three reasons.
- (229) First, the Notifying Parties contested the Commission's interpretation of the replies to that question by certain customers and the way it then considered these replies in calculating the number of customers who would not switch.
- (230) The Commission notes that its finding would remain unchanged even if all the customers replies for which the Notifying Parties questioned the Commission's interpretation were excluded and even if such replies were counted as a positive declaration of switching. Even if only those customers who clearly replied that they would not switch were considered, without qualifying their reply, that customer group would still accounts for 65% of the responses.
- (231) Second, in the Response to the SO, the Notifying Parties criticised the Commission's switching question since it compared the price of Commodity S-PVC and HIS-PVC, instead of comparing the price of Commodity S-PVC + impact modifier with the price of HIS PVC. The Notifying Parties also submitted that the price difference between Commodity S-PVC + impact modifier and HIS-PVC would be around 5%.
- (232) The Commission notes that this approach would be inconsistent with a market definition which groups together all K-values of Commodity S-PVC for all applications and in contradiction with the Notifying Parties' argument that there are no significant price differences between the different K-values.
- (233) In that regard, the Commission notes that the impact modifier contained in HIS-PVC is used with K65/67 grade of Commodity S-PVC for window profiles. For other customers, however, such impact modifier is of no use.¹⁵⁷ Where the impact modifier is also considered, the price of K65/67 would be much higher than 5% with the other grades of Commodity S-PVC and for all those customers for which impact modifiers

¹⁵⁶ See non-confidential replies to question 5 - Phase II Questionnaire to customers (S-PVC).

¹⁵⁷ This is clear also from the number and the identity of respondents to the Commission's questions on copolymers of vinyl chloride and polybutyl acrylate: these customers were limited in number (around 20% depending on the question) and predominantly window profilers. See for examples replies to questions 1 to 5 - Phase II Questionnaire to customers (S-PVC).

are of not use HIS-PVC and Commodity S-PVC+impact modifiers would not be substitutable.

- (234) In the market investigation, customers explain that the price of 1 tonne of HIS-PVC is 10% to 50% higher than the price of 1 tonne of Commodity S-PVC.¹⁵⁸ The existence of a significant price differential has been acknowledged by Vestolit. This is due to the addition of an impact modifier to the co-polymer which is used in the extrusion of window profiles.¹⁵⁹ The existence of a price difference is acknowledged by the Notifying Parties themselves and on the basis of the data they provided it can be estimated at about 18%.¹⁶⁰
- (235) The Commission therefore considers that any question comparing the price of Commodity S-PVC + impact modifier and the price of HIS-PVC would not have had informative value regarding whether HIS-PVC belong to the same market as Commodity S-PVC, including all K values.
- (236) Third, the Notifying Parties criticised the Commission's switching question since it referred to copolymers in general and not specifically to HIS-SPVC.
- (237) The Commission notes that customers have mentioned a number of reasons why switching from S-PVC to co-polymers and HIS-SPVC would be difficult, or impossible. Important elements in that respect appear to be the need to adjust the production processes, and the fact that the use of co-polymers of vinyl chloride and polybutyl acrylate instead of Commodity S-PVC would alter the characteristics of the final product.¹⁶¹
- (238) The Commission considers that the informative value of these replies is not hampered by the fact that the question referred to copolymers in general. As acknowledged by the Notifying Parties, HIS-PVC contains an additional ingredient or copolymer, the impact modifier, which differentiates this product from Commodity S-PVC. Therefore the arguments made by the customers in order to justify the limited demand side substitutability between copolymers and Commodity S-PVC, namely the need to adjust production processes or recipes, equally apply to HIS-PVC.
- (239) The Notifying Parties also submitted that there is ample evidence that customers have switched between HIS-PVC and Commodity S-PVC.¹⁶²

¹⁵⁸ See replies to question 4 - Phase II Questionnaire to customers (S-PVC) and to question 7 - Phase II Questionnaire to additional customers (S-PVC). 85% of the customers replied to these question that they do not know the price difference. This is because only a small sub-segment of customers uses HIS-PVC.

¹⁵⁹ Non-confidential version of agreed minutes of a conference call with Vestolit of 21 November 2013 ID5215.

¹⁶⁰ Response to the SO, Footnote 205.

¹⁶¹ In that regard, Legrand SA ("Legrand", France), which the Notifying Parties indicated as "*willing to launch a survey to analyse the best cost-compromise*", indicated that "*it is very long to approve a new formulation for our products , firstly we have to maintain a good level of price for the dryblend , secondly to maintain the process at the right level with our current machines and we have to check also the final product requirements (mechanical proprieties , aspect ...)*," reply to question 5 – Phase II Questionnaire to customers (S-PVC) [ID4043].

¹⁶² Notifying Parties' Response to the Decision opening the proceedings, Paragraph 7.5; Response to the SO, Paragraph 4.14 et seq.

- (240) The Commission acknowledges that customers have switched as pointed out by the Notifying Parties. Those customers are in particular Aluplast, Schueco, Salamander, Profine and Veka. The Commission notes that all these customers are producers of windows profiles. Since those customers actually use HIS-PVC, they appear to be among the few which could reply to the Commission's questions on co-polymers of vinyl chloride and polybutyl acrylate.¹⁶³ The Commission therefore considers those customers as a credible source of additional evidence on the matter.
- (241) Those HIS-PVC users have explained that there is no substitutability between standard S-PVC and the co-polymers as such. However, there is some degree of substitutability at formula level between Commodity S-PVC + modifier and co-polymers.¹⁶⁴ Despite such substitutability, only Veka and Profine stated in their responses to the Commission's questionnaires that they would switch partly or fully to co-polymers in case of a SSNIP in Commodity S-PVC.¹⁶⁵ The remaining customers stated that they would not do so.¹⁶⁶
- (242) Even if HIS-PVC and Commodity S-PVC were substitutes from the demand side perspective, this would be true only for one category of customers at most, namely manufacturers of window profiles. These customers account for only about 30% of S-PVC demand in NWE.¹⁶⁷ Such a small proportion of customers would be unlikely to constrain a SSNIP in S-PVC overall by switching to HIS-SPVC. Thus, it can be concluded that S-PVC and HIS-PVC constitute different markets from a demand side perspective.

7.1.4.4. Supply side substitutability

- (243) Supply-side substitutability between S-PVC and HIS-PVC is at most limited. The Commission understands that currently this co-polymer is only offered by Vestolit.¹⁶⁸
- (244) The Commission notes that supply side substitutability is only one-sided. Whilst it is possible for HIS-PVC producers to use their equipment to manufacture S-PVC, the opposite is not true.
- (245) In that respect, Vestolit explained that "*normally, a commodity S-PVC reactor cannot produce co-polymers, unless specific investments are made to upgrade the production line and be able to swing from one production to the other.*" Vestolit has

¹⁶³ See Footnote 157 above.

¹⁶⁴ Non-confidential version of agreed minutes of conference calls with Salamander of 20 November 2013, ID4911, with Profine of 20 November 2013, ID4258, and with Veka of 20 November 2013, ID4167

¹⁶⁵ Replies of Veka and Profine to question 5-Phase II Questionnaire to customers (S-PVC) ID4131 and ID4240.

¹⁶⁶ Replies of Aluplast and Schueco to question 5-Phase II Questionnaire to customers (S-PVC) ID4123 and ID5163; and non-confidential version of agreed minutes of conference calls with Salamander of 20 November 2013 ID4911.

¹⁶⁷ Notifying Parties' estimates, response to the RFI of 14 February 2014.

¹⁶⁸ See Vestolit's website: <http://www.vestolit.de/vestolit-en/products/his-pvc/p1892k.php>, visited on 18 December 2013.

Solvay was producing this product until 2005, Notifying Parties' Response to the Decision opening the proceedings, Paragraph 7.5.

the technology to produce both Commodity S-PVC and HIS-PVC on the same production lines, since it made specific investments to this end some 40 years ago.¹⁶⁹

- (246) The relevant question for the purposes of the assessment in this case is, however, whether a producer of HIS-PVC, that is to say Vestolit, can and would switch its production of HIS-PVC to S-PVC as a result of a SSNIP.
- (247) In that respect, the Commission considers that, from a technical perspective, Vestolit can produce S-PVC on its lines that are normally used for HIS-PVC. In principle, therefore, Vestolit would have the ability to switch production as a result of a SSNIP.
- (248) The Commission however considers that Vestolit would not have the incentive to switch its HIS-PVC production to S-PVC as a result of a SSNIP. As explained in Section 7.1.4.2., on the basis of the data submitted by the Notifying Parties the price difference between HIS-PVC and Commodity S-PVC is above 10%, and can be estimated to be around 18%. In this context it is unlikely that a producer of HIS-PVC would have any incentive to switch to S-PVC in case of a SSNIP, also considering that any price increase in S-PVC would likely affect also HIS-PVC, given that S-PVC is an important input for the production of HIS-PVC. In addition, switching would force Vestolit to find new customers for S-PVC to replace its consolidated customer basis in HIS-PVC.
- (249) In any event, the Commission will adopt a conservative approach and take into account Vestolit's capacity used to produce HIS-PVC in its calculation of capacity shares for S-PVC in order to reflect Vestolit's technical capability to redeploy capacity.

7.1.4.5. Conclusion

- (250) In view of the poor demand side substitutability, and the limited economic incentives for Vestolit to switch from HIS-PVC to Commodity S-PVC, those products are not considered to be part of the same product market. However, Vestolit's capacity used to produce HIS-PVC will also be taken into account in the calculation of capacity shares in order to reflect the technical capability to redeploy capacity.

7.1.5. *Conclusion on product market definition*

- (251) The Commission therefore concludes that the relevant product market for the assessment of the effects of the Transaction is the overall market for the production and supply of commodity S-PVC, which includes all K-values but excludes HIS-PVC and other co-polymers. Some differentiating factors between the different K-values of Commodity S-PVC will, however, be taken into account in the competitive assessment.
- (252) In view of the limited economic incentives of Specialty S-PVC, extender S-PVC and HIS-SPVC to switch to Commodity S-PVC, these products are not considered to be part of the same product market. However, the capacity used to produce Specialty, including co-polymers, and extender S-PVC, as well as Vestolit's capacity to produce HIS-PVC, will also be taken into account in the calculation of capacity shares in order to reflect the technical capability to redeploy capacity.

¹⁶⁹ Non-confidential version of agreed minutes of a conference call with Vestolit of 21 November 2013 ID5215.

7.2. Commodity S-PVC – Relevant geographic market

- (253) According to the Market Definition Notice, "[m]arket definition is a tool to identify and define the boundaries of competition between firms."¹⁷⁰ The main purpose of market definition "is to identify in a systematic way the competitive constraints that the undertakings involved face", and the objective is "to identify those actual competitors of the undertakings involved that are capable of constraining those undertakings' behaviour and of preventing them from behaving independently of effective competitive pressure."¹⁷¹
- (254) The Market Definition Notice further specifies that the relevant geographic market comprises:
- "the area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas."*¹⁷²
- (255) In previous decisions,¹⁷³ the Commission left the geographic market definition for Commodity S-PVC open. However, it stated that the geographic scope of the market was wider than national and at least NWE,¹⁷⁴ while ultimately leaving open the question as to whether the market could be considered to cover a wider area encompassing WE¹⁷⁵ or even the whole EEA.¹⁷⁶
- (256) The Notifying Parties submit that the market for Commodity S-PVC is at least EEA-wide for the following reasons.
- (257) The Notifying Parties argue that transport costs are generally below 10% of the final price and in many cases even below 5%, with slight variations.¹⁷⁷ This is because S-PVC is a solid, stable, non-toxic commodity product that is normally shipped in sacks or tankers and safely transportable over considerable distances, even up to 2 000 km. According to the Notifying Parties, the Commission's previous decisions, as well as the market investigation in this case, confirm that S-PVC suppliers located at a radius of around 1 000 km from customers' premises would still be competitive.¹⁷⁸
- (258) An EEA-wide geographic scope would also be supported by trade figures for S-PVC, which show large trade flows across the EEA. A significant proportion of domestic S-PVC demand in most EEA countries is met by imports from other EEA countries. EEA countries export at least 30%, and even up to even 94% of domestic S-PVC

¹⁷⁰ Market Definition Notice, Paragraph 2.

¹⁷¹ Market Definition Notice, Paragraph 2.

¹⁷² Market Definition Notice, Paragraph 7.

¹⁷³ Case No. M.4734 *INEOS/Kerling* (2008), Paragraphs 64 and 153 and Case No. M.6218 *INEOS/Tessenderlo Group S-PVC Assets*, Paragraph 26.

¹⁷⁴ Belgium, Luxembourg, Netherlands, Denmark, France, Germany, Ireland, Sweden, Norway and the United Kingdom.

¹⁷⁵ Northwestern Europe plus Austria, Finland, Italy, Portugal, Spain and Switzerland.

¹⁷⁶ Case No. M.4734 *INEOS/Kerling* (2008), Paragraphs 57-58.

¹⁷⁷ Form CO, Section 6, Part A, "Commodity S-PVC", Paragraphs 6.53, 6.54

¹⁷⁸ Response to the SO, Paragraph 5.10.

production to other EEA and non-EEA countries. Moreover, a substantial part of the domestic consumption, between 32% and 113%, in most EEA countries is met by imports particularly, from EEA countries.

- (259) Moreover, the fact that NWE customers can and do switch to suppliers located outside NWE (such as Anwil and BorsodChem) is further proof of an EEA-wide market. In this context, they stress that the Commission's own market investigation shows that around 77% of customers located in NWE consider that S-PVC suppliers in Eastern Europe ("EE") and the Iberian Peninsula ("Iberia") are suitable sources of supply.¹⁷⁹
- (260) Finally, the Notifying Parties argue that there are also considerable overlaps between the shipment areas of the principal S-PVC suppliers, forming a chain of substitution across the EEA.
- (261) The Notifying Parties' arguments have, however, not been endorsed by the market investigation. The Commission found strong qualitative and quantitative evidence that the Commodity S-PVC market is regional and narrower than the EEA. The Commission also takes the view that NWE is the most appropriate regional cluster for approaching the geographic dimension of the market for Commodity S-PVC.
- (262) The market for Commodity S-PVC features a high degree of geographic differentiation, which is, among other things, influenced by the proximity of S-PVC suppliers to the geographic areas where customers are located. In a differentiated market, defining precise boundaries is more complex than in a market which does not feature such differentiation. However, a number of elements suggest that the conditions of competition in NWE are indeed appreciably different from other areas of the EEA and that suppliers located outside NWE are not capable of effectively constraining NWE suppliers.

7.2.1. *Geographic focus of Commodity S-PVC suppliers*

- (263) Production capacity is unevenly distributed across the EEA. The major players by capacity are concentrated in few EEA countries: Benelux, France and Germany. INEOS, Solvay, Shin-Etsu and Kem One, have all plants located in those countries, with only one exception for Shin-Etsu (Estarreja in Portugal) and one exception for Solvay (Martorell in Spain). INEOS has instead other three plants located in the Northern part of NWE, namely in Norway, Sweden and the United Kingdom.
- (264) Conversely, at the outskirts of NWE there are only local or minor players. In particular, Anwil has plants in Poland (Wloclawek) and the Czech Republic (Neratovice), BorsodChem in Hungary (Kazincbarcika), Fortischem in Slovakia (Nováky) and Ercros in Spain (Vilaseca).
- (265) In other words, even a cursory look at the industry landscape in the EEA shows that the Benelux, France and Germany hosts more S-PVC plants than the rest of the EEA (that is to say 14 S-PVC plants in these five countries against 10 S-PVC plants in the

¹⁷⁹ Response to the SO, Paragraph 5.5.

rest of the EEA).¹⁸⁰ It can already be expected that the conditions of competition in such a concentrated area are different than other regions in the EEA.

- (266) In any event, the Commission has also analysed the geographic focus of S-PVC suppliers across the EEA and compared their market presence across single countries. In that regard, the market share data by sales volume provided by the Notifying Parties highlight the local focus of S-PVC suppliers located at the outskirts of NWE.
- (267) Anwil's main focus is on its own domestic market, Poland, where it is the number one player with a market share by sales volume of [40-50]*%. Poland accounts for [40-50]*% of its production and is followed by Germany ([10-20]*% of its production) and Italy ([5-10]*% of its production). According to the Notifying Parties' own best estimates, Anwil is a very minor player in Germany and has no – or a very small - market presence in the Nordic countries (Denmark, Finland, Norway and Sweden) and in the Western part of the EEA (from France towards Iberia).
- (268) BorsodChem's main focus is on Romania and Hungary, where it is the number one player with a market share by sales volume of [60-70]*% and [60-70]*%, respectively. Hungary and Romania account for [10-20]*% and [10-20]*% of BorsodChem's production, respectively, and are followed by Poland ([10-20]*% of its production), Italy ([5-10]*% of its production), Germany ([5-10]*% of its production) and the Czech Republic ([5-10]*% of its production). According to Notifying Parties' own best estimates, BorsodChem is a very minor player in Germany ([0-5]*% market share) and has no - or a very small - market presence in the Nordic countries and in the Western part of the EEA (from France towards Iberia).
- (269) Ercros' main focus is on its domestic market, Spain, where it is the number one player with a market share by sales volume of [30-40]*%. Spain accounts for [50-60]*% of Ercros' production and is followed by France ([10-20]*% of its production), Germany ([5-10]*% of its production) and Italy and Portugal (both [5-10]*% of its production). According to the Notifying Parties' own best estimates, Ercros has a significant market presence in France, but is a very minor player in Germany. Moreover, it has no - or a very small - market presence in the United Kingdom, Ireland and the Nordic countries and in the Eastern part of the EEA (from Austria and the Czech Republic towards EE).
- (270) Fortischem's main focus is on its own domestic market, Slovakia, where it is the number one player, this market amounting to [...] kt/y only. Slovakia accounts for [50-60]*% of Fortischem's production and is followed by Poland ([10-20]*% of its production), Austria ([5-10]*% of its production) and Italy ([5-10]*% of its production). According to the Notifying Parties' own best estimates, Fortischem has almost no market presence in NWE altogether.

¹⁸⁰

With regard to the Benelux, France and Germany: four plants for INEOS (Beek Geleen, Mazingarbe, Wilhelmshaven, Schkopau), three plants for Solvay (Tavaux, Rheinberg, Jemeppe), three plants for Kem One (Balan, Berre and Saint Fons), two plants for Vinnolit (Cologne and Knapsack), one plant for Shin-Etsu (Pernis) and one plant for Vestolit (Marl). With regard to the rest of the EEA: three plants for INEOS (Aycliffe, Porsgrunn and Stenungsund), two plants for Anwil (Wloclawek and Neratovice), one plant for BorsodChem, (Kazincbarcika), one plant for Fortischem (Nováky), one plant for Solvay (Martorell), one plant for Ercros (Tarragona) and one plant for Shin-Etsu (Estarreja).

- (271) INEOS' main focus is on Germany, where it is the number one player with a market share by sales volume of [30-40]*%. Germany accounts for [20-30]*% of its production and is followed by the United Kingdom ([10-20]*% of its production), Poland ([5-10]*% of its production), France ([5-10]*% of its production) and Italy ([5-10]*% of its production). According to the Notifying Parties' own best estimates, INEOS is the number one player also in Belgium, France, Norway, Sweden, Denmark, the United Kingdom, Finland, Switzerland, Lithuania and Greece. It is also an important player in EE. Through its large portfolio of plants, INEOS' is a fully-fledged multi-country player with a significant presence across the EEA, being a minor player only in Iberia.
- (272) Kem One's main focus is on Italy, where it is the number one player with a market share by sales volume of [20-30]*%. Italy accounts for [20-30]*% of its production and is followed by Germany ([20-30]*% of its production) and France ([5-10]*% of its production). According to Notifying Parties' estimates, Kem One is a minor player in Iberia ([5-10]*% market share in Spain) and has no - or a very small - market presence in the United Kingdom, Ireland and the Nordic countries and in the Eastern part of the EEA (from Austria towards EE).
- (273) Solvay's main focus is on Germany, where it is the number two player with a market share by sales volumes of [10-20]*%. Germany accounts for [20-30]*% of its production and is followed by Italy ([10-20]*% of its production), the United Kingdom ([5-10]*% of its production and), France ([5-10]*% of its production) and Spain ([5-10]*% of its production). According to the Notifying Parties' own best estimates, Solvay is the number one player in Austria, Bulgaria and the Czech Republic and closely follows the national leader in Belgium, France, Italy and Spain. Through its four plants, Solvay is a fully-fledged multi-country player across almost the entire EEA.
- (274) Shin-Etsu's main focus is on Germany, where it is the number four player with a market share by sales volume of [10-20]*%. Germany accounts for [20-30]*% of its production and is followed by the Netherlands ([10-20]*% of its production), Italy, Spain and Portugal (all [5-10]*% of its production) and France and the United Kingdom (both [5-10]*% of its production). Shin-Etsu achieves a considerable multi-country presence through its two plants in the Netherlands and Portugal. Shin-Etsu is the number one player in Ireland (1 percentage point ahead of INEOS), the Netherlands and Portugal and has very limited market presence from the Czech Republic onwards (moving towards EE).
- (275) Vestolit's main focus is on its domestic market, Germany, where it is however a minor player with a market share by sales volume of only [0-5]*%. Germany accounts for [30-40]*% of its production and is followed by Italy ([5-10]*% of its production). According to the Notifying Parties' own best estimates, Vestolit has no - or *de minimis* - market presence in the rest of the EEA.
- (276) Vinnolit's main focus is on its domestic market, Germany, where it is the number three player with a market share by sales volume of [10-20]*%. Germany accounts for [60-70]*% of Vinnolit's production and is followed by Italy ([10-20]*% of its production). According to the Notifying Parties' own best estimates, Vinnolit has no - or *de minimis* - market presence in the rest of the EEA.

**Table 1: Commodity S-PVC - NWE Market Shares by Sales Volume in 2012
at National Level**

Suppliers	BE	NL	LU	DE	FR	IE	NO	SE	DK	UK
INEOS	[30-40]**%	[20-30]**%	[20-30]**%	[30-40]**%	[30-40]**%	[30-40]**%	[70-80]**%	[80-90]**%	[60-70]**%	[60-70]**%
Solvay	[30-40]**%	[20-30]**%	[10-20]**%	[10-20]**%	[20-30]**%	[20-30]**%	[0-5]**%	[10-20]**%	[0-5]**%	[20-30]**%
Combined	[70-80]**%	[40-50]**%	[30-40]**%	[40-50]**%	[60-70]**%	[60-70]**%	[70-80]**%	[90-100]**%	[60-70]**%	[80-90]**%
Shin-Etsu	[10-20]**%	[40-50]**%	[0-5]**%	[10-20]**%	[10-20]**%	[40-50]**%	[5-10]**%	[0-5]**%	[30-40]**%	[5-10]**%
Kem One	[0-5]**%	[0-5]**%	[0-5]**%	[10-20]**%	[10-20]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Vinnolit	[0-5]**%	[0-5]**%	[20-30]**%	[10-20]**%	[0-5]**%	[0-5]**%	[5-10]**%	[0-5]**%	[0-5]**%	[0-5]**%
Anwil	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[5-10]**%	[0-5]**%	[0-5]**%	[0-5]**%
BorsodChem	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Ercros	[0-5]**%	[0-5]**%	[20-30]**%	[0-5]**%	[5-10]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Vestolit	[0-5]**%	[0-5]**%	[10-20]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Fortischem	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Others	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Notifying Parties

**Table 2: Commodity S-PVC Other - Market Shares by Sales Volume in 2012
at National Level (1)**

Suppliers	AT	FI	IT	CH	PT	ES	GR	CY
INEOS	[5-10]**%	[40-50]**%	[10-20]**%	[30-40]**%	[0-5]**%	[0-5]**%	[40-50]**%	[30-40]**%
Solvay	[60-70]**%	[5-10]**%	[20-30]**%	[20-30]**%	[10-20]**%	[30-40]**%	[20-30]**%	[20-30]**%
Combined	[60-70]**%	[50-60]**%	[30-40]**%	[50-60]**%	[10-20]**%	[30-40]**%	[70-80]**%	[50-60]**%
Shin-Etsu	[10-20]**%	[30-40]**%	[5-10]**%	[5-10]**%	[70-80]**%	[20-30]**%	[5-10]**%	[10-20]**%
Kem One	[0-5]**%	[0-5]**%	[20-30]**%	[0-5]**%	[0-5]**%	[5-10]**%	[0-5]**%	[0-5]**%
Vinnolit	[5-10]**%	[5-10]**%	[5-10]**%	[20-30]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Anwil	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
BorsodChem	[5-10]**%	[0-5]**%	[0-5]**%	[5-10]**%	[0-5]**%	[0-5]**%	[10-20]**%	[0-5]**%
Ercros	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[10-20]**%	[30-40]**%	[0-5]**%	[0-5]**%
Vestolit	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Fortischem	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%
Others	[0-5]**%	[0-5]**%	[5-10]**%	[0-5]**%	[0-5]**%	[0-5]**%	[0-5]**%	[20-30]**%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: Notifying Parties

Table 3: Commodity S-PVC - Other Market Shares by Sales Volume in 2012 at National Level (2)

Suppliers	BU	CZ	HU	LT	PL	RO	SK
INEOS	[10-20]*%	[5-10]*%	[5-10]*%	[80-90]*%	[30-40]*%	[5-10]*%	[0-5]*%
Solvay	[20-30]*%	[40-50]*%	[20-30]*%	[0-5]*%	[10-20]*%	[10-20]*%	[5-10]*%
Combined	[30-40]*%	[40-50]*%	[30-40]*%	[80-90]*%	[40-50]*%	[10-20]*%	[5-10]*%
Shin-Etsu	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%
Kem One	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%
Vinnolit	[0-5]*%	[5-10]*%	[0-5]*%	[5-10]*%	[0-5]*%	[0-5]*%	[0-5]*%
Anwil	[10-20]*%	[10-20]*%	[0-5]*%	[10-20]*%	[40-50]*%	[5-10]*%	[0-5]*%
BorsodChem	[10-20]*%	[30-40]*%	[60-70]*%	[0-5]*%	[5-10]*%	[60-70]*%	[0-5]*%
Ercros	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%
Vestolit	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%
Fortischem	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	87%
Others	[20-30]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%	[0-5]*%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Notifying Parties

- (277) This overview clearly shows that the portfolio and location of plants operated by an S-PVC player, as well as the magnitude of its production, allow such a supplier to be more significantly present in more countries. In fact, Anwil, BorsodChem, Ercros, Fortischem, Vestolit and Vinnolit have very limited scope, as opposed to INEOS, Shin-Etsu and Solvay, and have significant sales at most in their neighbouring countries.

- (278) The Commission therefore concludes that, while suppliers located in NWE namely, the Notifying Parties, are exporting their production to other EEA regions and have developed a significant presence in these other regions, this is only a one-way flow from - but not into - NWE. The Commission's analysis shows that, except for some activity at the fringes of NWE, S-PVC suppliers located outside NWE, such as those in EE and Iberia do not have a meaningful presence in this region.¹⁸¹
- (279) The overview also highlights a significant competitive interaction between the Notifying Parties, on the one hand, and Anwil and BorsodChem, on the other, in EE. In this region, INEOS and Solvay are the second and fourth players, and Anwil and BorsodChem are the first and the third. All the other players have *de minimis* market presence. This strongly suggests that EE constitutes a separate area, where competitive conditions differ from WE and, in particular, NWE.
- (280) Within WE, Italy and Switzerland are essentially dominated by three players: Kem One, INEOS and Solvay for Italy and Vinnolit, INEOS and Solvay for Switzerland, the other players having *de minimis* or small market shares. There are two major players in, INEOS and Shin-Etsu, and other players are small or almost non-existent (Anwil and BorsodChem, [...] kt/y and [...] kt/y, respectively). Finally, in Austria Solvay is the major player, followed by Shin-Etsu, with all other players being around or below [5-10]*%. Lastly, Ercros has not supplied any volumes to Austria, Switzerland and Finland over the 2008-2012 period and has had a very small market presence in Italy over that period.
- (281) In sum, those four countries (Austria, Finland, Italy and Switzerland) show some common trends. Their interaction with S-PVC suppliers located in Iberia and EE seems to be very limited. Conversely, these four countries are - to a great extent - supplied by S-PVC suppliers located in NWE. For those reasons, the Commission has also investigated whether the Austria, Finland, Italy and Switzerland should be included in the geographic market for Commodity S-PVC (creating a "NWE+" dimension).

7.2.2. *Different pricing trends and different competitive dynamics*

- (282) As stated in Section 7.2., the relevant geographic market comprises the area in which the conditions of competition are sufficiently homogenous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas.
- (283) Homogenous conditions of competition in a given geographic area are consistent with similar prices charged within that given area. Evidence of different evolution of prices between different areas is thus a strong indication of heterogeneous conditions of competition, due to different demand or supply conditions, and thus different relevant geographic markets.¹⁸²
- (284) In a given relevant geographic market, differences between prices should be eliminated by customers arbitraging across the offers of alternative suppliers and by the existing suppliers similarly arbitraging across different groups of consumers. If in

¹⁸¹ The Notifying Parties also have a significant market presence in other small markets such as Greece and Cyprus, which can be reached by ship.

¹⁸² Market Definition Notice, Paragraph 7.

a given area customers and suppliers can respond to price differences and engage in effective arbitrage, then the clearing prices attached to the multiple transactions taking place in this area should converge to similar prices or the same price. Conversely, if different geographic areas show different price evolutions this is consistent with absence of effective arbitrage by customers and suppliers. This suggests different demand or supply conditions and thus different relevant geographic markets.

- (285) The Notifying Parties have submitted that the customers of commodity S-PVC arbitrage between different suppliers. In particular, the Notifying Parties explain that, among other aspects, customers rely on several S-PVC suppliers to be able to extract the best price by putting alternative suppliers in competition. The market investigation has also showed that customers tend to rely on a number of alternative suppliers which they have qualified for a given sourcing need, and their ability to switch between those qualified suppliers. Switching to a new supplier requires a qualification process which requires time and money, but is not an insurmountable barrier in the medium to long term. However, once the qualification process has been achieved, monthly negotiations allow customers to exercise arbitrage among suppliers.
- (286) Many of the Notifying Parties' customers are supplied by contracts that foresee a monthly negotiation in which customers seek several offers from different suppliers and suppliers iteratively adjust their prices to meet the competition and keep the customers. Such monthly negotiations are consistent with the existence of the arbitrage mechanism as described in Recital 280 and the ability of suppliers to adjust prices. The market investigation has also revealed that customers with contracts based on a price formula can renegotiate the parameters of the formula in situations where the formula does not reflect the real economic conditions. This also implies that a degree of arbitrage is possible for customers with a contract based on a formula.
- (287) On this basis, the Commission has analysed the transaction data provided by the Notifying Parties. The aim of this exercise is to test the existence of an effective arbitrage mechanism across EEA countries or across different geographic areas. In that respect, the framework of the Commission's analysis would be similar to a correlation analysis.¹⁸³ In their Response to the SO, the Notifying Parties have not contested these premises.
- (288) The Commission's analysis shows that during the 2007-2012 period the delivered prices charged by the Notifying Parties to the customers located in different regions of the EEA has evolved differently. Moreover, during a similar time period the overcapacity of the main suppliers located outside NWE increased whilst their sales to NWE stayed stable or decreased, in spite of increasing NWE prices relative to EEA regions outside NWE where these suppliers are located. This also indicates that despite experiencing relative less favourable prices in their regions relative to NWE, S-PVC suppliers located in these regions outside NWE did not react to a shift in relative prices.

¹⁸³ See for instance Commission's Decision of 30 September 2013 in Case M.6850 *Marine Harvest / Morpol*; and Commission's Decision of 13 May 2013 in Case M.6756 *Norsk Hydro / Orkla / Sapa JV*.

- (289) As explained and discussed in **Annex A**, the evidence collected by the Commission shows that the average price of INEOS and Solvay evolved differently in the NWE region relative to regions outside NWE (that is to say Rest of Europe ("RoE")). The same also holds for other benchmark regions, like EE and even to regions outside EEA (that is to say "Rest of the World" (RoW)).
- (290) The existence of a price divergence shows that there is no effective price arbitrage across NWE and the RoE or EE. The absence of arbitrage is clearly confirmed by the fact that a delivered tonne of commodity S-PVC sold in NWE has become over time more expensive relative to a tonne of commodity S-PVC of equal characteristics sold in the RoE (cumulatively between EUR [...] * and EUR [...] * per tonne according to the regression analysis presented in **Annex A**) and relative to a tonne of commodity S-PVC of equal characteristics sold in EE (cumulatively between EUR [...] * and EUR [...] * per tonne).
- (291) As summarized in **Table 4**, the differences computed by the Commission between INEOS' average prices in NWE and the three benchmark regions listed in Recital 285 demonstrate this trend. Depending on the region chosen for comparison INEOS' prices in NWE increased over the 2007-2012 period by [5-10]*-[10-20]*% (in particular, by [0-5]*-[5-10]*% in the period after the transaction between INEOS and Kerling (the "INEOS/Kerling merger) and by a further [0-5]*-[5-10]*% in the period after the transaction between INEOS and Tessengerlo (the "INEOS/Tessengerlo merger")).¹⁸⁴

Table 4: Cumulative Change of INEOS Prices of S-PVC in NWE Relative to RoE, EE and RoW

Price change after:	Benchmark region		
	RoE	RoW	EE
INEOS/Kerling (years 2008 to 2011)	[5-10]*%	[0-5]*%	[5-10]*%
INEOS/Tessengerlo (years 2011 to 2012)	[5-10]*%	[5-10]*%	[5-10]*%

Source: Commission computation on Notifying Parties' data

- (292) Similarly but of a different magnitude, as summarized in **Table 5**, differences between Solvay's prices in NWE and the other three regions indicate that prices in NWE increased over the 2007-2012 period by [0-5]*% (in particular, by [0-5]*-[0-5]*% in the period after the INEOS/Kerling merger and by a further [0-5]*% in the period after the INEOS/Tessengerlo merger.

¹⁸⁴ In 2011, INEOS acquired from Tessengerlo Chemie its entire S-PVC business. This business included in particular two S-PVC plants, one at Beek Geleen in the Netherlands and one at Mazingarbe in France, and chlorine/VCM/EDC plants at Tessengerlo in Belgium. This transaction was cleared by the Commission on 26 July 2011. See Case *INEOS/Tessengerlo Group S-PVC Assets* (2011).

Table 5: Cumulative Change of Solvay Prices of S-PVC in NWE Relative to RoE, EE and RoW

Price change after:	Benchmark region		
	RoE	RoW	EE
INEOS/Kerling (years 2008 to 2011)	[0-5]*%	[0-5]*%	[0-5]*%
INEOS/Tessenderlo (years 2011 to 2012)	[0-5]*%	[0-5]*%	[0-5]*%

Source: Commission computation on Notifying Parties' data

- (293) In their Response to the SO,¹⁸⁵ the Notifying Parties dismiss the existence of regional price differences between NWE and RoE or EE by arguing that the analysis contained in **Annex A** is not solid. However, in their criticism of the analysis in **Annex A**, the Notifying Parties only call into question the ability of this analysis to correctly identify the existence of a causal link between previous mergers and the regional price differences, not the existence itself of regional price differences as such. For the sake of clarity, the Commission asked the Notifying Parties to clarify this argument during the Oral Hearing. The Notifying Parties confirmed that they did not contest the existence of regional price differences as computed in **Annex A**.¹⁸⁶
- (294) The Commission thus concludes that INEOS' and Solvay's prices in NWE increased over the 2007-2012 period relative to other regions.
- (295) This evidence is also corroborated by the results of the comparison of average prices by means of the regression analysis shown in **Annex A**.¹⁸⁷ The persistence of such price difference in the context of a regression-based analysis provides further evidence of the existence of differential trends between prices in different regions and is therefore indicative of separate relevant geographic markets. In this light, the Commission confirms that the NWE should be considered as separate geographic markets.¹⁸⁸
- (296) The Commission has also analysed the behaviour of neighbouring regions to NWE such as Austria, Finland, Italy and Switzerland. In **Annex A**, starting with the NWE region as defined in the Commission's previous decisions and given the existence of (i) different price trends between NWE and EE and (ii) asymmetric market shares and focus of NWE and EE S-PVC suppliers, the Commission has also tested whether Austria, Finland, Italy and Switzerland displayed price trends that are similar to those

¹⁸⁵ Response to the SO, Paragraphs 5.35 and 6.12.

¹⁸⁶ At the Oral Hearing, the Notifying Parties replied that they "*objectively [...] do not dispute that there is a different development of prices, and you are correct that our objections to the diff in diff are about the causality.*"

¹⁸⁷ A regression-based estimation allows for an evaluation of the price changes within homogenous units. In fact, the regression-based estimation is able to compare transactions in two different regions with the same characteristics like K-values, purchasers and delivery mode, etc. Instead, simple averages can be less precise in comparing transactions with the same characteristics by lumping them together without distinctions. The regression analysis avoids this risk of the so called "composition effects". Furthermore, the regression analysis allows controlling for changes in production costs and to conduct robust statistical inference

¹⁸⁸ Results are less conclusive when comparing NWE with the Rest of the World. The estimation are less precise, see **Annex A** for more detailed explanations.

in NWE. These four countries all border the NWE region, lack local production capacity and are mostly served by capacity located in NWE.

- (297) Indeed, the same price evolution results can also be observed when adapting the comparison by adding these four countries to NWE, that is to say creating the NWE+ region. As shown in **Annex A**, the estimated price increases for NWE+ are very close to the NWE estimates when the control region is EE, meaning that prices in this NWE+ region diverge from prices in the EE region, comprising in particular Poland as the main EE country in terms of S-PVC consumption. In particular, the price increase between NWE+ and EE ranges from EUR [...] * to EUR [...] * per tonne which is comparable to the NWE-EE price increase range.
- (298) Conversely, the estimated price increase is larger for NWE+ when compared to RoE, adjusted for the inclusion within NWE of the four countries referred to in Recital 277.¹⁸⁹ These results indicate that in terms of price developments Italy, Switzerland, Austria and Finland are more similar to NWE than to RoE. Therefore, including these countries in any comparison group reduces the price difference between NWE and that comparison group.
- (299) Complementary to the evidence on price evolution, the evidence collected by the Commission also shows that over the 2008-2012 period the sales to NWE of all suppliers located outside NWE remained stable, while the overcapacity increased in a situation when prices in NWE relative to RoE were also increasing. On the basis of the Notifying Parties' and Eurostat data¹⁹⁰ (Eurostat data only for Shin-Etsu's Estarreja in Portugal),¹⁹¹ the Commission computes sales to NWE and the overcapacity of all the S-PVC suppliers located outside NWE, that is to say Anwil, BorsodChem and Fortischem in EE and Ercros and Shin-Etsu's Estarreja located in Iberia.

**Figure 6: Evolution of Commodity NWE S-PVC Sales of
EEA Competitors Located outside NWE**

[...] *

Source: Notifying Parties' data and Eurostat data

- (300) **Figure 6** shows that during a period of increasing prices in NWE relative to the RoE, the sales of EEA S-PVC suppliers located outside NWE overall remained stable. In particular, Anwil shows a very large decrease in sales to NWE, BorsodChem shows a relatively stable trend, Ercros and Shin-Etsu display a slight increasing trend but of limited magnitude (a total of [...] * kt/y of sales) and Fortischem shows effectively no

¹⁸⁹ The price increase between NWE+ and RoE ranges from EUR [...] * to EUR [...] * per tonne, which is significantly higher than the NWE-RoE price increase.

¹⁹⁰ Eurostat data refer to trade in all PVC, and not just commodity S-PVC. However, as acknowledged by the Notifying Parties in the Form CO, the majority of PVC is constituted by commodity S-PVC and, therefore, these data provide a reasonable proxy for the pattern of trade in commodity S-PVC.

¹⁹¹ The year 2007 is missing for the sales and the overcapacity computation because the Notifying Parties explains that they could not provide data for the year 2007 due the lack of information. For this analysis, the absence of the 2007 does not seem a crucial element that could invalidate the results. The year 2007 was a record year in the S-PVC market and it is thus reasonable to expect during this year high sales of these suppliers in NWE and very small level of overcapacity.

sales in NWE. Notwithstanding the fact that cumulatively the share of sales in NWE of these suppliers is very limited (that is to say consistently lower than [5-10]*%), this trend shows the lack of response of these suppliers to the price increase observed in NWE relative to the RoE (where these suppliers are located).

- (301) Even taking a shorter time period, this lack of response is confirmed. From 2011 to 2012, INEOS raised prices by [5-10]*% to [5-10]*% and, even within this shorter time frame, when prices raised significantly, there was no response by EEA suppliers, as shown in **Figure**.
- (302) The evolution of overcapacity corroborates the lack of response of suppliers located in EEA outside NWE. **Figure** shows that, with the exception of 2009 in which the crisis led to high spare capacity level which persisted to a lesser extent in 2010, the underlying overall trend is an increasing one. This trend is also confirmed by all suppliers individually with the exception of Shin-Etsu in Estarreja, which however shows very limited spare capacity in the years pre-crisis and post-crisis, that is to say 2008-2012. All in all, each supplier was affected by the crisis, but overall all their levels of overcapacity between 2008 and 2012 have increased.

Figure 7: Evolution of Spare Capacity of EEA Competitors Located Outside NWE

[...]*

Source: Notifying Parties' data

- (303) Even taking a shorter time period, the increase in spare capacity is confirmed. From 2011 to 2012, INEOS raised prices by [5-10]*% to [5-10]*% and spare capacity increased significantly in the same period, as shown in **Figure 7**.
- (304) This evidence is consistent with limited ability or incentive of EEA suppliers located outside NWE to respond to a price increase in NWE relative to the RoE.
- (305) The lack of ability and incentive to defeat a price increase is even clearer when looking at EE suppliers in particular. During the 2007-2012 period, INEOS and Solvay raised their prices respectively by [10-20]*% and [0-5]*%. In the overlapping period from 2008 to 2012, the EE suppliers show instead a cumulative reduction of sales of [...]* kt/y (equal to a [...]*% decrease) and an increase of spare capacity of [...]* kt/y (equal to a [...]*% increase). This evidence clearly shows the very limited competitive constraint that EE S-PVC suppliers exercise on the NWE S-PVC suppliers in the NWE market. Furthermore, it also shows the lack of ability and incentive of EE S-PVC suppliers to defeat the significant relative price increase in NWE.
- (306) The behaviour of S-PVC suppliers located outside NWE can be summarized as follows: despite being faced with a relative increase in prices in NWE, and despite having capacity available, these suppliers did not increase their sales in NWE and did not defeat the NWE price increase described in this Section.¹⁹²

¹⁹² The same conclusion applies, if one were to consider a NWE+ dimension.

- (307) It is not only S-PVC suppliers that are located outside NWE that show such behaviour. Consistently, also importers located outside the EEA show a decreasing trend of sales into NWE. **Figure 8** shows this trend.¹⁹³

Figure 8: Evolution Commodity S-PVC Sales in NWE of Competitors Located Outside EEA

[...]*

Source: Notifying Parties' data

- (308) As indicated by the Market Definition Notice, past evidence of diversion of orders to other areas is among the evidence that can be used in order to reach a conclusion on the geographic relevant market.¹⁹⁴ The evolution of sales and overcapacity, in the context of increasing relative prices in NWE, suggests that S-PVC suppliers located outside NWE did not respond to the increasing price of commodity S-PVC sold in NWE, despite having the capacity to do so. This is clear evidence of the very limited role played by the S-PVC suppliers located outside NWE in affecting competitive conditions in the commodity S-PVC market in NWE. This is also evidence of a difference in the supply structure between NWE and RoE, and evidence that plant location is important for S-PVC suppliers in order to be competitive in a given region. This is indicative of separate geographic markets.
- (309) Finally, the Commission notes that, as stated in the Market Definition Notice,¹⁹⁵ in order to address demand substitution “*the question to be answered is whether the parties' customers would switch to a readily available substitutes or suppliers located elsewhere in response to an hypothetical small (in the range 5 to 10%) but permanent relative price increase in the products and areas being considered. If substitution were enough to make the price increase unprofitable because of the resulting loss of sales, additional substitutes and areas are included in the relevant market. This would be done until the set of products and geographical areas is such that small, permanent increases in relative prices would be profitable.*” The principles set out in this quote are the equivalent to the application of a so-called Hypothetical Monopolist Test.
- (310) While the qualitative analysis in Section 7.2. shows that NWE customers do not regard non-NWE as suitable supply options, the quantitative evidence referred to in Recital (287) shows that, over six years and in the context of an oligopoly, INEOS' prices for commodity S-PVC sold to NWE customers increased by [5-10]* to [10-20]*%, as well as Solvay's prices to a lesser extent, and, simultaneously, sales of EEA and non-EEA competitors located outside NWE decreased and their overcapacity increased. This is consistent with a profitable price increase in the context of an oligopolistic market and, simultaneously, a lack of reaction of S-PVC suppliers outside NWE to defeat such a price increase.
- (311) As illustrated in Recital (297), the same is also true if a shorter time period from 2011 to 2012 is considered. In fact, the quantitative evidence shows that in two years,

¹⁹³ The same conclusion applies, if one were to consider a NWE+ dimension.

¹⁹⁴ Market Definition Notice, Paragraph 38.

¹⁹⁵ Market Definition Notice, Paragraph 17.

and to be more precise from the INEOS/Tessenderlo merger, that is to say one year and an half, in the context of an oligopoly, INEOS' prices for commodity S-PVC sold to NWE customers increased by [5-10]* to [10-20]*% and, simultaneously, sales of EEA and non-EEA competitors located outside NWE remained stable while their overcapacity increased. Again, this evidence is consistent with a profitable price increase in the context of an oligopolistic market and, simultaneously, a lack of reaction of S-PVC suppliers outside NWE to defeat such increase in prices.

- (312) The evidence referred to in Recitals (306) - (307) is also confirmed by the results of the analysis developed in **Annex A** on the price effects of past consolidation in the S-PVC industry (see Section 9.1. below). This analysis shows that past mergers, in particular the INEOS/Tessenderlo merger, have resulted in non-negligible and profitable price increases. The identification of those effects is directly linked with the existing differences in supply and demand conditions between the NWE and other EEA regions. In the absence of those differences no price effect could have been identified between those regions. Therefore, the existence of those price effects is consistent with a relevant geographic market which is regional in scope.
- (313) Furthermore, the logic of the Hypothetical Monopolist Test implies that such a test needs to be applied first to a narrow market, and that the market definition should be broadened until the narrowest market that satisfies the test. The Commission accordingly needs to select the smallest relevant geographic market possible among several candidate markets. The evidence referred to in Recitals (306) - (307) indicates that a relevant geographic market defined as NWE satisfies the Hypothetical Monopolist Test. Therefore there is no need for the Commission to test whether larger geographic markets could also satisfy the Hypothetical Monopolist Test.¹⁹⁶
- (314) The Commission therefore concludes that the quantitative evidence is consistent with the qualitative evidence described in this Section 7.2. and that it identifies a geographic market which is regional in scope and defined as NWE.

7.2.3. *Asymmetry of trade flows - NWE constitutes a self-standing cluster*

- (315) The results of the market investigation are consistent with the results of both the quantitative analysis presented in Section 7.2.2. and the analysis of S-PVC supplier's focus in Section 7.2.1. In particular, the market investigation provides additional elements suggesting that S-PVC suppliers located outside of NWE only play a marginal role for NWE customers and do not represent viable alternative options.
- (316) First, based on the market investigation there seems to be a stark asymmetry between flows from NWE to other parts of the EEA, on the one hand, and flows from other parts of the EEA to NWE, on the other. In particular, the available evidence indicates the absence of significant flows into NWE.

¹⁹⁶ In the Response to the SO, the Notifying Parties submit a stationarity analysis that supports the inclusion of Austria, Finland, Italy and Switzerland in the NWE region. On the basis of this analysis, the Notifying Parties advocate a wider relevant geographic market that extends to NWE+. However, this argument does not undermine the conclusions from a Hypothetical Monopolist Test conducted on a NWE market, and it remains consistent with adopting a definition of the relevant geographic market equivalent to the narrowest market that satisfies the Hypothetical Monopolist Test.

- (317) Indeed, when considering customers who declared that they operate plants located in WE, including the Northern European region, around 90% of those plants source either all or the large majority of their S-PVC needs, between 75-100%, within the same region.¹⁹⁷ When considering customers who declared that they operate plants located in Central and Eastern European region, the trend is much less clear. Around 40% these plants source 50% or more of their needs from outside of the region. When considering customers who declared that they operate plants located in the Southern European region, around 40% of these plants source 35% or more of their needs from outside of that region.
- (318) Second, the Commission also asked specific questions aimed at explaining the reasons why customers in NWE do not rely to a significant extent on non-NWE suppliers. Within a sample of NWE customers, 51% of them did not have any commercial relationships with S-PVC suppliers located outside NWE.¹⁹⁸ These customers mention, among others, high transport costs, unreliability of supply, need for just-in-time delivery, to justify their reluctance to use suppliers located outside NWE. Moreover, it is likely that these customers would have to establish a commercial relationship with these S-PVC suppliers and qualify their products, which entails time and cost. This was confirmed by the Notifying Parties, who explained in their Response to the Decision opening the proceedings that they do not argue that "*there are no costs or time delays in accrediting new suppliers or indeed that these are negligible.*"¹⁹⁹ Therefore, for these customers switching is in any event not immediate and at no or little cost.²⁰⁰
- (319) Considering the other half of the NWE customers who declared that they have an existing commercial relationship with at least one non-NWE S-PVC suppliers, some customers use Solvay's and Shin-Etsu's non-NWE plants as a back-up solution. Other customers, despite having a commercial relationship with non-NWE S-PVC suppliers - mainly due to the geographic proximity - seem reluctant to rely on them to a larger extent. As pointed out by one customer:

"In 2012 we sourced in NWE less than 2 % of our PVC demand from outside (only K60 from Anwil in Czech Republic, as the distance from their plant to our plants is comparable to NWE PVC producers and as we wanted to have a second source for safety reasons). We do not expect an increased importance in the future due to: product quality [...]; logistics (long distances, too high transport costs, low silo capacities at our sites, risks relating to unreliability of supply, difficulty to meet our logistics spec., see # 3); weak financial situation

¹⁹⁷ Replies to question 22 - Phase I Questionnaire to customers (S-PVC); and replies to question 16 - Phase II Questionnaire to additional customers (S-PVC). Customers were left free to define the region where their premises are located and, therefore, some replies could not be properly categorized for the purpose of this exercise (for instance, customers indicating Europe as their region).

¹⁹⁸ Replies to question 1 - Phase II Questionnaire follow-up to customers (S-PVC).

¹⁹⁹ Response to the decision opening the proceedings, Paragraph 5.24.

²⁰⁰ See Commission's notice on the definition of relevant market for the purposes of Community competition law, point 29, referring to the basic question whether "*customers of the parties would switch their orders to companies located elsewhere in the short term and at a negligible costs.*"

*(Ercros, Fortischem) and risk (or status of) of bankruptcy (Oltchim, Kem One)."*²⁰¹

- (320) The Commission considers that, consistent with the data on S-PVC suppliers' geographic focus, this provides a strong indication that NWE customers rely to a great extent on S-PVC suppliers located in the same region and that NWE constitutes a self-standing industrial cluster.
- (321) The same is not true for customers in other regions of the EEA, that is to say outside NWE. In particular, EE customers seem to rely on NWE S-PVC suppliers to a considerable extent. This is in line with the analysis contained in Section 7.2.1. and in the customers' replies. In that regard, 90% of the customers that responded to the Commission's question source commodity S-PVC from at least one S-PVC supplier located in NWE and only 2% customers believe that NWE S-PVC suppliers would not be a suitable supply option for them because of high transport costs, shipment times and payment terms.²⁰² On balance, non-NWE customers seem to be less time sensitive than NWE customers. As pointed out by an international customer:

*"In Eastern Europe, Profine sources its S-PVC needs from all over the world. This is so because price levels and logistics allow Profine to be relatively flexible. Quite to the contrary, Profine's sourcing strategy is different in Western Europe, where it sources its needs from Western European players only. This is due to a number of restrictions such as logistics, security of supply, limited storage capacity and payment options."*²⁰³

- (322) Third, an examination of Eurostat data reporting PVC trade flows provide additional insights into the flows of S-PVC between the countries and regions of the EEA.²⁰⁴ In 2012, around 73 kt/y of PVC were shipped from EE (comprising Bosnia Herzegovina, Bulgaria, Croatia, the Czech Republic, Hungary, Macedonia, Poland, Romania, Slovakia, Slovenia, Serbia) to NWE (minus Norway). In the same year, around 260 kt were shipped from NWE to EE. This is in line with the 2014 IHS World Analysis - Vinyls, which explains that Central Europe (which essentially reflects the Commission's EE)²⁰⁵ has become a net importer since 2009.

*"Central European vinyls producers had heavily relied on exports to West Europe as reflected in the 40 to 45% share of exports in total regional demand in the year up to 2008. This share has recently fallen and made Central Europe a net importer region since 2009 ... low demand growth prospects for West Europe will likely divert some exports from Central Europe to other destinations, such as Turkey and other Central/East European countries, over time."*²⁰⁶

²⁰¹ Reply of Renolit SE ("Renolit", Germany) to question 1 - Phase II Questionnaire follow-up to customers (S-PVC) ID4666.

²⁰² Replies to question 5 - Phase II Questionnaire follow-up to customers (S-PVC).

²⁰³ Non-confidential version of the agreed minutes of a conference call with Profine of 15 May 2013 ID5208.

²⁰⁴ See Footnote 190 above.

²⁰⁵ For IHS, WE is essentially a grouping including EU15 plus Norway and Switzerland, while the Central European region comprises Albania, Bulgaria, the Czech Republic, Hungary, Poland, Slovakia, Romania and the Former Yugoslavia. See 2014 IHS World Analysis - Vinyls, Pages 8-9.

²⁰⁶ 2014 IHS World Analysis - Vinyls, Page 178.

- (323) This fundamental asymmetry between trade flows is probably due to, among other things, (i) the small number of players in the Eastern part of the EEA (only three), along with the need of customers to spread purchases over three-four S-PVC suppliers; and (ii) the small size of S-PVC suppliers in this region, given that BorsodChem and Anwil together represent [10-20]*% of the overall NWE production in 2012 ([...]* kt vs [...]* kt), Fortischem being a very minor player (only [...]* kt). The 2014 IHS Chemical World Analysis - Vinyls supports this interpretation and adds a third element of differentiation between Central European (as defined by IHS) and WE players based on the quality, cost position and competitiveness and access to advantageous raw materials of their respective assets:

“Vinyls production facilities in Central Europe generally are older, smaller and less competitive than vinyls plants in West Europe ... Energy costs are often high in the region, which encumbers the chlor-alkali side of the equation. Perhaps the largest drawback from a strategic point of view is limited access to competitively priced ethylene in the region.”²⁰⁷

- (324) NWE S-PVC suppliers - particularly, INEOS and Solvay - were on the contrary able to penetrate EE. For instance, in Poland - the biggest market in EE - the Notifying Parties sold [...]* kt/y of commodity S-PVC in 2012, while Shin-Etsu, Kem One, Vinnolit and Vestolit sold [...]* kt/y, [...]* kt/y, [...]* kt/y and [...]* kt/y, respectively, based on the Notifying Parties' own best estimates. Apart from the two Notifying Parties, both Vinnolit and Vestolit have plants in neighbouring Germany, and also have spare capacity. However, they were only selling minimal amounts in Poland.

- (325) INEOS and Solvay were therefore *de facto* the only two very significant traders involved in the trade from NWE to EE. The fact that the Notifying Parties are the two main multi-country players as a result of their plant portfolio, size and location, as well as competitive cost-base, is also borne out by the 2012 Kerling PLC Annual Report to Bondholders, which states:

[...]*²⁰⁸

[...]*²⁰⁹

- (326) The flow from EE to NWE (minus Norway) essentially reflects a relatively limited flow of PVC from Anwil, BorsodChem and Fortischem to Germany only, not to NWE as such. Indeed, around 64 kt/y of PVC were moved from the Czech Republic, Hungary, Poland and Slovakia to Germany, which represents almost 90% of the overall PVC trade flow from EE to NWE. This analysis provides a further indication that the interaction between NWE and EE is essentially limited to the German/Polish

²⁰⁷ 2014 IHS World Analysis - Vinyls, Page 172.

²⁰⁸ 2012 Kerling PLC Annual Report to Bondholders, Page 24; and 2011 Kerling Plc Annual Report to Bondholders, Page 44.

²⁰⁹ 2012 Kerling PLC Annual Report to Bondholders, Page 51; and 2011 Kerling Plc Annual Report to Bondholders, Page 51. Schkopau's strategic location for Eastern Europe was already discussed in 2009, [...]* INEOS' internal document, "PROJECT IPSWICH: Management Presentation Q&A" of 3 September 2009, Pages 3-4.

border.²¹⁰ Customers point out the reluctance of EE S-PVC suppliers to commit to NWE:

*"We can see nevertheless that suppliers from eastern countries are reluctant to send products so far due to the transport costs."*²¹¹

*"With all Eastern European suspension PVC production plants, there is a risk of uncertainty of supply. These plants mainly serve their local market + the neighbouring Eastern European countries and Russia. In case these plants have a supply issue or a production issue, they are known to be giving priority to their local customers while the Western European customers may be put on allocation or even with no supply at all."*²¹²

- (327) Eurostat data also shows asymmetry in PVC flows between NWE and EE with regard to Austria, Finland and Italy. In 2012, around 55 kt/y of PVC were shipped from EE to those three countries, while a much larger amount of PVC, up to 545 kt/y, was shipped from NWE to Austria, Finland and Italy. The Commission understands that the addition of Switzerland to the computation would not change the outcome. This suggests that Austria, Finland and Italy are more closely associated with NWE rather than EE.
- (328) With regard to Iberia, the Commission notes that, in 2012, Spain exported around 71 kt of PVC to NWE (minus Norway), of which around 39 kt represent the local flow across the Spanish/French border. In 2012, Portugal exported around 18 kt of PVC to NWE (minus Norway), of which around 9 kt were shipped to France. Therefore, no more than 88 kt of PVC were exported from Iberia to NWE and around 54% of this volume (48 kt) was shipped to France only.
- (329) An analysis of these trade flows shows that Spanish exports to NWE (minus Norway) have decreased over the period 2010-2012, while Portuguese exports increased. This increase was probably caused by the specific situation of the Iberian market, where there are three players (Solvay's Martorell, Shin-Etsu's Estarreja and Ercros) with a production amounting to 581 kt/y and a national demand of 263 kt/y in 2012. Despite this local imbalance between demand and supply, the relative increase in prices in NWE described in Section 7.2.2. and even increasing spare capacity, Ercros' sales to NWE only slightly increased over the 2008-2012 period. As regards Shin-Etsu's Estarreja, Eurostat data shows an increased flow from Portugal to NWE from 2 kt/y to 18 kt/y over the 2008-2012 period, which still represents a very minor flow.

7.2.4. *Relevance of supply radii*

- (330) The Commission went on to analyse the average distance between customers' and S-PVC suppliers' premises inside and outside NWE.²¹³ This exercise aimed at assessing

²¹⁰ As explained in Section 7.2.5. and 7.2.6., customers compare delivered prices and are unwilling to bear high transport costs.

²¹¹ Reply of Grosfillex SA ("Grossfillex", France) to question 24 - Phase I Questionnaire to customers (S-PVC) ID5363.

²¹² Reply of IVC NV ("IVC, Belgium) question 3 - Phase II Questionnaire follow-up to customers (S-PVC) ID4583.

²¹³ Replies to question 23 - Phase I Questionnaire to customers (S-PVC); and replies to question 17 Phase II Questionnaire to additional customers.

whether a radius of 1 000 km or even larger constitutes a good proxy for approaching the geographic dimension of the S-PVC market. In previous decisions, the Commission considered that customers had competitive alternatives among S/PVC suppliers located within a range of 1 000 - 1 500 and that shipments could go up to 2 000 km. However, difficult economic conditions seem to cause customers to shorten the radius within which they operate in order to reduce costs.

- (331) As the replies to the market investigation indicate, the average supply radius for customers located in different countries or regions can vary significantly.²¹⁴ The replies suggest that customers in Germany, the Benelux and the United Kingdom, on average, source from S-PVC suppliers located below 500 km, while customers in the Czech Republic, France, Poland, and Sweden remain below or around 700 km. Customers in Austria, Denmark, Italy, Portugal, Romania, Spain and Switzerland have a reach of between 800 - 1 000 km. Finally, in Bulgaria, Cyprus, Finland and Greece customers source from plants located above 1 000 km (or even considerably above 1 000 km).
- (332) Some general patterns can be drawn from these replies. On average, distances in countries featuring several S-PVC plants - therein or in their proximity - remain below or around 700 km and considerably below 1 000 km, with the exception of Portugal (at the far end of the European cluster). In other words, customers located close to S-PVC plants optimize their sourcing strategy and rely on the closest and cheapest supply options. Customers located in Austria, Denmark, Italy, Romania and Switzerland - countries with no local production - on average extend their reach up to around 1 000 km. Finally, customers in Cyprus, Bulgaria, Finland and Greece - countries with no local production and few close supply options - on average accept longer distances.
- (333) This essentially shows that, for the purpose of defining the dimension of the geographic market for S-PVC, the mechanic application of a given distance radius (be it 500 km, 1 000 km or more) does not capture the actual competitive dynamics of a country, region or area within the EEA as average distances can vary significantly (for example, the average distance in Italy is more than twice, and in Greece is about six times that in the Benelux).
- (334) In this context, several customers emphasize that distance alone does not provide a satisfactory answer to the geographic dimension of the commodity S-PVC market. They explain that distances must be read in conjunction with other relevant factors.²¹⁵ For example, one customer explains that "*Generally, the closest the supplier plant is to the customer plant, the lower is the transportation cost but there is also other factor such as their variable production cost position.*"²¹⁶
- (335) Applying a certain radius applied to all plants of S-PVC suppliers without any distinction is not informative either. First, the radius achieved by INEOS and Solvay

²¹⁴ Replies to question 23 - Phase I Questionnaire to customers (S-PVC); and replies to question 17 Phase II Questionnaire to additional customers (S-PVC). Imports were not considered in this exercise.

²¹⁵ Replies to question 24 - Phase I Questionnaire to customers (S-PVC); and replies to question 18 Phase II Questionnaire to additional customers (S-PVC).

²¹⁶ Reply of Aliaxis S.A. ("Aliaxis", Belgium) to question 24 - Phase I Questionnaire to customers (S-PVC) ID2568.

with their portfolio of plants and cost-base is rather different to the radius that could be achieved by, for example, Vinnolit or BorsodChem. This is confirmed by the asymmetric market shares provided by the Notifying Parties (discussed in Section 7.2.1.) and by the Notifying Parties' internal documents. In particular, INEOS' 2012 Kerling PLC Annual Report to Bondholders talks about [...]*. This is also confirmed by the [...]* transport costs of INEOS compared to Solvay as shown in **Annex A**. Finally, the fact that the Notifying Parties may be able to reach a very wide radius does not equate to homogenous competitive conditions within that radius as demonstrated in Section 7.2.2. .

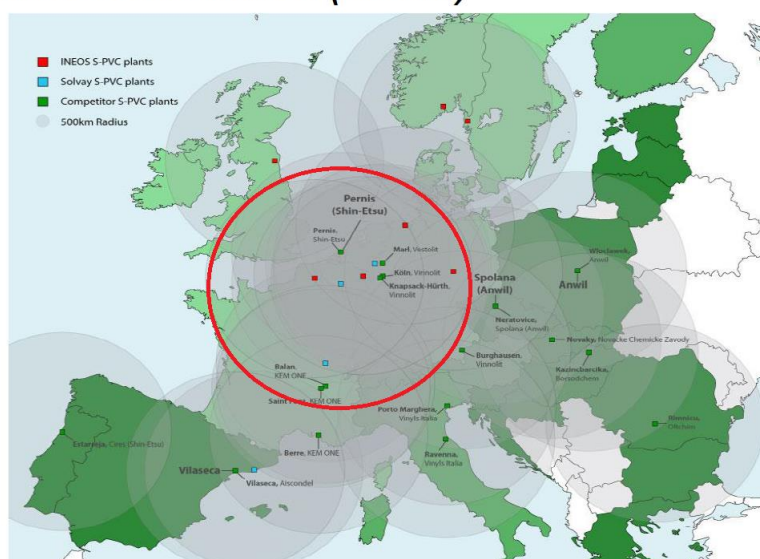
- (336) In their Response to the SO, the Notifying Parties contest the Commission's rejection of supply radii.²¹⁷ In that regard, they stress that around 40% of the customers would have confirmed that delivery distances of 1 000 km or more are competitive. They also reiterate that a supply radius of 1 000 km or even 500 km would give rise to a chain of substitution across the entire EEA. This would be the scenario referred to in Paragraph 57 of the Market Definition Notice.
- (337) It is hard to see how this argument would help the Notifying Parties' case. First, even if the proportion of customers suggested by the Notifying Parties was accepted that would still constitute a minority. Second, the proportion includes several customers who are based in Iberia, provide wide ranges (such as 100-1 600 km) or have multiple plants. Therefore, those replies cannot be simply accepted, but must be subject to careful scrutiny. That is also why the Commission engaged in a detailed analysis of supply radii and distances based on the customers' locations and number of plants.
- (338) With respect to the existence of a chain of substitution across the EEA, the Notifying Parties have not explained how price movements in one area of the EEA would trigger arbitrage and price convergence.²¹⁸ Their argument is essentially based on the visual representations of overlapping supply radii, without any attempt to explain the dynamics of the alleged chain of substitution. The Commission's quantitative analysis, however, shows lack of arbitrage and different pricing trends, which the Notifying Parties did not contest.
- (339) Finally, this Section discusses at length the reasons why the mechanic application of supply radii is not informative. Even if one were to consider a 500 km supply radius, as the Notifying Parties suggest, that exercise would single out an area narrower than NWE, where at least in principle competitive conditions may be different from the rest of the EEA. However, that is not different from the Commission's starting point in Section 7.2.1., where it acknowledges the high concentration of S-PVC plants in just a few countries of the EEA.

²¹⁷ Response to the SO, Paragraph 5.10 *et seq.*

²¹⁸ At Paragraph 57, the Market Definition Notice states that "*In certain cases, the existence of chains of substitution might lead to the definition of a relevant market where products or areas at the extreme of the market are not directly substitutable. ... if the distribution of plants is such that there are considerable overlaps between the areas around different plants, it is possible that the pricing of those products will be constrained by a chain substitution effect, and lead to the definition of a broader geographic market*" (emphasis added). The Market Definition Notice therefore places the burden on notifying parties of proving that the scenario described therein does apply to a given case.

Figure 9 : 500 km Supply Radius According to the Notifying Parties

S-PVC can be supplied over large distances Chains of substitution (500km)



20



Source: Notifying Parties

7.2.5. Price and non-price barriers to trade of S-PVC

- (340) Transport costs, shipment times and technical support are important for customers. Generally, customers have limited knowledge of transport costs as such, but do compare delivered prices charged by S-PVC suppliers. These prices already include transport costs.²¹⁹ Based on their market experience, customers consider that transport costs can reach 10% of the final price they pay within a 1 000 km distance²²⁰ and can grow to around 15% within a 1 500 km distance,²²¹ which is hardly an attractive sale.²²² These figures are confirmed by the transport cost data provided by the Notifying Parties.²²³
- (341) EUPC, a trade association representing 55 000 companies depending on Commodity S-PVC, explains that

"many [members of EuPC] considered the geographic market ... at between 500-700 km. All considered proximity to be a critical parameter for choosing the suppliers. The main reason for this are transport costs which, for a

²¹⁹ Replies to questions 24 and 25 - Phase I Questionnaire to customers (S-PVC).

²²⁰ For instance, replies of Rehau and Synseal Extrusions Ltd ("Synseal", United Kingdom) to question 26 - Phase I Questionnaire to customers (S-PVC) ID5372 and ID5356.

²²¹ For instance, reply of Reflex Film AB, Sweden to question 26 - Phase I Questionnaire to customers (S-PVC) ID2044; and reply of Jenstar Ltd, Cyprus to question 20 - Phase II Questionnaire to additional customers (S-PVC) ID5236.

²²² Replies to question 25 - Phase I Questionnaire to customers (S-PVC).

²²³ Presented in **Annex A**.

relatively low commodity like PVC, represent a key factor in choosing a supplier." (sic)²²⁴

- (342) But transport costs are also influenced by delivery modes. Road transport by truck is more expensive than sea transport by ship, especially when trucks cannot carry other substances on their way back to the plant of origin. The majority of commodity S-PVC in the EEA and, in particular in NWE, is delivered in bulk to customer premises, as opposed to bags, which are mainly used for exporting outside the EEA.²²⁵ As pointed out by customers:

"Long distances between supplier and customer are expensive and reduce/wipe out the competitiveness of some suppliers. This disadvantage is increased when using bulk delivery because of the cost of specialized transport that is to say dedicated bulk trucks: it is difficult to find return freight for bulk transportation. Intermodal transportation is not necessarily available and easy to organize from the point of view of reliability and flexibility."²²⁶

"... there could be very high costs associated to bulk tankers travelling back across Europe empty, this could add upwards of EUR50 - 80/t on to the material price and is the most likely reason that none of the southern Europe (with exception of Shin Etsu, Portugal for back up) or Eastern European suppliers show any interest in supplying the UK market."²²⁷

- (343) In the Response to the SO, the Notifying Parties argue that transport costs and delivery methods do not materially impact on delivery distances.²²⁸ They point out that, within a 1 000 km distance, transport costs would be in the region of 7% and, therefore, this would not represent a barrier to trade. However, the Notifying Parties do not seem to take into account that transport costs impact different S-PVC suppliers in an asymmetric way, given that - except for INEOS and Solvay - no other S-PVC supplier operates a large portfolio of plants in different countries in NWE. Moreover, the analysis of the Notifying Parties' data contained in **Annex A** shows that transport costs increase with distance and reach a maximum of [70-80]* EUR/tonnes within a 1 100 km distance in NWE. This erodes a significant portion of the Notifying Parties' average full chain margin, that is to say around [40-50]*% for INEOS and [20-30]*% for Solvay.

- (344) Besides logistics, security and flexibility of supply also play an important role. Many customers produce on a just-in-time basis and may receive even more than eight truck deliveries per day. They wish to have a high degree of flexibility to reshuffle planning, if necessary, and require a quick reaction from S-PVC suppliers in case of faulty products or other technical issues.

²²⁴ EuPC's Comments on the SO, Pages 2-3.

²²⁵ INEOS' also ships some volumes to the Iberian Peninsula by bags.

²²⁶ Reply of Deceuninck N.V. ("Deceuninck", Belgium) to question 4 - Phase II Questionnaire follow-up to customers (S-PVC) ID4625.

²²⁷ Reply of Synseal to question 4 - Phase II Questionnaire follow-up to customers (S-PVC) ID4651.

²²⁸ Response to the SO, Paragraph 5.19.

(345) This is consistent with the 2012 Kerling PLC Annual Report to Bondholders, where INEOS itself states that “[...]”²²⁹ These features are hardly compatible with long distance shipments. For these reasons, suppliers that are located farther afield might not be considered suitable alternative sources of supply.

(346) In that regard, it is worth noting that around 75% of the customers state that there are commercial advantages to establishing a relationship with suppliers located in the proximity of their premises.²³⁰

*"Most companies operate a just in time stocking basis and thus you need a 24 hour turnaround if you have changes to the production programme."*²³¹

*"Quick and effective technical assistance in the event of technical problems, and flexibility of supply which is indispensable for the type of production pursued by our company." (our translation)*²³²

*"The advantages mainly concern response time to urgent needs, response time for replacement shipments in case of faulty prior deliveries, and greater availability of on-site support where required."*²³³

*"Short lead-times, possibility to switch delivery date even shortly before scheduled delivery. This flexibility is vital for us due to the nature of our markets (high seasonality of our demand, short lead-times to our customers). Also we need to avoid significant overcosts and financial impacts (increased working capital) as consequence of dislocated suppliers and higher safety stocks."*²³⁴

(347) One customer summarizes these difficulties by explaining that in essence all non-NWE do not constitute a suitable supply option for its NWE plants:

*"Anwil and Borsodchem are not alternatives because of lower quality of their S-PVC and longer distances; Ercros is not an alternative because of its small capacity, the logistic problems of supplying from Spain to Germany, their limited feed-stock capacities ... and its financial weak condition."*²³⁵

(348) In the Response to the SO, the Notifying Parties claim that the Commission failed to identify the precise distance beyond which non-price barriers become relevant. However, the Commission has already made clear that the identification of a distance, or a supply radius, and its mechanic application is not informative in a market characterised by high geographic differentiation. EUPC's submission is helpful in this regard, that trade association explains that

²²⁹ 2012 Kerling Plc Annual Report to Bondholders, Page 51; and 2011 Kerling Plc Annual Report to Bondholders, Pages 52-53.

²³⁰ Replies to question 27 - Phase I Questionnaire to customers (S-PVC).

²³¹ Reply of Doeflex Compounding Ltd, United Kingdom to question 27 - Phase I Questionnaire to customers (S-PVC) ID4865.

²³² Reply of Gewiss SPA ("Gewiss", Italy) to question 27 - Phase I Questionnaire to customers (S-PVC) ("*Assistenza tecnica rapida ed efficace in caso di problemi tecnici, e flessibilità di consegna che è indispensabile per il tipo di produzione della nostra azienda*") ID2313.

²³³ Reply of KP Filmsto question 27 - Phase I Questionnaire to customers (S-PVC) ID5362.

²³⁴ Reply of Renolit to question 27 - Phase I Questionnaire to customers (S-PVC) ID5370.

²³⁵ Non-confidential version of the agreed minutes of a conference call with Renolit of 15 November 2013 ID5219.

"... other factors [beyond transport costs] are important for the EUPC members ... in favour of selecting local suppliers: better guarantee of just in time delivery; prompt delivery in urgent or unforeseen cases is sometimes essential and always important and cannot be achieved in case of large distance supplies; unexpected force majeure or other issues (back up volume) can hardly be dealt with in case of long distance suppliers; improved lead time compared to long distance suppliers which lifts uncertainty on future developments and so enhances vital predictability in price sensitive markets; the return of defective raw materials - and so warranty as such - becomes more tricky (and costly) at long distance suppliers; and prompt technical support."²³⁶

- (349) The Commission asked customers to identify the S-PVC suppliers' plants that would constitute suitable or unsuitable supply options, in the event of a 5-10% non-transitory price increase ("SSNIP"). The replies of NWE customers that clearly focus on logistics, transport costs, shipment times, security of supply and geography as whole, that is to say the "geographic (un)suitability" of a plant, were taken into account for this purpose. It appears that plants outside NWE (Anwil's Wloclawek and Neratovice, BorsodChem's Kazincbarcika, Fortischem's Novacke, Ercros' Vilaseca, Shin-Etsu's Estarreja and Solvay's Martorell) are unsuitable or much less suitable supply options compared to plants located at the heart of NWE such as Solvay's Jemeppe and Shin-Etsu's Pernis.²³⁷ All other plants located in Germany and France also received a more positive feedback compared to plants located in EE or Iberia.
- (350) The Notifying Parties contest this SSNIP test and argue that, contrary to the Commission's views, around 77% (24/31) of NWE customers would consider plants in EE and Iberia as suitable supply options.²³⁸ This proportion grows to 78% (25/32) later on in the same section of the Response to the SO.²³⁹ The Commission reviewed customers' replies to this SSNIP test and the results of that further exercise are summarized in **Table 6**.²⁴⁰

²³⁶ EUPC, Letter of 12 February 2014 ID5899.

²³⁷ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC). Customers also made reference to a wide array of other weaknesses, which are not directly related to geography (for example, reluctance to source from Kem One due to its financial situation). This could be defined as a sort of "overall (un)suitability" of a plant and will be taken into consideration in the context of the competitive assessment.

²³⁸ Response to the SO, Paragraph 5.5.

²³⁹ Response to the SO, Paragraph 5.5.5.22(i).

²⁴⁰ The table summarizes the non-confidential replies of 30 NWE customers, having 45 production facilities in NWE. The proportion uses - as numerator - customers' replies stating that a plant is suitable or that there is an existing relationship, which constitutes a conservative approach. The denominator of the proportion is the number of customers' production facilities in NWE. This is because the number of customers as such would not be meaningful, because customers may have several production facilities across the EEA or NWE and give several votes to S-PVC suppliers' plants per country.

Table 6: Suitability of non-NWE Plants for NWE Customers' Production Facilities

Supplier	Plants	Suitability
Anwil	Neratovice	29%
	Wloclawek	18%
BorsodChem	Kazincbarcika	16%
Ercros	Vilaseca	20%
Fortischem	Novaky	13%
Oltchim	Rimnicu	2%
Shin-Etsu	Estarreja	24%
Solvay	Martorell	27%

Source: Commission's market investigation

- (351) This type of exercise only yields general results. In other words, the question does not capture how much a customer would switch to a suitable supplier, nor how much the supplier could and would ship to a given customer. That said, Anwil's Neratovice appears to fare higher than other non-NWE plants, and yet does not even reach one third of positive replies.
- (352) This exercise shows that, even in the event of a SSNIP, NWE customers would still consider players located outside NWE as unsuitable sources of supply. This is because those plants present high barriers in terms of transport costs, shipment times and other logistical hurdles. The result would not change materially even if Austria, Finland, Italy and Switzerland were added, as the addition of the "plus four" countries does not alter the patterns referred to in Recital 328.²⁴¹

7.2.6. *Competitors' views confirm the regional dimension of the commodity S-PVC market*

- (353) In the context of the market investigation, the Commission also interviewed the Notifying Parties' competitors by means of RFIs and conference calls on numerous occasions. These players largely endorse the customers' views with regard to proximity, transport costs, logistics and shipment times, as well as the existence of a regional market broadly corresponding to NWE or, at most, NWE+.
- (354) With regard to transport costs, Anwil explains that "... logistics and transport costs are a very important factor in a market featuring low margins such as the S-PVC market."²⁴² Kem One reiterates that: "A first element to consider is transport costs. Obviously, this is firstly related to distance: for Kem One, given the location of its

²⁴¹ In particular, plants outside NWE+ are still unsuitable or much less suitable supply options compared to plants located at the heart of NWE such as Solvay's Jemeppe and Shin-Etsu's Pernis. All other plants located in Germany and France also received a more positive feedback compared to plants located in EE or Iberia, with a slightly better result for Anwil's Neratovice. Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

²⁴² Non-confidential version of the agreed minutes of a conference call with Anwil of 20 November 2013 ID5218.

plants and because of costs, it is more feasible to supply South of Germany than North of Germany."²⁴³

- (355) BorsodChem's experience is probably the most illustrative. BorsodChem explains that S-PVC suppliers face a natural geographic limit that lies in a delicate equilibrium among distance, transport costs, price margins and cost-base. In BorsodChem's own words, "*when BorsodChem offers a price to a French customer, BorsodChem would have to compete in the French market and in this commodity market it is impossible to charge the transport costs to the customer because they would not accept it.*"²⁴⁴ This explains why local sales are usually the most attractive in particular for less competitive players. As pointed out by Kem One points out that "*all suppliers prefer to serve customers as close as possible to their plants.*"²⁴⁵
- (356) According to Kem One, another important element that distinguishes between different geographic areas is the presence of local S-PVC suppliers in a given region. This is because "*Where there is no local production there is more competition because all players compete on equal footing, all having to bear transport costs. For example, Portugal for the presence of Shin-Etsu is not considered a target market by Kem One.*"²⁴⁶ Vestolit concurs with this view and explains that this applies to both (i) Iberia as a separate market, heavily impacted by the presence of Ercros and Shin-Etsu' Estarreja, and (ii) CE, where domestic producers "*set the playing field.*"²⁴⁷
- (357) It is telling that even Vestolit, which advocates a Pan-European market then qualifies its view by explaining: "*... the competitive conditions vary significantly. This is because normally price has to match not only production and transport costs and allow a reasonable level of margins, but also the price offered by local players. Therefore, not only prices, but also margins of S-PVC producers are different in different areas.*"²⁴⁸
- (358) Anwil seems to concur with this view and explains: "*the price of S-PVC in the European market depends on: production-consumption balance in local regions, logistics costs and seasonality.*"²⁴⁹ BorsodChem follows suit and states "*different geographic regions can be identified to determine pricing strategies. This is because market conditions across different regions are different and generate different margins.*"²⁵⁰

²⁴³ Non-confidential version of the agreed minutes of a conference call with Kem One of 23 November 2013 ID5216.

²⁴⁴ Non-confidential version of the agreed minutes of a conference call with BorsodChem of 20 November 2013 ID4746.

²⁴⁵ Non-confidential version of the agreed minutes of a conference call with Kem One of 23 November 2013 ID5216.

²⁴⁶ Non-confidential version of the agreed minutes of a conference call with Kem One of 23 November 2013 ID5216.

²⁴⁷ Non-confidential version of the agreed minutes of a conference call with Vestolit of 21 November 2013 ID5215.

²⁴⁸ Non-confidential version of the agreed minutes of a conference call with Vestolit of 21 November 2013 ID5215.

²⁴⁹ Non-confidential version of the agreed minutes of a conference call with Anwil of 20 November 2013 ID5218.

²⁵⁰ Non-confidential version of the agreed minutes of a conference call with BorsodChem of 20 November 2013 ID4746.

- (359) In the context of the market investigation, competitors were also asked a question that was similar to the SSNIP test in order to test supply-side substitutability. Only Fortischem, provides a clearly positive reply, while the other four out of five competitors explain that they could only switch a given percentage of their sales. They then qualify their reply by explaining the following:

*“It can not be done one month, but over a longer period, this is the strategy defined by the supplier company. On a monthly basis, volumes can be switched to another area when there are no contacts and especially for spot sales. 5-10% increase sometimes does not cover the additional logistic costs.”*²⁵¹

*“As we maintain long term customer relations only a small percentage of the business could be switched in a given year.”*²⁵²

“The answer is generic because it depends on a number of factors, such as logistics, that need to be collectively assessed. A partial change in the market can take several years, as before changing supplier customers in this market need to go through lengthy qualification processes and ensure that any new supplier can deliver product meeting the required technical standard timely and safely. If a large share of the market disappears then there is no choice.”
(our translation)²⁵³

- (360) This feedback calls into question a hypothetical supply-side substitution between different geographic areas, given that it appears that such a switch - if possible at all - would not be immediate and at no or little costs. This is consistent with the competitors' view that NWE constitutes a self-standing homogenous market.

- (361) Moreover, in the context of a conference call BorsodChem explains that *“even if the local suppliers [in NWE] would considerably raise their prices, BorsodChem doubts it could become a major supplier for customers in these markets. This is because supply flexibility and lead times are very important to customers.”*²⁵⁴ This is consistent with Shin-Etsu's views according to which *“Very strict just in time deliveries are more often encountered in NW Europe.”*²⁵⁵ Shin-Etsu further elaborates on this element of differentiation by explaining:

*“In Western Europe, customers require 3 days of lead time. Customers farther away (e.g. in Eastern Europe) may be relatively more flexible and require 5 days. Such short lead times are essentially due to security of supply, which is very important in the industry. Customers have limited storage capacity, usually less than a week, and building silos is very expensive.”*²⁵⁶

- (362) As regards Southern Europe, Shin-Etsu once again points out that payment terms and payment behaviour constitute another important element and lead to a difference in credit risks. In particular, it explains that *“Especially in Iberia long payment terms*

²⁵¹ Reply of Kem One to question 34 - Phase I Questionnaire to competitors (S-PVC) ID2653.

²⁵² Reply of Shin-Etsu to question 34 - Phase I Questionnaire to competitors (S-PVC) ID4717.

²⁵³ Reply of Ercros to question 34 - Phase I Questionnaire to competitors (S-PVC) ID2562.

²⁵⁴ Non-confidential version of the agreed minutes of a conference call with BorsodChem of 20 November 2013 ID4746.

²⁵⁵ Non-confidential version of Shin-Etsu's reply to the Commission's RFI of 4 December 2013 ID5342

²⁵⁶ Non-confidential version of the agreed minutes of a conference call with Shin-Etsu of 17 May 2013 ID5213.

are being encountered as opposed to shorter payment terms in Germany, where very short payment terms have always been present."²⁵⁷ Anwil also adds that "Markets in Southern Europe is characterized by unstable demand and a smaller share of purchases on an annual contract basis as against to NWE."²⁵⁸

(363) The Notifying Parties reply that the Commission undertook a partial reading of competitor's replies and quote a number of replies of Vestolit, Kem One, Vinnolit, Ercros and Shin-Etsu to prove the existence of a market that is wider than NWE, and potentially EEA-wide.²⁵⁹ However, a more careful review of the evidence in the Commission's file would have shown that the Notifying Parties' competitors have much stricter views in this regard:

- Vestolit, while initially supporting the existence of a pan-European market, then qualifies its statements and explains that such a broad market would "*presents specificities in different regions ... in Western Europe the price level is defined by demand-supply balance, costs of production and transport costs. Overall, [Vestolit] would consider WE as a homogeneous market.*" Therefore, even Vestolit agrees that the market for commodity S-PVC is smaller than the EEA.²⁶⁰
- Kem One explains that "*... different geographic areas can be identified in Europe which present specific market features ... Within this framework, Kem One considers that the NWE market is composed by Scandinavian countries, UK, Ireland, Benelux, Germany; the South European market is composed by Spain, Greece, Portugal, Malta, Italy; while the East European market is composed by Poland, Czech Republic, Slovakia and the other Eastern countries belonging to the EEA where prices are quoted in EUR.*"²⁶¹
- Vinnolit explains that "*... North-Western Europe is considered as a homogeneous area in terms of competition conditions and prices and it includes the following countries: France, Belgium, Netherlands, Luxembourg, Germany, UK, Ireland, Norway, Austria, Switzerland and Finland ... Vinnolit also perceives Eastern Europe as a homogeneous market, covering Romania, Bulgaria, Ukraine, Belarus and Russia, where prices tend to be lower.*"²⁶²
- Ercros explains that "*North Western Europe is a homogenous area which is characterised by the presence of big customers that have higher needs of S-PVC... Another homogenous area is the Mediterranean area, including South of Italy, Greece, Turkey, North Africa and the Black Sea*

²⁵⁷ Non-confidential version of Shin-Etsu's reply to the Commission's RFI of 4 December 2013 ID5342.

²⁵⁸ Non-confidential version of the reply to the Commission's RFI of 4 December 2013 ID4545.

²⁵⁹ Response to the SO, Paragraph 5.6 *et seq.*

²⁶⁰ Non-confidential version of the agreed minutes of a conference call with Vestolit of 21 November 2013 ID5215.

²⁶¹ Non-confidential version of the agreed minutes of a conference call with Kem One of 23 November 2013 ID5216.

²⁶² Non-confidential version of the agreed minutes of a conference call with Vinnolit of 19 November 2013 ID4859.

... *The Iberian Peninsula constitutes another homogenous area, which is Ercros' domestic market.*"²⁶³

- Shin-Etsu explains that "*Of course there are differences between areas. Recently and for obvious reasons the main difference is between the Mediterranean and Northern Europe ... Very strict just in time deliveries are more often encountered in NW Europe.*"²⁶⁴

(364) In conclusion, competitors' views largely support the existence of a self-standing cluster in NWE, where competitive conditions are different from EE and Iberia. Some competitors suggest that Austria, Finland, Italy and Switzerland belong to the NWE cluster. In line with the quantitative and qualitative analysis in Section 7.2., the Commission has therefore considered a possible alternative NWE+ dimension.

7.2.7. *Notifying Parties' internal documents and independent market reports distinguish a regional market within EEA*

(365) The Notifying Parties' internal documents indicate that the competitive dynamics of the market for commodity S-PVC is often analysed on a regional level - a level that is smaller than EEA - and reflects the geographic differentiation described in Section 7.2.1..

(366) First, in a 2012 analysis of the competitive landscape INEOS identifies its competitors' core markets as set out in **Table 7**.²⁶⁵

Table 7: INEOS' Internal Analysis of Other PVC Suppliers' Core S-PVC Markets

[...]*

Source: INEOS

(367) **Table 7** mainly shows that (i) besides INEOS, only Solvay and Shin-Etsu can be regarded as S-PVC suppliers with a fully-fledged multi-country presence; (ii) Ercros is only marginally active in NWE, in France, and this is due to its closeness to the French border; (iii) Anwil is only marginally active in NWE, in Germany, and, this is due to its closeness to the German border; (iv) for BorsodChem, Oltchim and Fortischem NWE is not a core market. This is consistent with the geographic focus of the Notifying Parties' competitors as per Section 7.2.1..

(368) The Notifying Parties reply that, in this internal document, INEOS merely looks at national landscapes for convenience and that the document itself only lists "core markets", not all the markets where their competitors are active.²⁶⁶ It is unclear how this explanation would contradict the Commission's findings. Analysing competition at national level is indeed an informative way to gauge the reach and magnitude of S-PVC suppliers. Additionally, the fact that this internal document focuses on the core

²⁶³ Non-confidential version of the agreed minutes of a conference call with Ercros of 20 November 2013 ID5220.

²⁶⁴ Non-confidential version of Shin-Etsu's reply to the Commission's RFI of 4 December 2013 ID5342.

²⁶⁵ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Pages 19 *et seq.*

²⁶⁶ Response to the SO, Paragraph 5.27(i) and Footnote 276.

market is not at all incompatible with the Commission's attempt to identify the geographic focus of the Notifying Parties' competitors.

- (369) Second, INEOS itself often refers to NWE or WE as opposed to EE.²⁶⁷ In a document predating the INEOS/Tessenderlo merger, INEOS studies the PVC market and states under the heading "Basic Strategy": "[...]*" and carries out an analysis of its logistics costs per plant across a number of destinations. Finally, the document constitutently refers to WE as opposed to EE (**Figure 10**).²⁶⁸
- (370) Moreover, in one of its internal documents INEOS even refers to Poland - the largest market in EE - as "[...]*".²⁶⁹ This appears to be incompatible with the existence of an overall EEA market encompassing EE in general and Poland in particular.²⁷⁰

Figure 10: 2007-2010 Market Developments in WE, EE and RoW

[...]*

Source: INEOS

- (371) INEOS also referred to the NWE region in its internal considerations regarding the INEOS/Tessenderlo merger. In INEOS investor presentation, it is noted that this acquisition "[...]*".²⁷¹ Given the market share level, the "North European market" is likely to be largely identical to what is defined in this Decision as NWE. Similarly, INEOS Board of Directors' minutes of that time note: "[...]*".²⁷²
- (372) The Notifying Parties disagree with the Commission's reading of those documents.²⁷³ They explain that INEOS' focuses on a particular group of countries such as NWE as part of its commercial strategy and the existence of different transport costs across countries are not necessarily suggestive of distinct geographic markets. However, while commercial strategies and transport costs may not be sufficient to establish distinct geographic markets, they are very relevant factors that cannot be disregarded in this type of analysis. This is even more significant when are in line with the overall body of qualitative and quantitative evidence in a given case.
- (373) **Figure 11** and **Figure 12** are taken from further internal documents which show that (i) when analysing volume changes over time, INEOS finds it useful and reflective of the market reality to distinguish between WE and EE; and (ii) Austria, Italy and Switzerland are regarded as being within the "DACH" cluster, that is to say

²⁶⁷ With regard to Solvay, suffice it to say that it also consistently refers to a region narrower than the EEA. [...]*, SOLVAY_14_11_RFI_00002021; and Solvay's internal document, "Vinyls: Regional Market Landscape" of 28 February 2012, Slides 1-14, SOLVAY_14_11_RFI_00005504.

²⁶⁸ INEOS' internal document, "PVC Marketing" of 12 October 2011, Page 8 INEOS_14_11_RFI_00000069.

²⁶⁹ INEOS' internal document, "S-PVC Sales Meeting Dusseldorf (Poland)" of 23 May 2012, Slides 3 and 8, INEOS_SET4_14_11_RFI_00000891.

²⁷⁰ The Notifying Parties stress that this internal document does not express INEOS' view, but reports on other competitors' views. They also emphasise that these competitors would have stated, in the context of the market investigation, that the market for Commodity S-PVC is EEA-wide. This reading of the Commission's market investigation is partial and will be addressed in Section 7.2.6..

²⁷¹ INEOS' internal document, "Kerling Investor Presentation" of June 2011, Page 1.

²⁷² INEOS' internal document, "BoD Minutes" of 28 June 2011, Pages 3-4.

²⁷³ Response to the SO, Paragraph 5.27(iii).

Deutschland, Austria and Switzerland. This confirms the Commission's preliminary conclusions that, in terms of homogeneity of competitive conditions, those countries could be combined with the NWE cluster.²⁷⁴

Figure 11: Split of the European Market according to INEOS

[...]*

Source: INEOS

Figure 12: Market Shares in Different Regions of Europe

[...]*

Source: INEOS

- (374) The distinction between WE and EE referred to in Recital 365 is also reflected in INEOS' recent pricing notes. For instance, in a July 2013 S-PVC pricing note,²⁷⁵ INEOS states:

"[...]*."

- (375) In a June 2013 S-PVC pricing note,²⁷⁶ INEOS takes a similar approach:

"[...]*."

- (376) In a May 2013 S-PVC pricing note,²⁷⁷ INEOS acknowledges that "[...]*." [...]*.²⁷⁸

- (377) Similarly, logistics transport costs and, lead times already appear in a 2011 presentation, where INEOS discusses a business case regarding Italy following the disappearance of Vinyls Italia.²⁷⁹ This shows that, even from its Schkopau plant, which is located 600-700 km from the North of Italy, INEOS suffers in terms of transport costs and lead times and may not be competitive.

- (378) INEOS itself very well summarizes the situation of the WE area in a 2010 investor presentation (**Figure 13** below), where it states "[...]*."²⁸⁰

²⁷⁴ INEOS' internal document, "VINYLs Sales & Marketing update" of 21 January 2013, Slide 6, INEOS_SET4_14_11_RFI_0000191; and INEOS' internal document, "S-PVC KPI Performance" of March 2013, Slide 6, INEOS_SET4_14_11_RFI_00001185. In the Response to the LoF, the Notifying Parties essentially reiterate that the documents also contain references to a European-wide market and that INEOS focus on single countries or group of countries is not informative for market definition purposes.

²⁷⁵ INEOS' internal document, "SPVC Pricing Note Europe July 2013", INEOS_SET4_14_11_RFI_00001269, Page 2.

²⁷⁶ INEOS' internal document "S-PVC Pricing Note for Europe June 2013", INEOS_SET4_14_11_RFI_00001218, Page 3.

²⁷⁷ INEOS' internal document, "S- PVC Pricing Note Europe May 2013", INEOS_SET4_14_11_RFI_00001198.

²⁷⁸ INEOS' internal documents, respectively INEOS_SET4_14_11_RFI_00001216, INEOS_SET4_14_11_RFI_00001336 and INEOS_SET4_14_11_RFI_00001351.

²⁷⁹ INEOS' internal document, "Italy Sales Strategy 2011", Page 9. INEOS_SET5_14_11_RFI_00000052.

²⁸⁰ INEOS' internal document, "Kerling PLC Background Information Q1 2010" of 2010, Slide 15, INEOS_SET2_14_11_RFI_00000126.

Figure 13: Barriers to Entry into WE according to INEOS

[...]*

Source: INEOS

- (379) The Notifying Parties again reply that this internal document is not informative about INEOS' views of the market for commodity S-PVC.²⁸¹ According to the Notifying Parties, first, the document contains data that complies with the traditional nomenclature of CMAI (now, IHS), which cannot be ascribed to INEOS. Second, the document also assesses INEOS' position in the European market as a whole, and not only in a sub-segment of it. In that regard, while it is not surprising that INEOS is interested in and analyses European-wide dynamics, given that it is truly European player, the Notifying Parties fail to address the main point at hand: why INEOS describes the Western European PVC market as "[...]*".
- (380) Finally, when referring to "WE", Solvay appears to emphasise the differences between Iberia and the rest of WE. In an email commenting on prices published by Platts, for instance, the following is stated: "[...]*".²⁸²
- (381) The Notifying Parties argue that these statements cannot lead to a conclusion that Iberia is not part of the WE market. They point out that it is natural for business people to consider the "*slight differentiation*" caused by the dire market conditions in this area.²⁸³ However, this slight differentiation is arguably a relevant factor for this assessment. This is particularly true in this case, where the dire market conditions affecting Iberia have already lasted for a number of years. Based on the Notifying Parties' own estimates, the Spanish market fell from 345 kt in 2008 to around 200 kt in the 2010-2012 time period.
- (382) Several independent market reports consistently draw a distinction between WE - and regions within WE - and EE.
- (383) First, ICIS' price assessments in essence single out a NWE region (including North France, North Germany and the Benelux) and a Mediterranean region (comprising South France, Spain and Italy). This distinction reflects the existence of a major cluster at the heart of Europe and also acknowledges an interaction between the South of France and Spain. According to ICIS, the focus on NWE is warranted by the following factors:

"Chemical commodity prices are defined according to place and time, and so vary greatly across the whole of Europe. The most useful prices for our readers to see are those where there is the most trade. This will generally be in the chemical heartland of Europe, ie Benelux, north Germany and north France. ... For most other parts of Europe, the price will be determined by the NWE price plus freight ... It depends on where there is a concentration of trade. It is important to narrowly define a geographic region for the purposes of

²⁸¹ Response to the SO, Paragraph 5.27(ii).

²⁸² Solvay's internal document, email exchange of 10 July 2013, Pages 2-3, SOLVAY_14_11_RFI_00008371. See also and Solvay's internal document, email exchange of 2 July 2013, Page 1, SOLVAY_14_11_RFI_00008319 [...]*.)"

²⁸³ Response to the LoF, Paragraph 2.3(ii).

determining the price, which can also vary according to the size of the consumer, the size of the deliveries, the relationship between the counterparties."²⁸⁴

- (384) ICIS also points out that prices in the Nordic countries are usually at NWE level or higher, while the same does not apply to Eastern Europe, where prices are generally lower than the NWE level.²⁸⁵
- (385) Second, the 2014 and 2013 IHS World Analysis - Vinyls both distinguish between a WE and a Central European region.²⁸⁶ These market reports refer to several differentiating factors between the two regions including - but not limited to - (i) active players and respective capacities; (ii) quality of assets and costs; and (iii) demand, economic situation and growth perspectives. Moreover, IHS market reports display NWE price developments and also draw a distinction between market segments such as Northwest Europe, Southern Europe and Central Europe.²⁸⁷ IHS market statistics focus on WE and even assess PVC plants' operating schedules of WE players as opposed to EE players.²⁸⁸
- (386) Third, the Commission notes that also Tecnon OrbiChem, an independent industry expert,²⁸⁹ reports separate price ranges for NWE, the United Kingdom and the Mediterranean region. In particular, according to Tecnon OrbiChem
- "[t]here has been a general agreement that individual country pricing is no longer referenced but a more general Northwest European price is now the norm and pricing in the UK and in the Mediterranean should be distinct. We have therefore established three individual price ranges for pipe grade."*²⁹⁰
- (387) This evidence clearly indicates that neither the Notifying Parties nor the independent market reports look at the EEA as such. They firstly draw a firm distinction between WE and EE (also referred to as CE in the market reports referred to in Recital 381) and then single out sub-regions within WE to assess pricing and S-PVC customers' and suppliers' behaviour.
- (388) The Notifying Parties acknowledge that market reporters consider regional developments, but argue that this practice follows historical and commercial reasons and is not suggestive of distinct geographic markets.²⁹¹ They, however, confine themselves to noting that (i) ICIS' focus on Benelux, France and Germany stems from the need to isolate the smallest feasible area for extracting pricing assessments; (ii) IHS' focus on Western Europe is a matter of convenience, because data reporting systems focus on this area; and (iii) the Tecnon OrbiChem's document is merely a draft proposal, which reflects the views of "some players."

²⁸⁴ Email exchange between the Commission's Services and ICIS of 18 December 2013 ID5346.

²⁸⁵ Email exchange between the Commission's Services and ICIS of 18 December 2013. ID5346.

²⁸⁶ See Footnote 205.

²⁸⁷ *Ex multis*, IHS Market Report of 31 July and of 30 August 2013.

²⁸⁸ *Ex multis*, IHS Market Statistics of 16 August and of 18 September 2013.

²⁸⁹ <http://www.orbichem.com/>.

²⁹⁰ INEOS' internal document, "Tecnon OrbiChem Price Monitor" of 26 October 2012, INEOS_SET4_14_11_RFI_00001026.

²⁹¹ Response to the SO, Paragraph 5.26 and footnote 273; and Response to the LoF, Paragraph 2.3(v)..

- (389) Nevertheless, the Commission sees no reason to discard the historical and commercial conditions that characterise a specific area or region. First, ICIS' focus fully matches the area where most S-PVC plants and demand are located. Second, the Notifying Parties fail to mention that IHS routinely analyses the market segment for Northwest Europe, alongside Southern and Central Europe, as well as other wider European statistics. Third, among the "some players" involved in Tecnon OrbiChem's draft proposal, there is the Head of Solvay's PVC Business.²⁹² This individual seems to actively participate in shaping the new index and states that it is "A step in the good direction."²⁹³
- (390) In this light, the main question appears to be not whether the market is EEA-wide, as advocated by the Notifying Parties, but rather what regional grouping best identifies a homogenous area in terms of competitive conditions. Section 7.2.2. presents the Commission's quantitative analysis, which was carried out for this purpose.

7.2.8. Other arguments raised by the Notifying Parties in response to the SO

- (391) In their Response to the SO, the Notifying Parties argue that EE S-PVC suppliers constitute a "demonstrably strong constraint" on NWE S-PVC suppliers and that S-PVC suppliers located in Iberia are "also active" in NWE. To support this line of arguments, they make reference to the Commission's market investigation, the results of the GfK Survey, the disappearance of past weaknesses that prevented those players from expanding to NWE and recent instances in which they had to lower prices due to the competition of these S-PVC suppliers.
- (392) First, the Notifying Parties propose a collection of replies that would show that Anwil and BorsodChem can compete in NWE. However, they subsequently downplay their own argument by noting that "not all of these customers are based in NWE."²⁹⁴ The Commission has already shown, in Sections 7.2.1., 7.2.2. and 7.2.5. that the past behaviour of those two players, their current focus, as well as customers' reaction to a SSNIP, all point to the weakness of the competitive constraint exerted by Anwil and BorsodChem on NWE S-PVC suppliers.
- (393) Second, the GfK Survey is inconclusive - at best - on this point. The results of this survey state that "Anwil and BorsodChem are somewhat less important than Vinnolit but more important than Vestolit."²⁹⁵ This is largely uncontroversial and, if anything, is consistent with the Commission's finding that Vestolit's HIS-PVC could be substitutable for only a limited share of customers, that is to say window profilers.
- (394) Next, the GfK Survey asked at question 9 "How likely are you in the next two years to start to purchase, or purchase greater quantities, from Eastern European producers such as Anwil and BorsodChem?"²⁹⁶ The results show that 22 customers are "quite likely or very likely." The probative value of this question however is unclear: (i) it is not a SSNIP question; (ii) it is framed in terms of likelihood, not substitutability or suitability; (iii) the positive answers are very vague (quite or very

²⁹² Solvay's internal document, email exchange of 26 October 2012, SOLVAY_14_11_RFI_00006566.

²⁹³ Solvay's internal document, email exchange of 26 October 2012, Page 1, SOLVAY_14_11_RFI_00006566.

²⁹⁴ Response to the So, Paragraph 5.22(iv)(b).

²⁹⁵ Results of the GfK Survey, Page 10.

²⁹⁶ Results of the GfK Survey, Page 14.

likely); and (iv) its results are not entirely relevant for NWE, given that customers in the sample are also located in Poland (8 customers), Italy (6 customers), Spain (6 customers) and Hungary (3 customers). Finally, even if this methodology were to be accepted, 32 customers replied that they are "*unlikely or very unlikely*" to start or increase purchasing from Anwil and BorsodChem.

- (395) Third, the Notifying Parties stress that (i) a transformer fire forced Anwil to shut down its cellroom at Wloclawek in 2010 for over one year and (ii) BorsodChem has been on sale from 2011 to 2012.
- (396) As regards Anwil, outages are part of the Commodity S-PVC industry and, if anything, this shows that, despite the alleged overcapacity, competitive pressure can suffer from these events.
- (397) As regards BorsodChem, Wanhua's intention to sell the business for two years is certainly sign of lack of commitment to the commodity S-PVC industry. However, it does not necessarily follow from the fact that BorsodChem is no longer on sale that it will now be a more aggressive competitor, particularly toward NWE. It may simply mean, among other things, that no acceptable offers were received.
- (398) In any event, the Commission's analysis in Sections 7.2.2. and 9.1. shows that Anwil and BorsodChem have decreased their NWE sales, despite growing spare capacity, over a relatively long time span from 2008 to 2012.
- (399) Fourth, as regards the instances in which the Notifying Parties allegedly had to lower prices - and assuming this was genuine evidence of an EEA market - the Commission notes that it is not uncommon for customers to try to drive competitors against each other by requesting multiple quotations or claiming that a deal is being struck at a lower price with another competitor. Moreover, the four examples provided occurred in 2013 and 2014, while INEOS and Solvay were arguably still competing against each other. Absent any concrete evidence, there is no reason to believe that the alleged competitive pressure was exerted by Anwil or BorsodChem instead of INEOS or Solvay or without any involvement of INEOS and Solvay in an attempt to procure those customers. Finally, even if this competitive pressure were to be real, three of the four customers in question are located in Germany and Poland and the Commission has not denied these players can reach the fringes of NWE, in this case the German/Polish border.
- (400) Fifth, as regards Iberia the Notifying Parties' arguments essentially focus on the importance of Ercros. As noted in Section 7.2.1., there is an interaction between the South of France and Iberia, in particular Spain. The trade between these two countries was certainly also impacted upon by the economic situation in Iberia. Iberia was heavily hit by the economic crisis in recent years and its construction market declined dramatically. In spite of this, the Commission has not observed significant flows from Spain to NWE so as to justify its inclusion in the NWE cluster.
- (401) Moreover, the Notifying Parties' arguments regarding "*Ercros implied exports to NWE*" are very unclear. In short, they propose a computation based on the combination of Eurostat PVC data, Solvay's actual S-PVC sales and the Notifying Parties' estimates for Kem One's E-PVC sales. They then obtain a result according to which Ercros' NWE sales have doubled in the 2008-2013 period. Assuming this methodology is robust, the Notifying Parties do not explain why their own best estimates - showing only an increase of [...] kt/y in the 2008-2012 period, despite

growing spare capacity - would no longer be valid. Moreover, 2013 Eurostat data show that 73 kt of PVC moved from Spain to NWE, instead of the [...] kt suggested by the Notifying Parties. If this figure (73 kt) is used in the Notifying Parties' computation of the so-called "implied exports to NWE" (instead of [...] kt), the following result is obtained: there is indeed an increase of PVC exports from Spain to NWE in 2013, but this remains very limited, only of [...] kt relative to Ercros' 2012 sales based on the Notifying Parties' best estimates. This result is also more in line with the 2011-2012 best estimates originally submitted by the Notifying Parties.

- (402) The Commission therefore concludes that the Notifying Parties' additional arguments as regards EE and Iberian S-PVC suppliers do not call into question the Commission's findings.

7.2.9. *Conclusion on geographic market definition*

- (403) The analysis in this Section 7.2 shows that the geographic location of plants matters significantly in the market for commodity S-PVC. Proximity to customers is a key driver for both customers and competitors. On one hand, customers endeavour to obtain the lowest purchase price possible, but also strike a balance between productions costs and security and flexibility of supply. On the other hand, competitors try to avoid long distances, high transport costs, complex logistics and, consequently, margin erosion. That is why S-PVC suppliers, particularly, the smaller ones, generally focus on local markets, which constitute the most attractive sales. In that regard, the analysis of the price evolution across regions also indicates that S-PVC suppliers located outside NWE have a limited ability to influence prices in NWE.

- (404) Those findings imply that the market for commodity S-PVC is characterised by a high degree of geographic differentiation. For this reason, S-PVC suppliers located in the proximity of customers' plants generally represent the most suitable supply options for customers. This interaction points to a NWE region as a stand-alone cluster, where competitive conditions are homogeneous. However, the Commission's substantive analysis would not be different, even if it was ultimately considered that the market extended to the NWE+ cluster.

- (405) The Commission therefore concludes that the geographic scope of the market for Commodity S-PVC is smaller than the whole EEA and as wide as NWE or at best NWE+. For the purpose of this Decision, it is not necessary to reach a definitive view as to whether this regional market encompasses only NWE or extends to NWE+, because the Transaction results in a significant impediment to effective competition under both market delineations.

7.3. **Sodium hypochlorite - Relevant Product Market**

- (406) In line with two previous cases,²⁹⁷ the Notifying Parties submit that the product market should not be narrower than sodium hypochlorite. This is because formulation, prices and delivery conditions of sodium hypochlorite do not materially differ across its industrial and household applications.

²⁹⁷ Commission's Decision of 9 April 2002 in Case No. M.2690, *Solvay/Montedison-Ausimont* (2002), Paragraphs 116-118; and Commission's Decision of 26 July 2011 in Case No. M.6218, *INEOS/Tessenderlo Group S-PVC Assets* (2011), Paragraphs 52-53.

- (407) The Notifying Parties nevertheless noted that there are some alternative cleaners such as peracetic acid and hydrogen peroxide, which could eventually replace sodium hypochlorite, both for industrial and household applications.²⁹⁸ Therefore, they argue that the product market could even be wider than sodium hypochlorite.
- (408) The market investigation, however, clearly rejected this potential substitutability.²⁹⁹ The market investigation indicated the lack of any alternative products capable of fully replacing sodium hypochlorite across its industrial and household applications.
- (409) The Commission therefore considers that the relevant product market for the assessment of the effects of the Transaction is the market for sodium hypochlorite.

7.4. Sodium hypochlorite - Relevant Geographic Market

- (410) In two previous decisions,³⁰⁰ the Commission left the geographic market definition for sodium hypochlorite open, but it noted that sodium hypochlorite is typically transported over and sold within, a geographic area of around 300 km from manufacturing plants. This is due to its limited stability, high water content and corrosiveness.
- (411) In the Form CO, the Notifying Parties submit that a radius of 300 km from their plants in Belgium (Lilo and Jemeppe for Solvay and Tessenderlo for INEOS) encompasses an area extending beyond the Belgian borders, which would include all of the Netherlands and Luxembourg, as well as a large proportion of North-West France and Western Germany. They also provide examples of transportation over distances larger than 300 km from manufacturing plants.³⁰¹
- (412) The Notifying Parties also argue that a 300 km supply radius would give rise to significant overlaps with sodium hypochlorite plants throughout the EEA. This particular distribution of plants would, according to them, indicate a wider geographic market, despite the role played by transport costs. Moreover, the Notifying Parties submit that there are no regulatory barriers to cross-border trade and that trade patterns show that suppliers as well as their distributors sell sodium hypochlorite throughout the Benelux and irrespective of national borders.
- (413) The Notifying Parties also contest the results of the market investigation and argue that four out of seven "Benelux customers" consider that there would be suppliers of sodium hypochlorite with sufficient spare capacity and resources to satisfy the requirements of INEOS' and Solvay's customers in the Benelux."³⁰² Moreover, two other customers in Belgium, Atelier Jean Reigniers, and CID Lines NV ("CID

²⁹⁸ Commission's Decision of 9 April 2002 in Case No. M.2690, *Solvay/Montedison-Ausimont* (2002), Paragraph 117.

²⁹⁹ Replies to question 10 - Phase I Questionnaire to customers (Sodium hypochlorite).

³⁰⁰ Commission's Decision of 9 April 2002 in Case No. M.2690, *Solvay/Montedison-Ausimont* (2002), Paragraphs 119-121; and Commission's Decision of 26 July 2011 in Case No. M.6218, *INEOS/Tessenderlo Group S-PVC Assets* (2011), Paragraphs 52-53.

³⁰¹ For example, in an e-mail of 10 October 2013, the Notifying Parties submitted that "*another major Benelux customer, [...]*, has been sourcing sodium hypochlorite from Societe des Produits Chimiques d'Harbonnieres (SPCH) in Harbonnieres, France and BASF in Ludwigshafen, Germany in 2012 and 2013*", as proof of this wider shipping radius.

³⁰² Notifying Parties Response to the SO, Paragraph 9.5.

Lines", Belgium), confirmed during conference calls they were already in contact with French suppliers.

- (414) In their Response to the SO, they add that, since the Commission investigated the potential competitive pressure exerted by suppliers located in Northern France and Western Germany over the Benelux region, then these areas should also be included in the geographic market definition.³⁰³
- (415) For the reasons referred to in Recital 408, the Notifying Parties submit that the sodium hypochlorite market should not be delineated along national boundaries. They submit that the Benelux region would constitute a narrower geographic dimension for sodium hypochlorite and that a Benelux region also encompassing neighbouring areas in France and Germany would be more appropriate.³⁰⁴
- (416) The market investigation, however, did not support the Notifying Parties' arguments. More precisely eight out of nine customers having given a figure indicated that the optimal supply radius is around 300 km.³⁰⁵ Regarding competitors five out of six say that their customers are located within a certain radius of their manufacturing plants.³⁰⁶ In the conference calls held with suppliers of sodium hypochlorite also located in the Northern France³⁰⁷ it was indicated that this shipping radius is not above 300 km. While there are examples of shipments above 300 km, these are due to the lack of suitable supply options nearby. Moreover, transport costs can exceptionally be lower than expected for particular reasons which are specific to a single customer and, therefore, do not apply to customers in general.³⁰⁸
- (417) The Commission complemented the results of the market investigation with a number of conference calls to further analyse this issue. For instance, Belgian and Dutch customers explain that, among others, barriers such as transport costs, complex logistics and product degradation exponentially increase when sodium hypochlorite is shipped above 300 km.³⁰⁹
- (418) Therefore, the Commission considers that a supply radius of 300 km is an appropriate dimension to assess the market for sodium hypochlorite. This distance therefore covers a Benelux region which includes Belgium, the Netherlands and Luxembourg. Focusing on the Benelux region, the Commission further investigated whether from both demand- and supply-side perspective suppliers located outside the Benelux could be suitable supply options for customers in the Benelux.

³⁰³ Notifying Parties Response to the SO, Paragraph 9.7.

³⁰⁴ Response to the Decision opening the proceedings of 5 November 2013, Paragraph 8.6.

³⁰⁵ Replies to question 12 - Phase I Questionnaire to customers (Sodium hypochlorite).

³⁰⁶ Replies to question 9 - Phase I Questionnaire to competitors (Sodium hypochlorite).

³⁰⁷ Non-confidential version of agreed minutes of conference calls with SPCH, of 7 October 2013, ID4195 and Kem One of 2 October 2013 ID4194.

³⁰⁸ For example, sodium hypochlorite could be transported on a freight train or road truck together with other chemical products, which have to travel over long distances anyway. This lowers transport cost for sodium hypochlorite considerably.

³⁰⁹ Replies to questions 8 and 9 - Phase I Questionnaire to competitors (Sodium hypochlorite) and questions 5, 12 and 13 - Phase I Questionnaire to customers (Sodium hypochlorite). See also agreed non-confidential minutes of the conference calls with Atelier Jean Regniers ID4170, Brentag ID4174, CID LINES ID4175, Kem One ID4194 and SPCH.ID4195.

(419) With regard to the results of the market investigation, the replies referred to by the Notifying Parties should be read in context. Those four customers are Avebe U.A. ("Avebe", the Netherlands), Brenntag Holding GmbH ("Brenntag", Germany), Diversey Europe Operations BV ("Diversey", the Netherlands) and Lanxess Deutschland GmbH ("Lanxess", Germany). Of those four customers, two (Diversey and Brenntag) have sites in EEA countries other than the Benelux. Moreover, the following should be noted:

- As regards Diversey, in its reply to the same question it also stated that *"capacity is not really the issue due to total volume purchased, but the right grade and at the same cost will be difficult."*³¹⁰
- In its replies, Brenntag does identify PC Loos and Société des Produits Chimiques d'Harbonnières ("SPCH", France) as being among the major five suppliers of sodium hypochlorite. However, despite these two players being very small in Belgium compared to the Notifying Parties and Akzo, Brenntag also explained in a conference call that *"it would have difficulties to easily and cheaply replace the volumes it jointly procures from the Parties in case of a post-merger price increase of more than 10%".*³¹¹
- Lanxess purchases around [...] of Solvay's output and exercises, therefore, a strong buyer power. It stated, however, that *"smaller customers might have more problems to find alternative sources of supply (other than the Parties), although Lanxess itself would not even have this problem, because Solvay is also dependent on Lanxess"*.³¹²
- Avebe indicated in its replies that it could source volumes from BASF and Bayer AG ("Bayer") in Germany. Based on this, the Commission investigated whether BASF and Bayer would actually supply Avebe, as well as other customers in the region. Bayer clearly stated that it is not active in sodium hypochlorite and does not intend to enter this market.³¹³ BASF indicated that it would only consider coming in the Benelux market if the price increase was above 20%.³¹⁴

(420) As regards Atelier Jean Reigniers and CID Lines, the Notifying Parties cite only parts of the minutes, as both companies essentially reach the same conclusion that *"...French producers do not seem have the ability to cover for a large part"* of their

³¹⁰ Reply of Diversey to Phase I Questionnaire to competitors (Sodium hypochlorite) ID5443.

³¹¹ Non-confidential version of the agreed minutes of conference call of 3 October 2013 with Brenntag ID4174.

³¹² Non-confidential version of the agreed minutes of conference call of 7 October 2013 with Lanxess ID4332.

³¹³ Non-confidential version of the agreed minutes of conference call of 9 October 2013 with Bayer ID4173.

³¹⁴ Non-confidential version of the agreed minutes of conference call of 2 October 2013 with BASF ID4812.

respective needs.³¹⁵ This is also in line with the replies of these companies to the market investigation.³¹⁶

- (421) The Commission therefore concludes that the geographic scope of the market for sodium hypochlorite encompasses the whole of the Benelux, that is to say Belgium, the Netherlands and Luxembourg.

8. OTHER RELEVANT MARKETS WHERE THE COMMISSION DID NOT FIND COMPETITION CONCERNS

8.1. Ethylene

- (422) Ethylene is produced by steam-cracking feedstock such as naphtha, ethane or other natural gas liquids ("NGLs") in ethylene crackers. Ethylene is used as a raw material for ethylene derivatives such as polyethylene, EDC, ethylene oxide and ethylbenzene. The majority of the ethylene produced in the EEA is used for polyethylene production, with a relatively small proportion, around 14%, being used for the production of EDC and hence, ultimately, PVC.

8.1.1. Relevant Product Market

- (423) In previous cases,³¹⁷ the Commission has found that ethylene constitutes a distinct product market because there is no change of product specification between different derivatives used and ethylene cannot be replaced by another product in these applications. The Notifying Parties agreed with that view, which has been confirmed by the market investigation in this case.

- (424) The Commission therefore concludes that, for the assessment of this case, ethylene can be considered as a single product market.

8.1.2. Relevant Geographic Market

- (425) As regards the relevant geographic market, in previous decisions³¹⁸ the Commission has considered that ethylene is a hazardous gas which is highly flammable and is distributed either in a compressed form by pipeline or in liquid form via refrigerated ships to an import terminal. It has never, however, concluded on geographic market definition.

- (426) The Notifying Parties consider the ethylene market to be EEA-wide, given that ethylene can be transported by ship. They acknowledge however that it could be

³¹⁵ Non-confidential version of the agreed minutes of conference call of 3 October 2013 with Atelier Jean Reigners ID4170; and non-confidential version of the agreed minutes of conference call of 3 October 2013 with CID Lines ID4175.

³¹⁶ Reply of Atelier Jean Reigners to Phase I Questionnaire to competitors (Sodium hypochlorite) ID1875 ("*We were extremely shocked when we heard about this merger plan, and are worried about the future behaviour of newco. indeed, while we matter on the consumer bleach market, we're not huge, and have little power vis a vis these huge groups.*"); and reply of CID LINES to Phase I Questionnaire to competitors (Sodium hypochlorite) ID5394 ("*In general I believe the merger would be negative for our industry (smaller margins, price increases ...)*").

³¹⁷ Commission Decision Case No M.6218 *INEOS/Tessenderlo Group S-PVC Assets* (2011), OJ C279, 23.09.2011, Paragraph 62.

³¹⁸ Commission Decision Case No M.6218 *INEOS/Tessenderlo Group S-PVC Assets* (2011), OJ C279, 23.09.2011, Paragraph 63.

possible to identify a market restricted to the ARG+ pipeline network, where both Notifying Parties are also active to a limited degree.

- (427) The results of the market investigation in this case have been inconclusive. In any event the Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.2. Other products resulting from cracking of NGLs or naphtha

- (428) Together with ethylene, cracking NGLs or naphtha results in the production of propylene. Other by-products are pygas and C4. The production of C4 gives rise to other by-products, which will be also discussed in this Section.

8.2.1. Propylene

- (429) Propylene is used for the production of polypropylene, propylene oxide, acrylonitrile, cumene and other chemicals. Those chemicals are used in a broad range of consumer products, such as batteries, automobile interiors, carpeting, clothing and other textiles.

8.2.1.1. Relevant Product market

- (430) In previous decisions,³¹⁹ the Commission found that propylene could be considered as constituting a product market in itself, as it is generally not substitutable for other products. The Notifying Parties agree with this approach.
- (431) The Commission considers also that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.2.1.2. Relevant Geographic market

- (432) In previous decisions³²⁰ the Commission has considered that the geographic scope of the market is at least Western Europe, but ultimately did not conclude on this issue. The Notifying Parties agree with this approach.
- (433) The Commission considers also that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.2.2. Butadiene

- (434) Butadiene is a reactive gas produced as a by-product of the production of C4. It is generally stored and supplied in pressurised and refrigerated tanks or pipelines. It is used as an input to a number of products and a key component in synthetic rubbers used in car tyres and in synthetic latices used in the paper industry.

8.2.2.1. Relevant Product market

- (435) In line with the Commission's previous decisions³²¹, the Notifying Parties consider that the supply of butadiene constitutes a relevant product market due to its physical

³¹⁹ Commission's Decision of 21 December 2006 in Case No. M.4401 *Basell/Muenchsmuenster*, Paragraph 16.

³²⁰ Commission's Decision of 21 December 2006 in Case No. M.4401 *Basell/Muenchsmuenster*, Paragraph 17.

characteristics and the absence of substitutes for its specific uses. In that respect, the Notifying Parties submit that there is only one grade of butadiene and it is an essential ingredient in the production of various synthetic rubber polymers, including ABS and styrene-butadiene. The Commission's market investigation in a previous case³²² confirmed that there is only one grade of butadiene and thus is in line with the arguments of the Notifying Parties.

- (436) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.2.2.2. Relevant Geographic market

- (437) The Commission has previously considered the geographic scope for butadiene to be at least "Western Europe +", which is composed of Western Europe, Poland and the Czech Republic.³²³

- (438) The Notifying Parties argue that there are strong arguments for a wider market definition. In particular, the Notifying Parties submit that butadiene is traded globally and that there are no significant trade barriers. In that respect, the Notifying Parties note that Western Europe is a net exporter of butadiene,³²⁴ and that North America is a net importer of butadiene,³²⁵ as the Commission has recognized in its previous decision. On this basis, the Notifying Parties submit that the market for butadiene is at least EEA-wide.

- (439) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.2.3. Raffinate 1

- (440) Raffinate 1, which is also known as mixed butylenes, is produced as a by-product of butadiene production. It is used mainly in the production of gasoline additives and also to make inner tubes for tyres and the inner liners of sports equipment such as footballs.

8.2.3.1. Relevant Product market

- (441) In previous decisions³²⁶, the Commission left open the question of whether raffinate 1 constitutes a separate product market. The Notifying Parties submit that there is no

³²¹ Commission's Decision of 26 April 2001 in Case No. M.2345 *Deutsche BP/Erdölchemie*, Paragraph 11; and Commission's Decision of 20 December 2006 in Case No. M.4426 *SABIC/Huntsman Petrochemicals UK*, Paragraph 9.

³²² Commission's decision of 22 December 2005 in Case No. M.4041 *Basell/Société du Craqueur de l'Aubette*, Paragraph 16.

³²³ Commission's decision of 22 December 2005 in Case No. M.4041 *Basell/Société du Craqueur de l'Aubette*, Paragraph 22.

³²⁴ Export in 2012 of 170 kt of butadiene against import of only 23 kt. This net export position forecast to continue.

³²⁵ Import in 2012 of 560 kt of butadiene against export of only 63 kt, the majority of which is sourced from Europe.

³²⁶ Commission's decision of 20 December 2006 in Case No. M.4426 *SABIC/Huntsman Petrochemicals UK*, Paragraph 36; Commission's decision of 22 December 2005 in Case No. M.4041 *Basell/Société du Craqueur de l'Aubette*, Paragraph 17.

need to decide on a precise product market in this instance as no competition concerns arise.

- (442) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.2.3.2. Relevant Geographic market

- (443) In previous decisions the Commission has considered the geographic scope of the market for raffinate 1 as at least WE³²⁷. The Notifying Parties submit that there is no need to decide on a precise geographic market in this instance as no competition concerns would arise under any market definition.

- (444) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.3. Chlorine

- (445) Chlorine is a toxic gas produced through the electrolysis of a solution of salt and water, which also results in the production of by-products, such as caustic soda and sodium hypochlorite. Chlorine is used for the production of PVC, solvents, isocyanates, chloromethanes and other products. It is also used as an end-product in water treatment. It can be supplied either as a gas or in the liquid form.

8.3.1. *Relevant Product market*

- (446) In previous Decisions the Commission has not decided on the relevant product market for chlorine, but has found that different industrial, chemical and speciality gasses are generally not interchangeable because of their different physical and chemical properties.³²⁸

- (447) The Notifying Parties agree with this approach and suggest that chlorine should be considered a separate product market. The respondents to the market investigation in this case have confirmed the Notifying Parties' conclusions that chlorine is not substitutable with any other products. Several respondents indicated that the market for chlorine could be further segmented so that chlorine supplied in bulk is a different product market from chlorine supplied in cylinders and drums.

- (448) The Commission considers that for the assessment of this case chlorine constitutes a distinct product market. It can be left open whether further segmentations would be appropriate, as the Transaction does not raise competition concerns irrespective of the precise market definition.

³²⁷ Commission's decision of 20 December 2006 in Case No. M.4426 *SABIC/Huntsman Petrochemicals UK*, Paragraph 39. Western Europe in that case was defined having regards to EEA Member States prior to their accession to the EU in 2004.

³²⁸ Commission's decision of 20 September 2006 in Case No. M.4091 *Linde/Spectra* (year), Paragraph 7; Case No. M.4141 *Linde/BOC*, Paragraph 20-23. In both cases chlorine was defined as speciality gas.

8.3.2. *Relevant Geographic market*

- (449) In a previous Decision the Commission has not decided on the scope of the relevant geographic market for chlorine, but has found that chlorine is difficult to transport and is hardly ever shipped to make PVC.³²⁹
- (450) Consistently with the Commission's precedent, the Notifying Parties submit that chlorine is a toxic gas which is difficult and costly to transport other than by pipeline,³³⁰ and that it is generally produced close to the plant where it is used as feedstock. They further submit that chlorine sold on the merchant market is not normally transported more than 500km³³¹ and on that basis they suggested that the appropriate relevant market definition should be national. The Notifying Parties also submit that it is not logistically feasible to transport chlorine to the United Kingdom from Continental Europe, as is demonstrated by the limited cross border trade, estimated to be less than 1kt/y in 2012.³³² The Notifying Parties do not consider pipeline sales of chlorine to be on the merchant market as such sales are dependent on dedicated pipelines under long-term structural agreements.
- (451) The majority of the respondents to the Commission market investigation confirmed that chlorine is difficult to transport (this is done usually by pipeline, special rail cars, bulk tankers, cylinders or pressure drums) and that the maximum transport distance is 500 km.³³³ Some of the respondents indicated that both the distance at which chlorine can travel and the transport costs as a percentage of the sale price depend on the mode of transport (that is to say pipeline, rail car, cylinders or drums). As regards the United Kingdom, the market investigation largely confirmed the Notifying Parties submissions: the respondents indicated that for safety and logistical reasons chlorine in bulk is not transported between Continental Europe and the United Kingdom.
- (452) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns even in the narrowest market definition.

8.4. Inputs and technologies for the production of chlorine

8.4.1. *Salt*

- (453) Salt (sodium chloride) is a solid crystalline compound which can be dissolved in water to form brine (a saturated salt aqueous solution). Salt can be used for a variety of applications. It is a key raw material or ingredient in many industries, particularly in the chloralkali industry where it is used as raw material for the production of chlorine (and by-products such as caustic soda and bleach) through electrolysis and for the production of soda ash, but also in the textile, detergent and food industries.

³²⁹ Commission's decision of 30 January 2008 in Case No. M.4734 *INEOS/Kerling*, Paragraph 27.

³³⁰ The Notifying Parties also note that chlorine is only permitted to be transported by rail not road in continental Europe, and chlorine is banned from transportation in the Netherlands.

³³¹ In that regard, the Notifying Parties referred to calculation made by Euro Chlor.

³³² To the best of the Notifying Parties' knowledge bulk chlorine is not imported in the United Kingdom.

³³³ One respondent indicated 700 km as the maximum delivery distance. However, the average distance indicated is below 400 km.

8.4.1.1. Relevant Product market

- (454) In previous decisions³³⁴, the Commission found that the market for salt can be broadly segmented into deicing salt and non-deicing salt, and that the latter can further be sub-segmented into several products, including a separate market of salt for chemical transformation (electrolysis). However, the Commission left the precise product market definition open. The Notifying Parties submit that in this case the relevant product market definition can be left open.
- (455) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.4.1.2. Relevant Geographic market

- (456) As regards the relevant geographic market, the Notifying Parties suggested following the Commission's precedent,³³⁵ according to which there are four distinct relevant geographic markets, that is to say Mainland Europe (including Benelux, Germany, France, Denmark, Switzerland, Italy, Austria and Greece), the Iberian Peninsula (Spain and Portugal), the United Kingdom and Ireland and the Nordic countries (Norway, Sweden, Finland and Iceland) for salt.
- (457) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.4.2. Chlorine production technologies

- (458) A chlorine plant comprises the chlorine cell (the heart of the plant where electrolysis takes place) and the remainder of the plant (which deals with, for example, brine purification³³⁶). Typically, different companies are active in the provision of technology and equipment in relation to the cellroom, on the one hand, and the rest of the plant, on the other hand. Chlorine cellroom technology typically involves supplying design, equipment, know-how and technical services to customers and engineering and building are supplied as options by some suppliers. However, as part of the technology package, the licensor will also provide advice on the brine purification process relevant to the plant site (that is to say, the nature of the salt or scope to dispose of waste brine in the case of a new plant) or aligning the cellroom technology with a pre-existing brine purification facility in the case of an existing plant, expansion or conversion.
- (459) As regards chlorine cell, different technologies have been developed to separate the highly reactive co-products of electrolysis (chlorine, CS and hydrogen) and keep them apart.
- (460) There are three main types of chlorine cell technology: membrane based, diaphragm based and mercury based. **Mercury based technology** is being phased out due to environmental concerns. In **diaphragm cell technology**, chlorine, CS and hydrogen

³³⁴ Commission's decision of 10 January 2002 in Case No. M.2176 *K+S/Solvay/JV*.

³³⁵ Commission's decision of 10 January 2002 in Case No. M.2176 *K+S/Solvay/JV*.

³³⁶ Brine purification involves taking the impurities out of the brine before it is electrolysed (for example, by precipitation, filtration or ion-exchange resins) in order to enhance the electrolysis process.

are produced simultaneously and the diaphragm separates chlorine from hydrogen. New diaphragm cellrooms are no longer actively supplied in the EEA (or globally). **Membrane cell technology** differs from diaphragm cell technology in that the solutions surrounding each electrode are separated by a membrane rather than a diaphragm: the membrane is very selective so that only sodium ions can pass through the membrane – resulting in a CS solution that contains low levels of sodium chloride. Membrane based cellrooms are the most widely used technology in Europe: in 2011, membrane cell capacity accounted for 51% of total installed chlorine production capacity in Europe.

(461) Other than in China, the majority of cellroom technology demand globally is accounted for by conversions, upgrades and expansions of existing cellrooms.

8.4.2.1. Relevant Product market

(462) The Commission has not yet defined a relevant product market for those technologies.

(463) As regards chlorine cellroom technology, the Notifying Parties submit that, although the product market could theoretically be further segmented according to the type of technology (mercury, membrane and diaphragm), membrane technology is the only technology provided for new plants today.

(464) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.4.2.2. Relevant Geographic market

(465) The Notifying Parties submitted that, in line with the Commission's approach to technology markets, the markets for chlorine production technologies should be considered as global. Competition in the licensing of those technologies takes place globally. Licensors can compete for business wherever the potential customer is seeking to license technology and the licensor can offer their technology to customers located anywhere in the world.

(466) The Commission considers that for the assessment of this case the precise geographic market definitions can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.4.3. *Electrocoating*

(467) Chlorine cellrooms are provided with electrolyzers which are painted with an electrocoating to enable them to operate effectively. Aftercare services for the supply of electrocoatings are necessary for the smooth functioning of the chlorine production process.

(468) Whilst electrocoatings can be supplied by any electrocoatings supplier (electrocoatings are not specific to the original technology), in general the customer will source this from the original chlorine cell technology provider (the Notifying Parties estimated that this accounts for over 90% of purchases).

8.4.3.1. Relevant Product market

(469) The Commission has not yet considered the market for electrocoatings for chlorine cells. The Notifying Parties submit that the relevant market should be the overall market for electrocoatings for chlorine cells, since the electrocoatings used in

different types of chlorine cells (membrane, mercury and diaphragm) are very similar, and without differentiating between electrocoatings for anode or cathode, since although technically different, they are routinely replaced at the same time.

- (470) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.4.3.2. Relevant Geographic market

- (471) As was the case for chlorine cellroom technology, the Notifying Parties submit that electrocoatings for chlorine cells are supplied globally and the relevant market should be global.

- (472) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.5. Liquid Caustic Soda (CSL)

- (473) CSL, also referred to as sodium hydroxide (NaOH), is a by-product derived from the production of chlorine. It is a commodity product which can have liquid or solid form. CSL has a wide range of applications in the chemical industry, pulp and paper industry, in water treatment, in the production of aluminum, in oil refining as well in soaps, detergents and textiles. Solid caustic soda is produced from the liquid form through the use of special additional evaporating equipment. The uses of both the solid and the liquid product are broadly similar but solid caustic soda is used less frequently, mainly by small users.

8.5.1. Relevant Product market

- (474) The Notifying Parties submit that the market for CSL is separate from the market for solid caustic soda and that in any event, even assuming a single product market for both liquid and solid caustic soda, the Notifying Parties' market share would not appreciably be altered in the EEA or the NWE market.

- (475) In previous decisions³³⁷, the Commission suggested that CSL and solid caustic soda constitute two separate markets, while leaving the exact product market definition open. It concluded however that a further segmentation within CSL or solid caustic soda would not be appropriate because most producers can easily produce and offer different concentrations.

- (476) The respondents to the market investigation in this case confirmed the Commission's previous findings. The majority of the respondents to the Commission's questionnaires indicated that CSL is not substitutable with solid caustic soda either from demand or supply side, as in both cases customers and producers would need to make substantial investments and changes to their production processes. The respondents to the market investigation also confirmed that CSL is a commodity and cannot be further segmented.

³³⁷ Case No M.6218 *INEOS/Tessenderlo Group S-PVC Assets* (2011), Paragraph 42; Case No M.4734 *INEOS / Kerling* (2008), Paragraph 35.

(477) The Commission considers that, for the assessment of this case, it can be left open whether CSL and solid caustic soda constitute a single market or two separate markets, as the Transaction does not raise competition concerns irrespective of the precise market definition. The Commission also considers that no further segmentation according to the concentration levels is appropriate.

8.5.2. *Relevant Geographic market*

(478) The Notifying Parties submit that the appropriate geographic market for CSL is at least EEA-wide.

(479) In its most recent decision related to CSL³³⁸ and on the basis of average transport distance and other shipment data, the Commission concluded that the relevant geographic market for CSL is at least NWE and might even be EEA-wide in scope. The respondents to the market investigation in this case confirmed the Commission's previous findings.

(480) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.6. **EDC**

(481) EDC is produced by reacting chlorine or hydrogen chloride gas with ethylene. It is essentially an intermediate product, as 96% of the EDC production is used to make VCM.³³⁹

8.6.1. *Relevant Product market*

(482) In its previous decisions,³⁴⁰ the Commission has not concluded on whether EDC constitutes a distinct product market. The Notifying Parties submit that all PVC producers in the EEA, including both INEOS and Solvay, use the product mainly captively. Therefore, also taking into account the *de minimis* size of the EDC merchant market the Notifying Parties submit that the issue of product market definition can be left open.

(483) The respondents to the market investigation in this case have confirmed the Notifying Parties' arguments as to the limited size of the merchant market for EDC.

(484) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

³³⁸ Case No M.6218 *INEOS/Tessenderlo Group S-PVC Assets* (2011); Case No M.4734 *INEOS / Kerling* (2008).

³³⁹ Form CO, Section 6, Part M, "Minor overlaps", Table M6.6...

³⁴⁰ Case No M.6218 *INEOS/Tessenderlo Group S-PVC Assets* (2011); Case No M.4734 *INEOS / Kerling* (2008).

8.6.2. *Relevant Geographic market*

- (485) In its previous decisions,³⁴¹ the Commission has not concluded on the precise geographic scope of the EDC market. The Notifying Parties submit that given the *de minimis* size of the EDC merchant market this issue can be left open.
- (486) The limited size of the merchant market has been confirmed by the respondents to the market investigation.
- (487) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.7. VCM

- (488) VCM is produced through the cracking of EDC, and then polymerised in a reactor to produce PVC. It is an intermediate product for the production of PVC, as the Notifying Parties estimated that 97% of VCM is used for the production of PVC.³⁴² There are some other very small speciality chemical uses for VCM, but they are negligible.

8.7.1. *Relevant Product market*

- (489) The Commission has not previously determined whether VCM constitutes a distinct product market, leaving open the question as to whether there exists a merchant market for VCM and whether VCM constitutes a distinct product market.
- (490) The Notifying Parties submit that in this case the issue can be left open, since most of the VCM produced is used captively for the production of PVC and the Transaction does not give rise to any competition concerns related to the market for VCM. The majority of the respondents to the market investigation confirmed that VCM is used predominantly captively for PVC production.
- (491) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.7.2. *Relevant Geographic market*

- (492) The Commission has not previously determined the geographic scope of the market for VCM.
- (493) The Notifying Parties submit that VCM is delivered by a variety of methods (pipeline, rail, road and ship) both within Europe and worldwide (for example, United States producers ship VCM to Mexico, Colombia, Australia and Asia by sea). They therefore submit that the geographic market for VCM is likely to be at least EEA-wide, although, since no competition concerns in relation to VCM arise, the exact geographic market definition can be left open.

³⁴¹ Case No M.6218 *INEOS/Tessenderlo Group S-PVC Assets* (2011); Case No M.4734 *INEOS / Kerling* (2008).

³⁴² In a past Decision, the Commission noted that "[a]lmost all the VCM is used to produce PVC" and that "the demand for PVC drives the demand for VCM", Case M.6218 *INEOS/Tessenderlo S-PVC Assets*, para. 68; see also Case M.4734 – *INEOS/Kerling*, Paragraph 29.

- (494) The market investigation was inconclusive as regards the geographic dimension of the market for VCM. Respondents to the market investigation indicated that in Europe VCM is typically used captively and close to its place of production. However, the other respondents also indicated that despite the fact that the transportation of VCM presents logistical problems and environmental concerns, VCM can be profitably transported at 1200km and possibly longer distances.
- (495) In any event, the Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.8. Catalysts and technologies for the production of EDC/VCM

- (496) EDC/VCM technology is the information and intellectual property rights necessary to design and operate an EDC/VCM facility and it typically includes a basic design package, review of detailed design and construction and various other related services. The exact scope of the services provided will depend on the complexity of the project and the licensee's familiarity with the production process. EDC/VCM technology is generally supplied by PVC producers which have developed those technologies. The consideration for EDC/VCM technology services generally includes a (i) license fee, (ii) a fee for technical services and (iii) a daily rate for other services.
- (497) When selecting EDC/VCM technology, a customer can choose either a "fully balanced" plant where the licensor provides the complete technology from ethylene and chlorine through to VCM, or a combination of direct chlorination technology, oxychlorination technology or cracking technology.
- (498) EDC catalysts are used as part of the PVC production chain, in the oxychlorination process. EDC catalysts are granules or pellets coated in chemicals. Those chemicals assist in the reaction of hydrogen chloride gas with ethylene. There are two different EDC catalysts: fixed and fluid bed catalysts.³⁴³ EDC catalysts are typically sold separately from the EDC/VCM technology.

8.8.1. EDC/VCM technology

8.8.1.1. Relevant Product market

- (499) In the past the Commission has not considered the product market for EDC/VCM technology licensing. The Notifying Parties submit that, while from a customers' perspective direct chlorination, oxychlorination and VCM technology all serve different functions within an EDC/VCM plant, from a supply-side perspective those technologies are supplied by all main suppliers. Moreover, the Notifying Parties note that most licensees purchase fully balanced EDC/VCM plant technologies.
- (500) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

³⁴³ Although functionally similar, fixed bed catalysts can only be used in a fixed bed EDC plant while fluid bed catalysts can only be used in a fluid bed plant. Moreover, EDC fixed-bed catalysts are usually replaced every three years, while EDC fluid bed catalysts are continuously being added to the reaction and are being replaced more frequently.

8.8.1.2. Relevant Geographic market

- (501) In the past the Commission has not considered the geographic market for EDC/VCM technology licensing. The Notifying Parties submit that, similarly to most technology licensing markets, the EDC/VCM technology is licensed globally. In fact, The Notifying Parties themselves supply their technology globally.³⁴⁴ Moreover, the Notifying Parties note there are no regional preferences for particular suppliers or technologies and in particular that there are no specific conditions that would make the use of one of the competing EDC/VCM technologies more likely in the EEA. On that basis, the Notifying Parties submit that the relevant geographic market for EDC/VCM technology licensing is worldwide.
- (502) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.8.2. *EDC catalysts*

8.8.2.1. Relevant Product market

- (503) In the past the Commission has not considered the product market for EDC catalysts. The Notifying Parties submit that the market for EDC catalysts can be segmented into fixed bed and fluid bed catalysts as these are not interchangeable from a customer perspective and suppliers cannot easily switch production from to the other.
- (504) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.8.2.2. Relevant Geographic market

- (505) In the past the Commission has not considered the geographic market for catalysts. The Notifying Parties submit that EDC catalysts are supplied globally. INEOS supplies fixed and fluid bed catalysts to customers in the United States, Pakistan, Brazil, China, Taiwan, Korea, India, Japan and Egypt, while Solvay supplies its only external customer in China.
- (506) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.9. **Hydrochloric Acid**

- (507) Hydrogen chloride is a by-product of cracking from a wide variety of manufacturing processes that involve chlorine. There is no significant merchant market for the sale of hydrogen chloride gas as it is difficult and costly to transport. The vast majority of the hydrogen chloride gas produced by those various manufacturing processes is recycled internally.³⁴⁵ The Commission has not previously identified a distinct market for hydrogen chloride gas, however, neither INEOS nor Solvay supply

³⁴⁴ INEOS supplies customers in [...] and [...] while Solvay licensed its technology in [...].*

³⁴⁵ For example, where hydrogen chloride gas is produced through the cracking of EDC, it is internally recycled within VCM plants to be reacted with ethylene in order to produce more EDC (an input for VCM and therefore S-PVC).

hydrogen chloride gas on the merchant market. Therefore this Commission will not assess the market for hydrogen chloride in this Decision.

- (508) The combination of hydrogen chloride gas with water produces an aqueous solution: hydrochloric acid. In comparison to hydrogen chloride gas, hydrochloric acid is easier to transport although costly to transport over long distances given the high proportion of water involved.³⁴⁶ There is a merchant market for hydrochloric acid, where it is used in a variety of applications such as pickling steel sheets, producing gelatin and wastewater treatment.

8.9.1. *Relevant Product market*

- (509) The Commission has previously considered the possibility that hydrochloric acid may be split into two separate relevant markets dependent on grade: (i) *technical grade* or (ii) *premium grade* hydrochloric acid.³⁴⁷ Technical grade hydrochloric acid is produced as a by-product from the production of chlorinated chemical compounds and can either be used in various production processes or be sold to the merchant market, whereas premium grade hydrochloric acid is deliberately produced as a primary product usually in a purer form and is also used in producing glucose and other foods. The Notifying Parties submit that the market definition can ultimately left open because the Transaction will not give rise to any competition concerns.
- (510) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.9.2. *Relevant Geographic market*

- (511) In *Solvay/Montedison-Ausimont* case,³⁴⁸ the Commission observed that, due to the high costs of transportation, hydrochloric acid is rarely transported over distances of more than 400km, and therefore for a given user of hydrochloric acid, competition occurs between manufacturers located within a typical 400km distance.
- (512) The Notifying Parties did not dispute that, and submit that the geographic market definition for hydrochloric acid should be either national or regional, in particular in the Benelux region where, given that competition occurs within a 400km radius of production, competitors from all of Benelux countries as well as producers located in France and Germany are able to compete.
- (513) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

³⁴⁶ Hydrogen chloride gas can only be transported in volume commercially via dedicated pipelines, whereas the vast majority of hydrochloric acid is transported via bulk tank lorry.

³⁴⁷ Commission's decision of 9 April 2002 in Case No. M.2690 *Solvay/Montedison-Ausimont*, Paragraphs 128-130. See also Commission's decision of 19 December 2002 in Case No. M.3024 *Bain Capital/Rhodia*.

³⁴⁸ Commission's decision of 9 April 2002 in Case No. M.2690 *Solvay/Montedison-Ausimont*, Paragraph 133.

8.10. E-PVC

8.10.1. Relevant Product market

- (514) The Notifying Parties submit that the market for E-PVC includes also micro-suspension PVC, as both the micro-suspension and the emulsion production processes result in the same end product. According to the Notifying Parties, switching between these two types of PVC would be easy for both customers and producers.
- (515) Within E-PVC, the Notifying Parties argue that no further segmentation would be appropriate. In particular, according to the Notifying Parties the segmentation between paste and specialty E-PVC would not be appropriate since they are both produced on the same production line and the only differences are the grinding process and the additives used, which determine suitability for different end-uses, that is to say flexible applications for paste E-PVC and rigid applications for specialty E-PVC. Moreover, the Notifying Parties submit that there is no standard definition of these two alleged types of E-PVC based on their chemical composition or the K-value.
- (516) In addition, according to the Notifying Parties, within E-PVC it would not be appropriate to differentiate between different K-values. Similar to S-PVC, E-PVC suppliers manufacture different grades of E-PVC, determined by their molecular weight or K-value, which are suitable for different end-uses. However, the Notifying Parties submit that, regardless of the different end-use, the various E-PVC grades can be produced using the same equipment and the same process and all E-PVC manufacturers can produce the majority of E-PVC grades covering the major E-PVC end applications.
- (517) The cost and time required to start producing additional E-PVC grades on an existing E-PVC production line will depend on the nature of the grade the manufacturer wants to start producing, the existing operating conditions of the production line and on the product mix that is already being produced on the line.
- (518) If the additional grades are related to others already produced, the Notifying Parties estimate that the expansion does not require significant investments from a producer in terms of time (between three and nine months until end user approval) or cost (up to EUR 100°000)³⁴⁹; in the exceptional circumstances that the expansions concern grades which are unrelated to the range already produced, changes in the production line may be required and more significant investments would be needed. On average an approximate investment of EUR 1-1.5 million which may take up to 12 months.
- (519) From the demand side perspective, the Notifying Parties argue that in any event there is a high degree of substitutability between E-PVC grades, since the majority of the applications are not confined to only one K-grade and time and costs for switching are low also for the customers
- (520) In conclusion, the Notifying Parties submit that the relevant product market is the entire market for E-PVC, without any further segmentation.

³⁴⁹ Solvay recently [...]*

(521) The Commission has assessed the relevance of the segmentations mentioned in Recitals 510-515 for market definition purposes.

8.10.1.1. Microsuspension PVC

(522) The first segmentation considered by the Commission concerns E-PVC and micro-suspension PVC. An industry report describes micro-suspension PVC as follows: *"Some emulsion-grade PVC is produced by microsuspension polymerization. This process is similar to the regular suspension process except that the droplets of monomer maintain their original small size via the action of mechanical and/or chemical means with the aid of an emulsifier. The processing of the PVC is similar to that used for emulsion polymerization. The resultant PVC has a wider particle size distribution than is obtained by emulsion polymerization, which has the benefit of producing a plastisol with lower viscosity but with shear thickening properties, making it unsuitable for use in high speed processes."*³⁵⁰

(523) In their responses to the Commission's questionnaires, customers suggested that E-PVC and micro-suspension PVC constitute very different products. In that regard 84% of the customers explained that they cannot switch from micro-suspension PVC to E-PVC in a reasonable time and without incurring significant costs.³⁵¹ This is because of the technical properties of the resins and their compatibility with the production machinery and also due to constraints resulting from the existence of standard recipes and quality requirements of the final product. In this vein one customer explained that any minor change of components used in the production process, raw materials or additives would require further R&D and additional testing which would take at least one year. Overall, the costs of switching range between EUR 20.000-500 000 and the time framework is 1.5-2 years. However, as will be further illustrated in Section 8.10.1.3., customers expressed the same view as regards substitutability of different grades of paste E-PVC.³⁵²

(524) Only Solvay is active in the production and sale of micro-suspension PVC and consequently overlaps would not arise in such a narrower market. On the basis of the data provided by the Notifying Parties and the information collected in the market investigation, the Commission estimates that micro-suspension PVC represented roughly 30% of the total paste E-PVC + micro-suspension PVC capacity in the EEA in 2012. In this context the market position of the JV and its competitors would be comparable in either scenario, that is to say including and excluding micro-suspension PVC from the relevant market. In fact, Vinnolit's market position in terms of capacity would be strengthened in a hypothetical market excluding micro-suspension PVC.

(525) Therefore, the Commission considers that for the assessment of this case the question as to whether the market for E-PVC includes also micro-suspension PVC or not can be left open since it would not affect the competitive assessment. However, the assessment will be conducted in the market including micro-suspension PVC, where the JV will have a stronger market position in terms of capacity.

³⁵⁰ Michael Devanney, CEH Marketing Research Report on Polyvinyl Chloride (PVC) Resins, 2011, p. 15.

³⁵¹ See replies to question 7 - Phase I Questionnaire to customers (E-PVC).

³⁵² See below Section 8.10.1.3.

8.10.1.2.Specialty E-PVC

- (526) The second segmentation considered by the Commission concerns paste and specialty E-PVC. Such distinction has been considered by the Commission in previous cases.³⁵³
- (527) The Commission considers that the market investigation in this case is in line with the Commission's precedents. In particular, 77% of the customers stated that they would not be able to switch from paste E-PVC to specialty E-PVC in a reasonable time and without incurring significant costs in particular in terms of R&D.³⁵⁴ This is because each resin presents specific properties so that a change of raw material would imply a re-engineering of whole product.
- (528) In that regard a customer explained that, in order to switch from paste to specialty E-PVC or viceversa, "*we should have to reindustrialized all our product with increase of costs and we should ask to all our customer to reomologate all the articles.*"³⁵⁵ Another customer stated that "*Ein Ersatz von paste E-PVC durch specialty E-PVC ist laut Aussage unserer Produkt/entwicklung/Labor technisch nur theoretisch in einzelnen Bereichen denkbar und ohne größeren Zeit-/Kostenaufwand in diesen Teilbereichen nicht zu realisieren (Zeitaufwand für Laboruntersuchungen / Rezepturänderungen / Produkt / yionsversuche etc., Kostenaufwand bedingt durch Umstellungsaufwand/evtl. erhöhter Ausschuss/höherer Preis für specialty E-PVC etc.).*"³⁵⁶
- (529) Likewise, the competitors' replies in the context of the market investigation suggest that substitutability on the supply side between the two resins would be limited and that specialty E-PVC is a small niche market.³⁵⁷
- (530) Only Solvay is active in specialty E-PVC and consequently overlap would not arise in such a narrow market. On the basis of the data provided by the Notifying Parties and the information collected in the market investigation, the Commission estimates that specialty E-PVC represented roughly 10% of the overall E-PVC market in the EEA in 2012. Apart from Solvay, only Vinnolit is active in the production of this resin. In this context, the market position of the JV and its competitors would be comparable in either scenario, that is to say both including and excluding specialty E-PVC from the relevant market.
- (531) Therefore the Commission considers that for the assessment of this case the question as to whether the market for E-PVC should be further segmented into paste and specialty E-PVC can be left open since it would not change the competitive assessment. However, the assessment will be conducted in the market including specialty E-PVC, where the JV will have a stronger market position in terms of capacity.

³⁵³ Commission Decision of 21 May 2007 in Case No M.4572 *Vinnolit v Ineos CV Specialty PVC business*; Commission Decision of 30 January 2008 in Case No M.4734 *INEOS/Kerling*.

³⁵⁴ See replies to question 8 - Phase I Questionnaire to customers (E-PVC).

³⁵⁵ Reply of Vulcaflex SPA, Italy to question 8 - Phase I Questionnaire to customers (E-PVC) ID1878.

³⁵⁶ Reply of Marburger Tapetenfabrik, Germany to question 8 - Phase I Questionnaire to customers (E-PVC) ID2302.

³⁵⁷ Non-confidential version of agreed minutes of a conference call with Vinnolit dated 7 October 2013 ID3597.

8.10.1.3. Grades of E-PVC

- (532) The third segmentation considered by the Commission concerns the different K-values and grades of paste E-PVC.
- (533) The results of the market investigation have not been conclusive as to whether the market for paste E-PVC should be segmented into different sub-segments. Whilst 44% of the customers could not switch from one grade of paste E-PVC to another in their manufacture activities,³⁵⁸ 41% of customers consider that substitutability depends on the grade.³⁵⁹ 17% of the customers also indicated that they could switch between different grades.³⁶⁰ The reasons given for the negative replies are the need to review the product development process and to adjust their customer's requirements, as well as to perform costly tests of the new product.
- (534) However, the customers' replies suggest the existence of a great level of product differentiation which could not be captured by a simple breakdown of the market by K-value.
- (535) In any event, it appears that each grade of paste E-PVC produced by a supplier in a specific plant has specific technical properties which are not perfectly replicable by any other grade of paste E-PVC even produced by the same supplier. In that regard a customer explained that "[t]he actual products need to be produced in the same plant, on the same line with the same specifications and with the same process. If not, this means a complete new qualification of an alternative PVC, [coming] from the JV or from elsewhere,"³⁶¹ whilst another one stated that "*E-PVC-Typen mit speziellen Produkt/eigenschaften die wir in unserer Produkt/ion einsetzen, die wir nicht durch andere E-PVC-Typen ersetzen können, da diese Typen einmalig in Ihren Eigenschaften sind und von anderen PVC-Produzenten in dieser Qualität nicht angeboten werden.*"³⁶²
- (536) In that context 93% of the customers stated that not all producers of paste E-PVC are suitable and likely manufacturers of all grades of paste E-PVC that they require for their manufacturing activities.³⁶³ For example, whilst one customer explained that "*Not ALL producers can produce ALL grades for ALL use... Each type has its own characteristics. Some times these don't work in certain recepies*",³⁶⁴ another one clearly stated that "*Nicht jeder paste E-PVC-Hersteller hat die von uns benötigten Qualitäten im Lieferprogramm. Wir haben in unserem Produkt/yionsprozess E-PVC-Typen im Einsatz, die wir teilweise nur von einem Hersteller beziehen können, da andere Hersteller nicht über geeignete Alternativen verfügen.*"³⁶⁵
- (537) That has also been confirmed by competitors who have stated that the same product may present different technical properties when produced in different plants. In that

³⁵⁸ See replies to question 9 - Phase I Questionnaire to customers (E-PVC).

³⁵⁹ See replies to question 9 - Phase I Questionnaire to customers (E-PVC).

³⁶⁰ See replies to question 9 - Phase I Questionnaire to customers (E-PVC).

³⁶¹ Reply of Emfi SAS, France to question 28 - Phase I Questionnaire to customers (E-PVC) ID2017.

³⁶² Reply of Marburger Tapetenfabrik to question 9 - Phase I Questionnaire to customers (E-PVC) ID2302.

³⁶³ See replies to question 10 - Phase I Questionnaire to customers (E-PVC).

³⁶⁴ Reply of B.I.G. Floorcoverings NV, Belgium to question 10 - Phase I Questionnaire to customers (E-PVC) ID1948.

³⁶⁵ Reply of Marburger Tapetenfabrik to question 10 - Phase I Questionnaire to customers (E-PVC) ID2302.

regard, one competitor explained that "*one grade will not be identical when being produced in two different plants.*"³⁶⁶ This has been referred to as the technical footprint of a plant.³⁶⁷ However, the competitors' replies in the context of the market investigation suggest that supply side substitutability between different grades of paste E-PVC exist to the extent that different grades can be produced in the same plant. That is consistent with the Notifying Parties' submission and with the fact that in each of their plants they are able and do produce different grades of paste E-PVC.

(538) Therefore, the Commission considers that the relevant product market encompasses all K-values and grades.

8.10.1.4. Conclusion on product market definition

(539) The Commission therefore concludes that for the assessment of this case the relevant market is the E-PVC market, including micro-suspension PVC, paste and specialty E-PVC of all K-values and grades.

8.10.2. Relevant Geographic market

(540) The Notifying Parties submit that the geographic scope of the market for E-PVC is global. According to the Notifying Parties, E-PVC is a non-toxic product which can be transported for long distances at a cost which accounts for less than 5 to 10% of the sale price. Moreover, barriers to global trade are insignificant, since low custom duties apply to the import of E-PVC. In this context, the Notifying Parties note that 40 % of the total E-PVC produced in the EEA was exported outside the EEA and [...] % and [...] % of respectively 2012 E-PVC sales of INEOS and Solvay were to customers outside the EEA and Switzerland.

(541) In previous Decisions, the Commission considered the geographic scope of the E-PVC market as EEA-wide.³⁶⁸ However, in a recent case the market investigation indicated that the market for E-PVC could possibly be global.³⁶⁹ Nevertheless, the Commission ultimately left the geographic market definition open.

(542) The Commission considers that the market investigation in this case has been consistent with the Commission's precedents. The majority of the customers stated that, when they purchase E-PVC, they use suppliers located anywhere in the EEA (66% of the customers)³⁷⁰ and even outside the EEA (25% of the customers),³⁷¹ whilst only 9% of the customers would look only at local suppliers.³⁷² Likewise, in case of a price increase of 5 -10%, customers would be ready to switch to any EEA or global supplier, regardless of its location, and would not limit its alternatives to local players.³⁷³ This is consistent with the fact that E-PVC is a more expensive

³⁶⁶ Reply of Vinnolit to question 10 - Phase I Questionnaire to customers (E-PVC) [ID2529].

³⁶⁷ Non-confidential version of agreed minutes of a conference call with Vinnolit dated 7 October 2013 ID3597.

³⁶⁸ Commission Decision of 30 January 2008 in Case No M.4734 *INEOS/Kerling*.

³⁶⁹ Commission Decision of 11 January 2013 in Case No M.6681 *Strategic Value Partners / Kloeckner Holdings*.

³⁷⁰ See replies to question 11 - Phase I Questionnaire to customers (E-PVC).

³⁷¹ See replies to question 11 - Phase I Questionnaire to customers (E-PVC).

³⁷² See replies to question 11 - Phase I Questionnaire to customers (E-PVC).

³⁷³ See responses to question 14 - Phase I Questionnaire to customers (E-PVC). In case of a SSNIP by their current E-PVC supplier 42% of the customers would try to source the product from any other suppliers located worldwide; 52% of the customers would try to source to product from any other supplier

product than S-PVC³⁷⁴ and therefore transport costs, which are similar to those of S-PVC (that is to say 5-10% of the sale price), represent a smaller proportion of the final price.

- (543) Similar indications have been provided by competitors, who emphasised the global scale of their businesses. Indications of the broader scope of the market compared to S-PVC can be drawn from the more differentiated location of customers for each of the Notifying Parties' and their competitors' plants.³⁷⁵
- (544) The Commission therefore concludes that for the assessment of this case the relevant geographic market for E-PVC is at least EEA wide. However, the assessment will be conducted only in the EEA market, since no affected market would arise in a hypothetical worldwide market.

8.11. Additives and technologies for the production of PVC

8.11.1. S-PVC technology

- (545) S-PVC technology is the information and intellectual property rights necessary to design and operate an EDC/VCM facility and it typically includes a basic design package, review of detailed design and construction and various other related services. The exact scope of the services provided will depend on the complexity of the project and the licensee's familiarity with the production process. S-PVC technology is generally supplied by S-PVC producers who have developed the technology themselves and are prepared to license it to third parties. The consideration for S-PVC technology services generally includes a (i) license fee, (ii) a fee for technical services and (iii) a daily rate for other services.

8.11.1.1. Relevant Product market

- (546) In the past the Commission has not determined the relevant product market for S-PVC technology licensing. The Notifying Parties submit that the relevant product market is S-PVC technology, comprising the design of an S-PVC plant with the license of any associated intellectual property rights and other associated service, such as technical support. That is because there is no substitute for S-PVC technology for customers building an S-PVC plant. The Notifying Parties also submit that there is no significant distinction between the S-PVC technologies offered on the market.
- (547) The Commission considers that, for the assessment of this case, the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

located anywhere in the EEA; 6% customers would look for a supplier located within a certain radius of distance (500-600 km) from their manufacturer's plant.

³⁷⁴ Average prices in the EEA for E-PVC in 2012 were EUR [...] t and EUR [...] t respectively for INEOS and Solvay, against EUR [...] t and EUR [...] t respectively for INEOS' and Solvay's S-PVC (EEA S-PVC prices are considered only to have an equivalent benchmark for comparative purposes).

³⁷⁵ For example Solvay produces E-PVC at its plants in Rheinberg, Germany, and Tavaux, France, whilst INEOS produces E-PVC at its plants in Stenungsund, Sweden, and Porsgrunn, Norway, and from these plants they serve the whole EEA.

8.11.1.2.Relevant Geographic market

- (548) In the past the Commission has not determined the relevant geographic market for S-PVC technology licensing. The Notifying Parties submit that, similarly to most technology licensing markets, the S-PVC technology is licensed globally. They submit, moreover, that INEOS supplies its technology globally, that is to say in the last five years INEOS has supplied customers in [...]*
- (549) The Commission considers that, for the assessment of this case, the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.11.2. *PVC additives*

- (550) PVC additives are chemical products which are added during the polymerisation of VCM to produce PVC. PVC additives help to stabilise and regulate the manufacture of PVC by ensuring that the PVC particles are of a regular size and that a build-up of polymers within the PVC reactor is prevented. PVC additives are manufactured from a number of different materials, depending on the use for which the particular additives are required.

8.11.2.1.Relevant Product market

- (551) In the past the Commission has not determined the relevant product market for PVC additives. The Notifying Parties submit that there is one single market for all PVC additives. However, they submitted market data for the various types of PVC additives identified by them, including anti-fouling PVC additives, primary suspending agents, secondary suspending agents and di-ethyl hexyl adipate ("DOA").
- (552) The Commission considers that, for the assessment of this case, the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.11.2.2.Relevant Geographic market

- (553) In the past the Commission has not determined the relevant geographic market for PVC additives. The Notifying Parties submit that PVC additives are supplied and purchased on a global basis. However, they submit also market data for an EEA-wide geographic definition.
- (554) The Commission considers that, for the assessment of this case, the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.12. S-PVC compounds

- (555) As indicated in Section 6.1, before S-PVC can be used in a number of applications it has to be compounded. S-PVC compounds are intermediate products between S-PVC and S-PVC end-products. S-PVC compounds are manufactured by blending additives such as pigments or plasticisers with S-PVC in order to confer the desired characteristics to the final product before it can be directly used in any end application.
- (556) Compounding is typically carried out by: (i) S-PVC converters, that is to say the end-product manufacturers; but also at the request of the S-PVC converters and in accordance with their formulae by: (ii) specialist independent compounders; or (iii) S-PVC manufacturers, such as INEOS and Solvay. According to the Notifying

Parties' estimates, more than 75% of compounding is carried out in-house by S-PVC converters and a very large number of companies in the EEA carry out compounding, either for their own use, for use by others or a mixture of the two.

8.12.1. *Relevant Product market*

- (557) The Commission has previously considered that S-PVC compounds constitute a separate product from commodity S-PVC.³⁷⁶ It also considered whether the market may be further divided into two distinct product markets: dry blend and gelled compounds, but the issue was ultimately left open.
- (558) The Commission considers that, for the assessment of this case, the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.12.2. *Relevant Geographic market*

- (559) In previous decisions,³⁷⁷ the Commission concluded that the market is wider than national while leaving open the exact scope of the market definition (NWE, WE or the EEA). The Notifying Parties submit that the relevant geographic market for compounds is at least EEA-wide but they provided data based also on the basis of regional relevant geographic market definitions.
- (560) The Commission considers that, for the assessment of this case, the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.13. **Cloromethanes and derivative products**

- (561) Cloromethanes are substances that are used as a precursor to the production of a number of other chemicals and in various applications as a disSolvayg agent. There are four types of cloromethanes: CM1, methyl chloride (chloromethane); CM2, methylene chloride (dichloromethane); CM3, chloroform (trichloromethane); and CM4, carbon tetrachloride (tetrachloromethane). The higher chloromethanes (methylene chloride, chloroform and carbon tetrachloride) are created within a single process, combining several interconnected chemical reactions which also result in some inevitable by-products, such as hydrogen chloride.

8.13.1. *Methylene Chloride*

- (562) Methylene chloride is a non-flammable, volatile, powerful solvent. It can be used for various applications, including as a solvent in the chemical and pharmaceutical industries, in the production of adhesives, for paint and varnish stripping. It can be sold in various grades.

³⁷⁶ Commission's Decision of 30 January 2008 in Case No. M.4734 *INEOS/Kerling*, Paragraph 41.
³⁷⁷ Commission's Decision of 26 July 2011 in Case No. M.6218 *INEOS/Tessenderlo Group S-PVC Assets*, Paragraph 75; Commission's Decision of 30 January 2008 in Case No. M.4734 *INEOS/Kerling*, Paragraph 165.

8.13.1.1.Relevant Product market

- (563) In a previous Commission decision³⁷⁸ the market investigation indicated that, although methylene chloride can be sold in different grades, it constitutes a single product market as the various grades are interchangeable both from a demand and a supply side. The Notifying Parties agree with this product market definition.
- (564) The respondents to the market investigation in this case largely confirmed the Notifying Parties' conclusion: in particular most of the producers indicated that they can easily switch production from one grade to another.
- (565) The Commission therefore concludes that for the assessment of this case methylene chloride can be considered a single product market.

8.13.1.2.Relevant Geographic market

- (566) The Notifying Parties submit that the relevant geographic market for methylene chloride is EEA-wide but also provided data based on regional basis and in some cases national relevant geographic market definitions.
- (567) In a previous decision³⁷⁹, the Commission concluded that the geographic market for methylene chloride is wider than national and likely EEA-wide. In this case, the vast majority of the customers who responded to the Commission market investigation indicated that the relevant geographic market is either EEA or world-wide, while all producers indicated that the appropriate geographic dimension is a world-wide market.
- (568) The Commission therefore concludes that for the assessment of this case the appropriate geographic market definition is at least EEA-wide.

8.13.2. Chloroform

- (569) Chloroform is a colourless non-flammable liquid that is predominately used as a feedstock in the chemical industry, mainly as a raw material for the production of hydrochlorofluorocarbon-22, but also to a small extent for orthoformate production. A very small amount of the total production of chloroform goes into non-feedstock applications as a processing solvent and extraction medium for pharmaceuticals, and in minor quantities as a laboratory reagent.
- (570) In a pure form, chloroform is unstable. Therefore stabilizers such as amylene or ethanol are added, which results in different grades of chloroform, each of which has a different properties and use.

8.13.2.1.Relevant Product market

- (571) According to the Notifying Parties, chloroform can vary in terms of purity and, from a demand-side perspective, customers have different requirements in terms of the addition of stabilisers depending on their specific needs.
- (572) However, the Notifying Parties submit that all EEA producers are able to meet the same high quality standards of purity and stabilisation that are required for their

³⁷⁸ Commission's Decision of 9 April 2002 in Case No M.2690 *Solvay/Montedison-Ausimot*, Paragraph 149.

³⁷⁹ Commission Decision of 9 April 2002 in Case No M.2690 *Solvay/Montedison-Ausimot*, Paragraph 152.

customers' applications. Moreover, the Notifying Parties argue that addition of stabilisers is a straightforward process and that insofar as they are aware, all the EEA suppliers of chloroform can and do supply chloroform with a range of levels of stabilisers. Finally, the Notifying Parties claim that time and cost of adding stabilisers to chloroform are negligible compared to the actual production of chloroform.

- (573) In the light of the high degree of supply-side substitutability, the Notifying Parties submit that, as far as the product market definition is concerned, chloroform should be considered as a single product market.
- (574) Although the Notifying Parties are not aware of the actual stabiliser content used by their competitors, the Notifying Parties estimate that more than 95% of total chloroform sales in the EEA consist of chloroform stabilised with 10-20 ppm amylene, which would be the narrowest possible market where their activities overlap.³⁸⁰
- (575) In the past, the Commission has not examined the market for chloroform. The respondents to the market investigation have not provided a clear indication as to whether there is a single product market for chloroform. From a demand-side, the majority of customers confirmed that they have different requirements in terms of the addition of stabilisers depending on their specific needs. However, on the suppliers' side, the replies to the market investigation do not rule out the existence of a certain degree of substitutability. For example, one competitor indicated that it could easily switch from producing one grade of chloroform to another in a reasonable time and without incurring significant costs, whilst another competitor indicated that if a distinction were to be drawn, it would be done according to the type of stabiliser used, namely amylene or ethanol.
- (576) The Commission considers that, for the assessment of this case, the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.13.2.2. Relevant Geographic market

- (577) Concerning the geographical dimension of the market, the Notifying Parties submit that the relevant market for chloroform is at least EEA-wide for the following reasons: (i) the large degree of uniformity in the product market for chloroform, (ii) the high levels of trade flows between EEA Member States and (iii) the fact that chloroform is easy to transport and that transport costs are not obstacle to either EEA or extra EEA trade. The Notifying Parties further explain that approximately 30% of chloroform produced in the EEA is exported outside the EEA.
- (578) The results of the market investigation confirmed the Notifying Parties' claims. Moreover, in response to the Commission's market investigation, most of the participants considered that the geographic market for chloroform is even wider than

³⁸⁰ INEOS produces pure chloroform, adding a minimum stabiliser of up to 10 ppm amylene to all volumes it produces. If a customer so requests, higher volumes of stabiliser can then be added at the point of loading a delivery, which is done on an order by order basis to meet customer needs. INEOS does not produce chloroform stabilised with ethanol. Solvay sells minimal amounts of chloroform on the merchant market: in 2012 it sold [...] * of 20 ppm amylene stabilised and [...] *kt ethanol stabilised.

the EEA, that is to say world-wide. All three competitors further acknowledged that chloroform can be transported world-wide and that their customers are indeed located world-wide.

(579) The Commission therefore concludes that for the assessment of this case the appropriate geographic market definition is at least EEA-wide.

8.13.3. *Carbon tetrachloride*

(580) Carbon tetrachloride ("CTC") is a chloromethane, the production, sale and use of which is restricted under Regulation 1005/2009 where it is identified as an ozone depleting substance. In its crude form it is only allowed to be sold as a feedstock for the production of perchloroethylene, for certain laboratory and analytical purposes and as a process agent for limited allowed uses (for example, cyclodime production). Limited volumes are also used as a raw material for the production of fluorochemicals. CTC is also used for the production of HFC-365mfc.

8.13.3.1. Relevant Product market

(581) In the past, the Commission has not examined the market for CTC. According to the Notifying Parties, there is no easy substitute for CTC in its use as a feedstock for fluorochemical and PCE production. Therefore the Notifying Parties submit that CTC constitutes a separate product market. The Notifying Parties also submit that because of the limitations in CTC usage, it can be assumed that there is no real CTC trade³⁸¹.

(582) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.13.3.2. Relevant Geographic market

(583) The Notifying Parties submit that the geographic scope of the CTC market is at least EEA-wide, as the products can be sold over large distances and are transported, usually in drums or containers, either by truck, rail or ship.

(584) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.13.4. *Perchloroethylene*

(585) Perchloroethylene ("PCE"), which is also known as tetrachloroethylene, is a non-flammable and non-ozone depleting solvent used in dry cleaning machines around the world and as a stain remover. PCE is also used to degrease metal parts in industries as diverse as electronics, aeronautics, automobiles, mechanical and electrical construction, and telecommunications. Finally, PCE is also used as an intermediate for the production of other products, with around half of PCE production used as an intermediate for fluorocarbons such as the refrigerant HFC-125.

³⁸¹ TecnonOrbichem Chloromethanes 2010-2022 report.

8.13.4.1.Relevant Product market

- (586) In the past, the Commission has not examined the market for PCE. The Notifying Parties submit that there is no easy substitute for PCE in its use in dry cleaning or metal degreasing or as an intermediate for the production of fluorinated chemicals. As a result, the Notifying Parties submit that PCE constitutes a separate product market.
- (587) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.13.4.2.Relevant Geographic market

- (588) In line with their proposal for CTC, the Notifying Parties submit that the geographic scope of the PCE market is at least EEA-wide, as the product can be sold over large distances and are transported, usually in drums or containers, either by truck, rail or ship.
- (589) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.13.5. *HFC-365mfc*

- (590) HFC-365mfc is a hydrofluorocarbon without ozone depletion potential, used mainly for foam blowing applications, such as the production of polyurethane foams but also on a limited basis in solvents or heat transfer fluids.

8.13.5.1.Relevant Product market

- (591) In the past, the Commission has not examined the market for HFC-365mfc.
- (592) The Notifying Parties submit that there are a number of substitutes for HFC-365mfc in foam blowing applications, notably HFC-245fa produced by Honeywell and certain hydrocarbons or "pentanes". According to the Notifying Parties, most polyurethane foam producers run a number of systems and are able to use more than one hydrofluorocarbon blowing agent: this ability to switch to other hydrofluorocarbon blowing agents is used as a negotiating advantage in price discussions. Therefore the Notifying Parties submit that HFC-365mfc does not constitute a separate product market, and that there is a single product market for all hydrofluorocarbon polyurethane foam blowing agents. Nevertheless the Notifying Parties recognize that it is more difficult for polyurethane foam producers to switch to a different blowing agent in one specific polyurethane system, which is designed and approved for a specific blowing agent package, so switching would require a customer to redesign and approve the new system.
- (593) In any event, the Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition

8.13.5.2.Relevant Geographic market

- (594) The Notifying Parties submit that the geographic scope of the HFC-365mfc market is likely to be worldwide. Solvay exports over [...] *% of its HFC-365mfc production outside the EEA and other hydrofluorocarbon polyurethane foam blowing agent producers, such as Honeywell, have a similar global focus. The product can be sold

over large distances and is transported, usually in drums or containers, by ship, truck and rail.

(595) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

(596) **Allyl chloride**

(597) Allyl chloride ("CAL") is a clear, colourless, flammable liquid which is produced via the chlorination of propylene. It is used mainly as an input in the production of epichlorhydrin as well as in water treatment, for the manufacture of pharmaceuticals and pesticides, and as a chemical intermediate for the production of silyl and brominated compounds.

8.13.6. *Relevant Product market*

(598) In the past the Commission has not taken a view on the product market definition in relation to CAL. The Notifying Parties submit that based on its distinctive characteristics and the absence of substitutes for its particular uses, CAL constitutes a separate product market.

(599) The Commission considers that for the assessment of this case the precise product market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

8.13.7. *Relevant Geographic market*

(600) The Notifying Parties submit that the relevant geographic market of the CAL market is world-wide, as the products can be sold over large distances and is transported, usually in drums or containers either by truck, rail or ship.³⁸²

(601) The Commission considers that for the assessment of this case the precise geographic market definition can be left open as the Transaction does not raise competition concerns irrespective of the precise market definition.

9. **COMPETITIVE ASSESSMENT**

9.1. **Commodity S-PVC - Assessment of likely horizontal non-coordinated effects in NWE**

(602) According to the Commission's Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings ("Horizontal Merger Guidelines"),³⁸³ a merger may significantly impede effective competition in the form of non-coordinated effects by removing important competitive constraints on one or more firms, which as a result of the merger would have increased market power.³⁸⁴

(603) The most direct effect of such a merger will be the loss of competition between the merging firms. For example, if prior to the merger one of the merging firms had tried

³⁸² For example, Solvay sells CAL from its plants in France and Germany in the [...]*. In 2012, Solvay sold more than [...] % of its merchant CAL sales outside the EEA.

³⁸³ OJ C 31, 5.2.2004, p. 5-18.

³⁸⁴ Horizontal Merger Guidelines, Paragraphs 22 and 24.

to raise its price, it would have lost some sales to the other firm. A merger between those two firms removes that particular constraint.³⁸⁵

- (604) Non-merging firms in the same market can also benefit from the reduction of competitive pressure which results from the merger, since the merging firms' price increases may switch some demand to the rival firms, which in turn may find it profitable to increase their prices, too. Such expected reactions by competitors may be a relevant factor influencing the JV's incentives to raise prices.³⁸⁶
- (605) A merger giving rise to such non-coordinated effects would significantly impede effective competition, in particular where it results in the creation of a dominant position of a single firm, one which typically would have an appreciably larger market share than the next competitor post-merger.³⁸⁷
- (606) According to the Horizontal Merger Guidelines, a number of factors, which taken separately are not necessarily decisive, may influence whether significant non-coordinated effects are likely to result from a merger. Not all these factors need to be present for such effects to be likely.³⁸⁸
- (607) In line with the Horizontal Merger Guidelines and its own practice, the Commission has conducted its investigation and assessment of the effects of the merger by focusing on the effects of the Transaction on the competitive structure of the market, INEOS' pre-existing market power, the constraint exerted by Solvay on INEOS pre-merger and the ability and incentives of other players located in NWE, in the EEA or in third countries to exert a sufficient constraint on the JV post-Transaction.
- 9.1.1. *The Transaction will result in the creation of a market leader with market shares well above 50% under all metrics, which is in this case an important first indication of the existence of a dominant position*
- (608) Although market shares, increments and concentration levels only provide "first indications" of market power and increases in market power, they are normally important factors in the assessment.³⁸⁹ This is particularly true in markets where the degree of product homogeneity is very high, such as Commodity S-PVC.³⁹⁰ Moreover, according to well-established case-law, very large market shares of 50% or more may in themselves be evidence of the existence of a dominant market position.³⁹¹
- (609) In this context, market shares offer a good proxy of market power and are very relevant for the assessment of this case. However, as already indicated, the Commodity S-PVC market features some differentiation factors. These pertain to the

³⁸⁵ Horizontal Merger Guidelines, Paragraph 24.

³⁸⁶ Horizontal Merger Guidelines, Paragraph 24 and Footnote 28.

³⁸⁷ Horizontal Merger Guidelines, Paragraph 25.

³⁸⁸ Horizontal Merger Guidelines, Paragraph 26.

³⁸⁹ Horizontal Merger Guidelines, Paragraph 27.

³⁹⁰ Commission's Decision of 7 November 2012 in Case No. M.6471 *Outokumpu/Inoxum*, Paragraphs 315 and 360 ("*The stainless steel industry is a mature, basic industry in which firms produce relatively homogeneous products. In this type of industry, firms' current market shares typically provide a reliable indication of their competitive positions in the future. Market shares and concentration levels therefore provide an important and strong first indication of market power in this case.*" (emphasis added))

³⁹¹ Horizontal Merger Guidelines, Paragraph 17.

geographic location of the production plants and to a lesser extent to the existence of different S-PVC grades or K-values. Also, the level of production capacity and its utilization rate constitute important elements. Therefore, a refinement of the competitive analysis shall be undertaken along these lines to fully reflect the competitive strengths of each market player.

- (610) With this caveat, in Sections 9.1.1.3. and 9.1.1.4., the Commission assesses the merchant market shares and the capacity shares of the combined entity. It also considers the increment brought about by the Transaction and the level of concentration in the market.
- (611) In doing so, the Commission uses the Notifying Parties' best estimates for the merchant market shares provided in the reply to the RFI of 18 December 2013. These figures exclude non-commodity S-PVC sales, consistently with the finding of a separate relevant product market for commodity S-PVC.³⁹²
- (612) Capacity shares are based on (i) the estimates submitted in the Form CO, that is to say capacity figures that suppliers located in NWE use to serve this area and also export markets and to produce commodity S-PVC and also products which do not belong to the commodity S-PVC market namely, speciality S-PVC, extender S-PVC and co-polymers, including Vestolit's capacity to produce HIS-PVC; and (ii) capacity figures submitted at the Commission's request by the Notifying Parties in the follow up reply to the RFI of 18 November 2013, that is to say figures that exclude Vestolit's production of HIS-PVC, Vinnolit's production of speciality and extender S-PVC (but not Vinnolit's production of co-polymers) and Solvay's production of fillers and co-polymers). This approach is the most conservative and in favour of the Notifying Parties.

9.1.1.1. INEOS is by far the largest and most important supplier

- (613) INEOS is the largest supplier of commodity S-PVC in NWE with merchant market shares in 2012 of [30-40]*%.
- (614) In 2012, INEOS sold in NWE nearly double the volume of Commodity S-PVC ([...]* kt) sold by second largest player, Solvay ([...]* kt). Moreover, in NWE INEOS' sales volume is almost as high as that of the second (Solvay) and third (Shin-Etsu) largest players combined.
- (615) INEOS is also the largest commodity S-PVC supplier in terms of capacity in NWE, operating a production capacity of [...]* kt/y. This accounts for (i) [30-40]*% of the total NWE capacity, if the Notifying Parties' figures in the Form CO are considered, that is to say figures including capacity used by other players to produce non commodity S-PVC, and (ii) [40-50]*% of the total NWE capacity, if only commodity S-PVC capacity is considered.
- (616) Moreover, INEOS is the supplier with the largest portfolio of plants, as emphasised by market players responding to the Commission's RFIs:

"INEOS did manage to gain a good plant portfolio by buying or taking over several PVC suppliers in the past. That includes the NorskHydro plants as well

³⁹² Only market shares by volume will be used with respect to Commodity S-PVC, given the commoditised nature of the industry and the fact that market shares by value would not be appreciably different.

as the LVM plants. After those transactions the market was even easier to control. The same applies to the location: by having a wide range of different companies included into INEOS the location choice is big"³⁹³

*"INEOS is the biggest in Europe, many plants, large product portfolio, they are concentrating production of grades in a limited number of plants (e.g. the K62 which was produced by LVM in Beek in Holland was quickly stopped and we were forced to approve a K-62 produced by INEOS in Stenungsund, Sweden"*³⁹⁴

*"... Only PVC producer left in the UK, providing significant leverage over local market."*³⁹⁵

*"Good geographical coverage in North-/West-/Central Europe. The only PVC producer with production sites in the Nordic countries (Scandinavia). Other PVC producers have no chance to compete with INEOS in Scandinavia and Finland as competitors' sites in that region disappeared through INEOS' acquisition of the Hydro Polymers/Kerling activities and the Finnplast production site in Finland was closed some years ago."*³⁹⁶

9.1.1.2. Solvay is the second largest player in NWE and the increment brought about by the Transaction is very high

(617) Solvay is the second largest player in the NWE market for commodity S-PVC with sales of [...] kt in 2012 and a market share of [20-30]*%.

(618) Solvay's production capacity amounts to [...] kt/y³⁹⁷ in NWE and accounts for [10-20]*% in 2012 of NWE capacity, if non-commodity S-PVC capacity is also considered. If non-commodity S-PVC is excluded, Solvay's production capacity in NWE then amounts to [...] kt/y and accounts for [10-20]*% of NWE capacity.

(619) Against that background, the market share increment resulting from the Transaction would be very significant.

9.1.1.3. The Transaction will create an undisputed market leader by merchant market sales

(620) The Transaction will combine the activities in the market for commodity S-PVC of INEOS and Solvay, the first and second S-PVC suppliers in NWE, creating an undisputed market leader with a significant gap in relation to other S-PVC suppliers.

(621) Post-Transaction, the JV will have a merchant market share of [50-60]*% in NWE. As indicated, market shares exceeding 50% already provide an indication that the Transaction might give rise to a dominant position. Shin-Etsu, the second largest player post-Transaction in terms of merchant sales, will lag significantly behind, with a market share of [10-20]*% in NWE.

³⁹³ Reply of Amer-Sil SA ("Amer-Sil", Luxembourg) to question 40 - Phase II New Questionnaire to customers (S-PVC) ID5172

³⁹⁴ Reply of IVC to question 40 - Phase II New Questionnaire to customers (S-PVC) ID4279

³⁹⁵ Reply of KP Films to question 40 - Phase II New Questionnaire to customers (S-PVC) ID 4237

³⁹⁶ Reply of Pipelife International GmbH ("Pipelife", Austria) to question 40 - Phase II New Questionnaire to customers (S-PVC) ID4684

³⁹⁷ According to the information provided in the Annexes to the Form CO.

- (622) The Notifying Parties' and their competitors' market shares based on sales volume are set out in **Table 8**.

**Table 8: Merchant Market Shares in Commodity S-PVC
in NWE by Volume in 2012**

Supplier	Sales (kt/y)	Sales (%)
INEOS	[...]*	[30-40]**%
Solvay	[...]*	[20-30]**%
Combined	[...]*	[50-60]**%
Shin-Etsu	[...]*	[10-20]**%
Kem One	[...]*	[5-10]**%
Vinnolit	[...]*	[5-10]**%
Anwil	[...]*	[0-5]**%
BorsodChem	[...]*	[0-5]**%
Ercros	[...]*	[0-5]**%
Vestolit	[...]*	[0-5]**%
Oltchim	[...]*	[0-5]**%
Fortischem	[...]*	[0-5]**%
Others	[...]*	[0-5]**%
Total market	[...]*	100%

Source: Notifying Parties' best estimates

- 9.1.1.4. The Transaction will also create an undisputed market leader with a significant gap to other suppliers in terms of capacity
- (623) Capacity market shares are particularly significant in homogeneous goods markets with fixed constraints on production capacity, the level of capacity controlled by each firm being an important parameter of competition. This is also in line with the Horizontal Merger Guidelines, where it is explained that "... *capacity constraints are more likely to be important when goods are relatively homogeneous ...*"³⁹⁸
- (624) In their economic submission,³⁹⁹ the Notifying Parties also adopt this view explaining that a good way of modelling this industry is by assuming that companies compete on prices subject to their capacity constraints. The existence of fixed capacity constraints creates the basis for companies holding and exerting market power. This stems from the fact that it is possible that one or more suppliers are needed in order to supply the level of demand that would prevail at competitive prices. This implies that in their absence a fraction of demand would not be served at

³⁹⁸ Horizontal Merger Guidelines, Paragraph 35.

³⁹⁹ CRA, "A Bertrand-Edgeworth model for the SPVC industry", 9 September 2013.

competitive prices. In this setting, companies can behave strategically and hold market power.⁴⁰⁰

- (625) The Transaction will create the undisputed market leader by capacity. With [...] kt/y in NWE, the capacity of the JV will be more than three times larger than the capacity of Kem One ([...] kt/y in NWE), the second largest player post-Transaction by capacity.
- (626) The Notifying Parties' and their competitors' capacity shares are set out in **Table 9**.

Table 9: Market Shares in Commodity S-PVC in NWE by Capacity in 2012

Supplier	Capacity (Kt/y)	Capacity (%)
INEOS	[...]*	[30-40]**%
Solvay	[...]*	[10-20]**%
Combined	[...]*	[50-60]**%
Shin-Etsu	[...]*	[10-20]**%
Kem One	[...]*	[10-20]**%
Vinnolit	[...]*	[10-20]**%
Anwil	[...]*	[0-5]**%
BorsodChem	[...]*	[0-5]**%
Ercros	[...]*	[0-5]**%
Vestolit	[...]*	[5-10]**%
Oltchim	[...]*	[0-5]**%
Fortischem	[...]*	[0-5]**%
Total market	4 690	100%

Source: Notifying Parties' best estimates

- (627) As shown in **Table 9**, the JV will have a capacity share in NWE of [...]*, which is in this case an important first indication of the existence of a dominant position.
- (628) It is also worth recalling that the capacity as set out in **Table 9** is the total capacity that S-PVC suppliers located in NWE use to serve the NWE market as well as markets outside the NWE and to produce commodity and non-commodity S-PVC.

⁴⁰⁰ Commission's Decision of 7 November 2012 in Case No. M.6471 *Outokumpu/Inoxum*, Paragraph 395 ("Indeed, in a market with relatively homogeneous goods, the competitive pressure on any given firm, and hence a firm's market power, depends inter alia on the level of production capacity of competitors and on whether competitors can enter or expand production within a short period of time to meet demand. The change in market structure resulting from the merger is greater the larger the transaction increment of capacity shares. This change may lead to an increase in market power for the merged entity and provide it with the ability and incentive to restrict competition, in particular through the creation of dominance."). See also Commission's decision of 30 September 2013 Case No. M.6850 *Marine Harvest/Morpol* (2013), Paragraph 76.

- (629) It is however possible that S-PVC suppliers might not have the ability or the incentive to redeploy capacity currently used for exports or for non-commodity S-PVC production in order to serve the NWE commodity S-PVC market.
- (630) At the Commission's request, the Notifying Parties have therefore also provided capacity figures which assume limited supply-side substitution between different types of S-PVC. In other words, it is assumed that S-PVC suppliers have limited ability to change their production mix of S-PVC product types. **Table 10** presents the best estimates of the Notifying Parties in case of limited supply side substitution. These estimates were obtained by subtracting the current production of non-commodity S-PVC from the total S-PVC production capacity. The main changes concern the capacity of Vinnolit, Vestolit and Solvay.

**Table 10: Market Shares in Commodity S-PVC
in NWE by Capacity in 2012
(assuming limited supply-side substitution)**

Supplier	Capacity (Kt/y)	Capacity (%)
INEOS	[...]*	[40-50]**%
Solvay	[...]*	[10-20]**%
Combined	[...]*	[60-70]**%
Shin-Etsu	[...]*	[10-20]**%
Kem One	[...]*	[10-20]**%
Vinnolit	[...]*	[5-10]**%
Anwil	[...]*	[0-5]**%
BorsodChem	[...]*	[0-5]**%
Ercros	[...]*	[0-5]**%
Vestolit	[...]*	[0-5]**%
Oltchim	[...]*	[0-5]**%
Fortischem	[...]*	[0-5]**%
Total market	4 440	100%

Source: Notifying Parties' best estimates

- (631) Under this scenario, four companies (INEOS, Solvay, Shin-Etsu and Kem One) would hold almost [90-100]**% of the capacity available for commodity S-PVC in NWE.
- (632) In any event, regardless of the assumption ultimately retained, the JV would have a capacity share of [60-70]**% or close to [60-70]**% in NWE, which is in this case an important first indication of the creation of a dominant position.

9.1.1.5. Concentration levels

- (633) The Commission is unlikely to identify horizontal competition concerns in a market with a post-merger Herfindahl-Hirschman Index ("HHI") below 1 000⁴⁰¹. Such markets normally do not require extensive analysis. The Commission is also unlikely to identify horizontal competition concerns in a merger with a post-merger HHI between 1 000 and 2 000 and a change in the HHI before and after the proposed concentration (the "delta") below 250, or a merger with a post-merger HHI above 2 000 and a delta below 150, except where special circumstances are present.⁴⁰²
- (634) With regard to merchant market shares, the post-Transaction HHI would amount to 3 881 in NWE, and therefore far above the threshold of 2 000. The delta would amount to 1 596, and therefore also far above the threshold of 150.
- (635) With regard to capacity shares, the post-Transaction HHI would amount to 3 784 in NWE, and therefore far above the threshold of 2 000. The delta would amount to 1 404 and, therefore, also above the threshold of 150. Assuming limited supply-side substitution, the post-Transaction HHI would amount to 4 109 in NWE and the delta would amount to 1 558.
- (636) Therefore, the Transaction significantly increases the already high concentration levels in the commodity S-PVC market. The presumptions set forth at Paragraphs 19 and 20 of the Horizontal Merger Guidelines do not apply in this case.

9.1.1.6. Notifying Parties' Response to the SO

- (637) The Notifying Parties have not disputed any of the findings referred to in Sections 9.1.1.1 to 9.1.1.5. in their Response to the SO. The Commission therefore considers that the Notifying Parties agree with its assessment of the effects of the Transaction on the structure of the market, in the NWE/NWE+ area.

9.1.1.7. Conclusion

- (638) Although market shares, increments and concentration levels only provide "first indications" of market power and increases in market power, they are normally important factors in the assessment. This is particularly true in markets where the degree of product homogeneity is very high, such as commodity S-PVC.
- (639) INEOS is the largest supplier of commodity S-PVC in NWE with market shares of [30-40]*% in 2012.
- (640) Solvay is the second largest player in NWE, with a market share of [20-30]*% in 2012.
- (641) The Transaction would combine the activities in the commodity S-PVC market of INEOS and Solvay, the first and second suppliers in NWE, creating an undisputed market leader with a significant gap in relation to other S-PVC suppliers under all metrics.
- (642) The JV would hold a [50-60]*% share of the NWE merchant market post-Transaction. The Transaction would also create the undisputed market leader in

⁴⁰¹ Horizontal Merger Guidelines, Paragraph 19.

⁴⁰² Horizontal Merger Guidelines, Paragraph 20.

terms of capacity, with a share of between [50-60]*% and [60-70]*% of the overall capacity installed in NWE.

- (643) The Commission therefore concludes that the Transaction will result in the creation of a market leader with market shares well above 50% under all metrics, which is in this case an important first indication of the creation of a dominant position.

9.1.2. *There is evidence that INEOS' current position in the NWE market can allow it to exercise some degree of market power*

- (644) In order to qualify the nature of the competitive dynamics in the industry and to establish a starting point for the assessment in this case, it is pertinent to qualify the existing market power of the Notifying Parties and, in particular, of INEOS as the current market leader.

- (645) The Horizontal Merger Guidelines specify that:⁴⁰³

"[t]hrough its control of mergers, the Commission prevents mergers that would be likely to deprive customers of these benefits by significantly increasing the market power of firms. By "increased market power" is meant the ability of one or more firms to profitably increase prices, reduce output, choice or quality of goods and services, diminish innovation, or otherwise influence parameters of competition."

- (646) The Horizontal Merger Guidelines further elaborates on the importance of market shares (and additions of market shares) as first indications of companies' market power:⁴⁰⁴

"The larger the market share, the more likely a firm is to possess market power. And the larger the addition of market share, the more likely it is that a merger will lead to a significant increase in market power. The larger the increase in the sales base on which to enjoy higher margins after a price increase, the more likely it is that the merging firms will find such a price increase profitable despite the accompanying reduction in output. Although market shares and additions of market shares only provide first indications of market power and increases in market power, they are normally important factors in the assessment."

- (647) The analysis of INEOS' pre-existing market power and of the role it plays in the S-PVC market pre-Transaction thus establish a useful framework for the assessment of the likely impact of the Transaction on competition.

- (648) INEOS is the current market leader in the NWE market for commodity S-PVC and controls close to [40-50]*% of total NWE capacity, with a [30-40]*% market share by sales volume. This Section will present the qualitative and quantitative findings of the Commission's investigation which demonstrate that INEOS' current market position pre-Transaction, although probably short of dominance, nevertheless allows it to exercise some degree of market power.

- (649) INEOS' current strong position in the market for commodity S-PVC is partially the result of two previous mergers. In 2008, INEOS acquired Kerling, a company with

⁴⁰³ Horizontal Merger Guidelines, Paragraph 8.

⁴⁰⁴ Horizontal Merger Guidelines, Paragraph 27.

approximately [...] kt/y of capacity, located in the United Kingdom and Scandinavia. In addition, in 2011, INEOS acquired Tessenderlo, a company with approximately [...] kt/y of capacity, located in Belgium, France and the Netherlands.

(650) The Commission cleared these concentrations on 30 January 2008 and on 26 July 2011 respectively, on the basis of the information available at that time.⁴⁰⁵

(651) An *ex-post* assessment of the competitive variables, in particular, price and quantities, in the relevant market and INEOS' commercial conduct following these mergers, and in particular the last merger could be informative regarding the assessment of the impact of consolidation in this industry and to analyse INEOS' current position, in particular, whether it holds market power.⁴⁰⁶ Evidence regarding the effect of past consolidation is also informative with respect to the likely effects of the capacity consolidation brought about by the present Transaction. Finally, as has been noted in Section 7.2., evidence regarding the price effects of past consolidation in the European S-PVC industry is also relevant for defining the geographic market.

9.1.2.1. Qualitative evidence from internal documents and the market investigation

(652) The qualitative evidence from the market investigation and INEOS' internal documents review supports the finding that INEOS holds some degree of market power in the NWE S-PVC market, in particular during the period following the INEOS/Tessenderlo merger, when INEOS reached the strong market position that it currently holds.

(653) In 2007, before the acquisition of Kerling, INEOS set out its purpose for future acquisitions in a presentation entitled "ChlorVinyls acquisition strategy", which states that [...].⁴⁰⁷ This suggests that INEOS aimed at achieving greater market power through acquisition of rival companies. Moreover, INEOS seems to consider that a market share of [30-40]% already grants such benefit.

9.1.2.2. Shift in focus in INEOS' internal documents towards a 'pricing power' strategy after the INEOS/Tessenderlo merger

(654) INEOS acquired the Tessenderlo business in the course of 2011. After that acquisition, INEOS developed and implemented projects aimed at adjusting the combined operations with a view to improving profitability, among which was a new pricing policy aimed at achieving higher margins and prices.

⁴⁰⁵ Commission's Decision of 26 July 2011 in Case No. M.6218 *INEOS/Tessenderlo Group S-PVC Assets* and Commission's Decision of 30 January 2008 in Case No. M.4734 *INEOS/Kerling*. The clearance decisions were *inter alia* based on the assumption that competitors' spare capacity will act as a sufficient competitive constraint on INEOS. However, as will be explained in Section 9.1.2.8., the Commission has found evidence that the degree of competitors' spare capacity available at the time has not prevented INEOS to raise prices of commodity S-PVC in NWE notably after the Tessenderlo merger. In this case, therefore, the Commission has undertaken a more refined analysis of overcapacity, and in particular of the rival's incentives to use such spare capacity.

⁴⁰⁶ See by analogy Section 2.1.1. of the United States Horizontal Merger Guidelines: "*Evidence of observed post-merger price increases or other changes adverse to customers is given substantial weight.*"

⁴⁰⁷ INEOS' internal document, "INEOS ChlorVinyls Acquisition Strategy" of 9 May 2007, Page 3, INEOS SET5 14 11 RFI 00000008.

- (655) In a presentation called "Tessengerlo Meeting" from August 2012, in which INEOS top management was involved (including the CEO of INEOS Chlor Vinyls), INEOS explains that [...]*.⁴⁰⁸ The Commission considers that as an indication that INEOS indeed understood that a higher market share achieved with the INEOS/Tessengerlo merger could lead to price improvements for INEOS. Additional explanations provided by INEOS to the Commission regarding these statements do not plausibly invalidate such interpretation.⁴⁰⁹
- (656) Indeed, numerous other internal documents of INEOS outline the approach INEOS adopted in the course of 2012 the INEOS/Tessengerlo merger was implemented and which it labels as "pricing power." This strategy is aimed at achieving higher prices and thus better margins in the market for commodity S-PVC.
- (657) In a presentation of August 2012 entitled "[...]*", INEOS describes this pricing power approach. This document sets the scene by noting, among other things, that "[...]*". It then lists a number of "[...]*". This document also reports on the progress made by INEOS to date, including "[...]*". The next steps include a more refined pricing strategy aimed at "[...]*".
- (658) This new approach is also contained in other strategy documents. In a September 2012 presentation, a slide entitled Vinyls Business Projects for example summarizes "pricing power" as "[...]*".⁴¹⁰ The same document also outlines a marketing plan for the business, which is [...]*.⁴¹¹
- (659) In a November 2012 presentation entitled "Vinyls Strategy",⁴¹² INEOS highlights that [...]*.⁴¹³ The same document also specifies that [...]*. This document also confirms that [...]*.

⁴⁰⁸ INEOS' internal document, "Tessengerlo Meeting" of 12 August 2012, Slide 20, INEOS_SET4_14_11_RFI_00000976.

⁴⁰⁹ INEOS claims in its Reply to the Letter of Facts (paragraph 4.2 (ii)) that the statement refers to "the expectation that a higher volume of sales after Tessengerlo will improve INEOS' overall customer mix and average price levels". However, the statement of the internal document does not point to any particularly advantageous customer mix of the Tessengerlo business, but to a higher market share. At the Oral Hearing, the CEO of ChlorVinyls stated that the quote refers to a desire to grow sales and market shares after the acquisition, which would have lead to improved prices, because "*on average, improved market share in Europe is better then export netback*" (Recording of the oral hearing of 10 February 2014, closed session 2, at 3min05). This explanation clarifies the view of INEOS top management on the fact that European margins are on average better then export margins. However, it is unclear how the price improvements could have been 'on track' via an increase of market share since INEOS market shares have been actually falling after the Tessenrelo aquisition. Also, this explanation does not really address how the increased market share achieved in the context of the Tessenrelo acquisition can be leveraged into price improvements.

⁴¹⁰ INEOS' internal document, "INEOS ChlorVinyls Strategy Day, Rolle" of 4 September 2012, Slide 50, INEOS_14_11_RFI_00000136.

⁴¹¹ INEOS' internal document, "INEOS ChlorVinyls Strategy Day, Rolle" of 4 September 2012, Slide 45, INEOS_14_11_RFI_00000136.

⁴¹² INEOS internal document, "Vinyls Strategy" of November 2012, INEOS_SET4_14_11_RFI_00001039.
⁴¹³ The Executive Summary of the document contains a heading which states "[...]*".

9.1.2.3. *INEOS applied its "pricing power" strategy in its commercial conduct and recognized its benefits*

- (660) The application of the "pricing power" approach of INEOS and the related focus on margins and firm pricing is evident from numerous internal documents, mainly emanating from INEOS sales teams.
- (661) Additional evidence of the adoption by INEOS of a revised pricing strategy from the first half of 2012 onwards and its application in the commercial conduct is also contained in the S-PVC pricing notes produced by INEOS on a monthly basis in order to set its monthly pricing policy. These pricing notes provide [...]*,⁴¹⁴ and explain [...]*.⁴¹⁵
- (662) As of November 2012, the pricing notes mark the establishment of list prices, published on INEOS' website, which replaced the monthly increase or decrease indications of INEOS list prices contained in previous pricing notes. As part of the setting of the list prices, the pricing note of November 2012 highlights [...]*.⁴¹⁶
- (663) [...]* are also introduced in the pricing notes from April 2013 onwards, [...]*. Similarly, in a January 2013 document titled Sales and Marketing Update,⁴¹⁷ INEOS mentions [...]*.⁴¹⁸

9.1.2.4. *INEOS in its internal documents clearly recognised the benefits of the implementation of its 'pricing power' strategy.*

- (664) An October 2012 presentation related to pricing - and containing the following identifier "[...]*" - notes "[...]*".⁴¹⁹ This coincides with the period when the new price strategy was implemented.
- (665) A December 2012 presentation entitled "Vinyls Strategy" also highlights [...]*,⁴²⁰ and projects [...]*.
- (666) A January 2013 Sales and Marketing Update contains [...]*.⁴²¹ This document notes that "[...]*" and identifies a [...]*.⁴²²

⁴¹⁴ April 2012 Pricing Notes reports [...]*".

⁴¹⁵ The Pricing Note for May 2012 headlines [...]*". The same document notes that "[...]*". Similar messages about [...]* are contained in later Pricing Notes (for example for July 2012 and September 2012).

⁴¹⁶ List prices were set again in the December 2012 Pricing Note (which was accompanied by a letter sent out to customers explaining the reason for the price change compared to November), and in similar monthly Notes for the period April – November 2013. The April-June Pricing Notes also contain [...]* is also explicitly noted in the August and September Pricing Notes.

⁴¹⁷ INEOS' internal document, INEOS_SET4_14_11_RFI_00001097.

⁴¹⁸ This [...]* approach is already evident from an October 2012 document entitled "[...]*" Document INEOS_SET4_14_11_RFI_00001018.

⁴¹⁹ INEOS' internal document, "Vinyls Update - Pricing" of October 2012, INEOS SET4 14 11 RFI 00001022.

⁴²⁰ INEOS' internal document, "Vinyls Strategy" of December 2012, INEOS SET4 14 11 RFI 00001075.

⁴²¹ January 2013 Vinyls Sales and Marketing Update Document INEOS 14 11 RFI 00000216.

⁴²² In the same slide, [...]*. The same presentation describes that [...]*. Variation in margins due to costs and demand changes (for example overall demand reduced between 2011 and 2012) and naturally put downwards pressure on prices) does not imply that INEOS does not hold market power, or that its policy aimed at stronger pricing power is not effective. This issue is discussed below in Section 9.1.2.10. in connection to the Notifying Parties' arguments on declining margins.

- (667) In a December 2012 document entitled "Market numbers for S-PVC", INEOS [...]*.⁴²³ The document states: "[...]".
- (668) In a July 2013 commercial report, INEOS explains that [...]*.⁴²⁴
- 9.1.2.5. INEOS as a market leader finds it more profitable to sell at higher prices in NWE even if it sells less volume on that core market, and has to rely more on exports
- (669) INEOS' pricing power approach on the NWE market in the period after the INEOS/Tessenderlo merger naturally had an impact on the level of INEOS' volumes sold on that market.⁴²⁵ Increased pricing levels imposed by INEOS on customers are naturally associated with lower sales, as not all customers are willing to pay higher prices. This reduction in NWE sales could nonetheless be profitable for INEOS given the price improvements obtained on its remaining NWE customer base which has reached a significant volume after the INEOS/Tessenderlo merger.⁴²⁶
- (670) As outlined in Section 9.1.2.1., INEOS documents indicate that the new "pricing power" approach of INEOS was associated with a shift of focus from volumes focus towards margin.⁴²⁷
- (671) INEOS' internal documents further indicate that INEOS was aware of the trade-off between volumes and prices on the NWE market for commodity S-PVC. In the context of the "pricing power" approach developed after the INEOS/Tessenderlo merger, its focus has been on maximising margins, even if the higher prices charged implied selling less volume in this core market. To keep operating rates high, these lost volumes had to be exported, even though exports typically involve significantly lower margins.
- (672) In an email of November 2013, an INEOS middle manager reports to the top management about [...]*.⁴²⁸
- (673) In its sales and marketing update from January 2013,⁴²⁹ [...]*. This again indicates that INEOS was aware that its new pricing power behaviour entails lower customer volumes, over and above volumes lost due to a general market-wide contraction in demand.

⁴²³ INEOS' internal document, "Market numbers for sPVC" of 14 December 2012, Page 1, INEOS_SET4_14_11_RFI_00001057.

⁴²⁴ INEOS' internal document, "INEOS Chlorvinyls Ltd Commercial Report - July 2013", INEOS_SET4_14_11_RFI_00001309.

⁴²⁵ A more detailed quantitative description of the evolution of INEOS's sales in NWE and in export markets is set out in Section 9.1.2.9.

⁴²⁶ Horizontal Merger guidelines, Paragraph 27: "*The larger the increase in the sales base on which to enjoy higher margins after a price increase, the more likely it is that the merging firms will find such a price increase profitable despite the accompanying reduction in output.*"

⁴²⁷ The "[...]" presentation mentions that "[...]"; The "[...]" presentation of November 2012 mentions "[...]". Additionally, see also an internal email exchange [...]". INEOS responds that "[...]". (INEOS_SET4_14_11_RFI_00000947). Focus on margins improvement (or price actions) is also evident from numerous pricing notes and other documents presented the section on qualitative evidence on market power.

⁴²⁸ Internal INEOSs email from product manager Vinyls of 11 November 2013 sent to numerous INEOS employees (including the CEO of INEOS Chlor Vinyls) reporting on recent market developments (Document INEOS SET4 14 11 RFI 00001353)

⁴²⁹ INEOS' internal document, "Sales and Marketing Update" of January 2013 INEOS_SET4_14_11_RFI_00001097.

- (674) The Notifying Parties in their statements to the Commission deny that INEOS lost customers due to pricing behaviour and state that the fall in INEOS' sales in NWE, and an increase in export sales "*was a commercial and necessary response to the collapse in demand.*"⁴³⁰ In particular, they argue that, in the aftermath of the INEOS/Tessenderlo merger, INEOS lost a market share of about [...] percentage points between 2011 and 2012, which was due to customers switching away from the INEOS/Tessenderlo entity to maintain their multi-sourcing needs.⁴³¹ The Notifying Parties also allege INEOS "*inability to place further product in the EEA and NWE*"⁴³² stating that INEOS has "*consistently fought to increase its European and NWE market share.*"⁴³³
- (675) However, this is clearly contradicted by INEOS internal documents. The above mentioned analysis of INEOS' top 20 customers, as well as another May 2012 sales presentation pertaining to Germany, which accounts for about [...] of the NWE market and [...] of INEOS NWE sales in 2012, prove this point.⁴³⁴ That sales presentation quantifies the effect of the multi-sourcing customers moving away after the INEOS/Tessenderlo merger and analyses the market situation in the first half of 2012.
- (676) The Notifying Parties themselves point to this quantification in support of their claim that INEOS has lost share due to switching away of the customers, referring to "[...]*." However, the same slide refers to a further "[...]*" and "[...]*."⁴³⁵ That again indicates that INEOS' loss of volumes and market share in 2012 was much more driven by its price behaviour than the customers' desire to switch away after the consolidation.⁴³⁶ The presentation itself makes this clear: "[...]*."
- (677) The same May 2012 sales presentation discusses [...] ⁴³⁷ This again shows that INEOS lost customer volumes consciously in NWE due to its firm pricing and anticipated that this may bring further volume losses. Interestingly, this also indicates that in some periods INEOS was even able to retain customer volumes despite its firmer pricing policy.⁴³⁸
- (678) The Notifying Parties argue that INEOS' full commitment to the NWE market and EEA in general is demonstrated essentially by statements from its internal documents [...] ⁴³⁹ [...] ⁴⁴⁰

⁴³⁰ Response to the SO, paragraph 3.27.

⁴³¹ Response to the SO, paragraph 3.52.

⁴³² Response to the SO, paragraph 3.29.

⁴³³ Response to the SO, paragraph 3.33.

⁴³⁴ INEOS' internal document, "SPVC Sales Meeting Düsseldorf, Country Presentation Germany" of 23 May 2012, INEOS_SET4_14_11_RFI_00000894.

⁴³⁵ Reply to the Letter of Facts, page 5.

⁴³⁶ [...] as referred to two Recitals above is not further specified, but it seems plausible that this refers to the same reason.

⁴³⁷ INEOS' internal document, "SPVC Sales Meeting Düsseldorf, Country Presentation Germany" of 23 May 2012, Slide 7, INEOS_SET4_14_11_RFI_00000894.

⁴³⁸ The Notifying Parties explain that the reference to "[...]*" in the slide refers to the fact that, [...]*".

⁴³⁹ Response to the SO, paragraph 3.33. The Notifying Parties notably point to a strategy presentation where they highlight that "[...]*". The same presentation also mentions "[...]*" and "[...]*" as already referred to in this Decision. Note that documents referred to under (i) to (iv) of the response to the SO

- (679) These arguments, however, do not invalidate the conclusion that INEOS was putting increased pressure on prices in NWE and that its pricing policy had a significant impact on its reduced sales and market share in NWE. The Commission does not dispute the fact that INEOS makes more sales in NWE than in other regions, by virtue of the location of its plants, nor that higher market shares in NWE would generally be beneficial for INEOS, implying that INEOS may have had an interest to maintain or increase its NWE volumes. Nevertheless, this conduct crucially depends on the price concessions that INEOS would have to make to gain these volumes. Lowering the higher price levels established by INEOS' firm pricing policy may have an impact on the overall prices in NWE and may bring down margins on INEOS remaining significant volumes in NWE. Therefore, INEOS' commercial conduct struck a balance between higher market shares objectives and a pricing policy aimed at higher prices and margins, favouring a pricing policy aimed at higher margins in particular after the INEOS/Tessenderlo merger.
- (680) This is consistent with INEOS' internal documents, such as the August 2012 presentation for the "Tessenderlo meeting", which involved the company's CEO. This document states [...]*.⁴⁴¹ In their Reply to the LoF,⁴⁴² the Notifying Parties emphasise that this presentation refers [...]*. However, the presentation makes clear [...]*. In any event, [...]*.
- (681) Indeed, another INEOS internal document of September 2013 states that [...]*" and, subsequently, it recommends to "[...]".⁴⁴³
- (682) In a July 2012 presentation where INEOS' expressly states that "[...]". In the same document, it is also acknowledged that "[...]".⁴⁴⁴
- (683) These documents strongly indicate that INEOS considered it more beneficial to keep higher price levels in NWE as opposed to increasing NWE volumes by dropping its prices. The excess volumes corresponding to the sales INEOS lost due to its firm pricing policy together with other excess volumes were then redirected to exports.
- (684) Indeed, export markets are a complementary outlet for INEOS and other S-PVC suppliers and provide for a flexible balancing tool, which allows INEOS to find an outlet for its S-PVC production and keep operating rates high. An INEOS

relate to documents pre-INEOS/Tessenderlo merger and are this not relevant for the company's conduct after that period.

⁴⁴⁰ Response to the SO, paragraph 3.34 (iii) and 3.35 and Reply to the Letter of facts, paragraph 4.2. A similar argument [...]*.

⁴⁴¹ INEOS' internal document, "Tessenderlo Meeting" of 12 August 2012, INEOS_SET4_14_11_RFI_00000976.

⁴⁴² LoF, Paragraph 4.2.

⁴⁴³ INEOS' internal document, "Vinyls Update INEOS Norge Board" of 19 September 2013, Slide 14, INEOS_SET4_14_11_RFI_00001163; and INEOS' internal document, "sPVC Sales meeting" of 13 June 2013, Slide 23, INEOS_SET4_14_11_RFI_00001251 ("[...]").

⁴⁴⁴ INEOS' internal document, "Delivering the 2012 Budget" of 16 July 2012, Slide 2, INEOS_SET4_14_11_RFI_00000945.

presentation [...]*,⁴⁴⁵ while several other internal documents such as the January 2013 "Sales and Marketing Update" [...]*.⁴⁴⁶ [...]*

- (685) The benefit of maintaining higher price levels, while decreasing sales in Europe in the period post-INEOS/Tessenderlo merger is therefore very clear to INEOS. It is apparent from the same internal document referred at Recital 680 that in 2012 (with a loss of market share of [...] percentage points compared to 2011) there was a [...]*. "

Figure 14: [...]*

[...]*

Source: INEOS

- (686) The document thus makes clear that [...]*. This suggests that the 2012 focus on margins, which was consistent with the "pricing power approach" applied in that year, was indeed successful. The same document recommends that [...]*.⁴⁴⁷ In respect of the sales strategy for the rest of the world, the document also suggests to "[...]*." This is consistent with using the export markets as outlet for volumes not sold in the core INEOS markets to keep capacity utilisation rates high.
- (687) Interestingly, in an earlier internal document of INEOS from 2011,⁴⁴⁸ the balance between sales in core markets and exports is summarised as follows: "[...]*"⁴⁴⁹ [...]*, as shown in **Figure 5**.⁴⁵⁰

Figure 15: INEOS internal slide on balance [...]*

[...]*

Source: INEOS

- (688) The evidence from the internal documents therefore shows that INEOS "pricing power" approach was comprised of two limbs (i) achieving higher price levels in its core NWE market, and (ii) while sacrificing volumes on the same market, which were then redirected to exports. The same evidence also demonstrates that maintaining higher price levels in NWE was more profitable for INEOS than increasing its NWE sales at lower price levels. Such conduct - adopted in particular in the aftermath of the INEOS/Tessenderlo merger - is consistent with a finding that INEOS holds some degree of market power.

⁴⁴⁵ INEOS' internal document, "Vinyls Update – Pricing" of 16 October 2012, Document INEOS_SET4_14_11_RFI_00001022.

⁴⁴⁶ For example, INEOS's January 2013 Sales and Marketing Update [...] INEOS_SET_4_14_11_RFI_00001097.

⁴⁴⁷ *Ibidem*, slide 24.

⁴⁴⁸ INEOS' Document entitled "Export" of May 2011, Document INEOS_14_RFI_00000245

⁴⁴⁹ [...] page 20)

⁴⁵⁰ Page 7 of the INEOS' document entitled "Export" of May 2011, Document INEOS_14_RFI_00000245. The same slide is also depicted in a later presentation from 12 October 2011 entitled PVC Marketing (Document INEOS SET5 14 11 RFI 00000134, page 38)

- 9.1.2.6. INEOS as a market leader also assumes its "price leadership" role on the market which is recognised by the customers
- (689) INEOS new pricing approach taken in the course of 2012 encompassed public announcements of headline price increases, and later even publication of price lists on INEOS website. The Commission considers that this increases transparency on the market, and facilitates the position of INEOS as a price leader in the industry.
- (690) INEOS internal documents confirm this. For example, April 2012 pricing notes [...] ⁴⁵¹ The pricing note for the next month, May 2012, [...] ⁴⁵² During that month, ICIS reported that 3 producers, [...] ^{*}, announced target increases of EUR 50/tonne for PVC grades. [...] ^{*}.
- (691) An INEOS' internal document dating October 2012 notes [...] ⁴⁵³
- (692) In a December 2012 strategy document [...] ⁴⁵⁴
- (693) With respect to the introduction of INEOS' own price list, the Notifying Parties submit in their Response to the SO that this decision was only an effort to introduce a more robust price benchmark than the then prevailing IHS index price. According to the Notifying Parties, the IHS index price suffered from major flaws recognised by the industry. While this may be partially true, the publication of price changes and the introduction of its price list demonstrate a more active approach to pricing with a view to enhancing price transparency and facilitating INEOS' mission to take "[...] ^{*}",
- (694) The Notifying Parties also claim that [...] ^{*}, ⁴⁵⁵ [...] ^{*}. In order for INEOS' pricing strategy to be successful, it is not required to match the published price lists. The Pricing Notes used by INEOS typically allow for pricing flexibility that implies that [...] ^{*}. However, public list prices may well facilitate the communication with the market in the context of a firmer "pricing power" policy. For example, a price list may be used to set a higher starting point for negotiations with customers. In any event, it is not the "success" of list prices as such which determine the presence of market power.
- (695) In the context of the market investigation, customers stressed on numerous occasions INEOS' market power, the particular role it plays in the price formation process and its position as a market leader and price leader. When asked whether some S-PVC suppliers were perceived as holding market power, INEOS received almost 50 votes, with Solvay closely following suit with almost 40 votes. ⁴⁵⁶ The gap between INEOS and to a lesser extent Solvay and the third S-PVC supplier perceived to hold market power, that is to say Shin-Etsu, is striking. Shin-Etsu only received around one fifth

⁴⁵¹ INEOS' internal document, "S-PVC Pricing Note Europe" of April 2012, Page 1, INEOS SET5_14_11_RFI_00000171.

⁴⁵² The pricing note states that that "[...] ^{*}".

⁴⁵³ INEOS "pricing questions and answers", Document INEOS_SET4_14_11_RFI_00001018

⁴⁵⁴ "Vinlys Strategy" of December 2012

⁴⁵⁵ Notifying Parties claim that whilst over the last 11 months INEOS' list price has increased by [...] ^{*}, INEOS' average price on European negotiated sales has increased by [...] ^{*}.

⁴⁵⁶ Replies to question 71 - Phase I Questionnaire to customers (S-PVC) and question 72- Phase II Questionnaire to new S-PVC customers. 92% of the respondents indicated that according to them INEOS holds market power.

of the votes received by INEOS. For the sake of completeness, it is worth noting the gap between the JV and Shin-Etsu post-Transaction would be absolutely remarkable.

- (696) More than 90% of the customers refer to INEOS' role in the price formation process of the industry.⁴⁵⁷ The following examples are illustrative for this purpose:

"Everybody will tell you that INEOS being the biggest want to play the role as a market lead and to that extent, they "publish" on their website every month their "new list price for the next month". So all their competitors "know what is being told to customers"."⁴⁵⁸

*"INEOS - as a European market leader take the front job in a lot of cases. Implementation of their "own" released price list. Smaller players follow trend settled by EU market leader."*⁴⁵⁹

*"INEOS as market leader sets the trend monthly. INEOS even publish their own market price info on their website and base their monthly price negotiations against that instead of independent index providers."*⁴⁶⁰

*"INEOS: by being already now the largest producer Ineos' pricing influences to an important extent the IHS market index and by this directly or indirectly the price formation process, even when the average market prices behave differently."*⁴⁶¹

*"Over the past few years INEOS have put out numerous Press Releases indicating there will be larger than justifiable price increases for S-PVC, the competitive nature of the market has generally reduced the level of success these Press Releases have had, though increases have always been attained. If we were to lose this competitive nature of the market there would be no chance for these efforts to be resisted in future and we fear that INEOS would have complete control over the market pricing."*⁴⁶²

- (697) Therefore, the qualitative evidence from the market investigation is clearly in line with INEOS' internal documents. INEOS is not only perceived as the market leader but also as being extremely active in - and taking "responsibility" for - setting the price levels of the industry.

- (698) Finally, industry reporters also stress INEOS' leading position. The IHS industry report of August 2013 emphasise INEOS' "discipline" of exporting excess material (and keeping lower inventories) in order to keep availability tight, and the impact of this conduct on prices:

"Another key reason for both raising prices and margins is due to producers' discipline, especially on the part of market leader INEOS. Producers have been very adept at keeping inventories low by turning plant rates down and exporting excess volumes. This is very intelligent in a depressed market."

⁴⁵⁷ Replies to question 71 - Phase I Questionnaire to customers (S-PVC) and question 72- Phase II Questionnaire to new S-PVC customers.

⁴⁵⁸ Reply of IVC to question 71 - Phase I Questionnaire to customers (S-PVC). ID2421

⁴⁵⁹ Reply of Nexans to question 71 - Phase I Questionnaire to customers (S-PVC). ID5360

⁴⁶⁰ Reply of Oy Primo to question 71 - Phase I Questionnaire to customers (S-PVC) ID5418.

⁴⁶¹ Reply of Renolit to question 71 - Phase I Questionnaire to customers (S-PVC) ID5370.

⁴⁶² Reply of Synseal to question 71 - Phase I Questionnaire to customers (S-PVC) ID5356.

According to market reports, inventories dropped in six of the last seven months. With producer-held stock at almost barely manageable levels producers are not motivated to sell additional volumes. But they have been very motivated to move prices up just a bit faster than escalating feedstock costs."⁴⁶³

(699) [...]*

"[...]".⁴⁶⁴

9.1.2.7. Conclusion

(700) The Commission considers that the qualitative evidence listed and summarised in Section 9.1.2.1. supports the finding that INEOS currently holds a position which, although probably short of market dominance, allows it to enjoy some degree of market power in the NWE market for commodity S-PVC, in particular after the establishment of its leading position following the INEOS/Tessenderlo merger.

(701) In the course of 2012, after the INEOS/Tessenderlo merger was implemented, INEOS adopted a pricing strategy internally labelled as "pricing power" aimed at achieving higher prices and thus better margins in the NWE market for commodity S-PVC. That pricing power approach was associated with sacrificing volumes of sales in the NWE market and redirecting those volumes to exports. The evidence also demonstrates that maintaining higher price levels in NWE was more profitable for INEOS than increasing its NWE sales at lower prices.

9.1.2.8. Evidence on price effects following past consolidation

(702) This Section presents the empirical analysis on price effects of the INEOS/Kerling and INEOS/Tessenderlo mergers. It shows that in the past, and in particular following the INEOS/Tessenderlo merger of 2011, INEOS has managed to increase prices in the NWE region relative to the other EEA regions where it sells commodity S-PVC, and that those price increases were larger than those of its competitor Solvay. These results are fully in line with the assessment of customers' observations and INEOS's internal documents presented in Section 9.1.2.1., together with the evidence regarding volume reductions in NWE presented in Section 9.1.2.2. The detailed empirical analysis is presented in **Annex A**, which contains three parts: (i) descriptive evidence on S-PVC market trends, including simple average price changes after the INEOS/Kerling and INEOS/Tessenderlo mergers; (ii) empirical analysis of diverging regional price trends; and (iii) empirical analysis of merger price effects.

(703) The quantitative evidence on the price effects contained in **Annex A** is based on the systematic analysis of the transaction data provided by the Notifying Parties.⁴⁶⁵ The

⁴⁶³ IHS Market Report of 30 August 2013, Page 23.

⁴⁶⁴ INEOS' internal document, "INEOS Chlorvinyls Ltd Commercial Report - July 2013", Document INEOS_SET4_14_11_RFI_00001309.

⁴⁶⁵ The dataset used for the analysis includes a large number of real price data recorded in INEOS' and Solvay's invoices (in excess of 200,000 invoices) covering all external transactions of the Notifying Parties between 2007 and 2012. The price data contained in this data is based on "Net Invoice Values". This data is the same used by INEOS in its internal assessments of prices, margins and Key Performance Indicators (for example, see "VINYLs Strategy Presentation" of November 2012, slides 26-29, [...]*, Document INEOS_SET4_14_11_RFI_00001039).

transaction data were complemented by information provided by INEOS and Solvay on costs and margins, and also featured details of the individual transactions such as the location of customers and exact products sold.⁴⁶⁶ The variable of interest in the empirical analysis is the delivered price of INEOS' commodity S-PVC.⁴⁶⁷ Prices are derived from invoices by dividing the net invoice value with the delivered volume of commodity S-PVC. Prices are observed monthly for a given customer purchasing a given K-value of commodity S-PVC from a given plant of either Solvay or INEOS. Customers are identified by their name and location.

- (704) Ex-post price changes after the two past mergers involving INEOS are assessed using a standard difference-in-differences method ("diff-in-diff"). This methodology looks at prices of the merging firms in the relevant geographic market relative to a benchmark and compares them before and after the merger. Therefore, the diff-in-diff method looks at changes in relative prices similarly to the relative price comparisons of the descriptive part of Annex A. Specifically, the diff-in-diff method estimates merger effects by calculating how the average price difference from the benchmark changed after the merger.⁴⁶⁸
- (705) The diff-in-diff method is employed in order to differentiate between alternative explanations for price increases after the mergers, because prices can change for reasons other than the exercise of market power. Other influencing factors could be the adverse demand or supply shocks. In order to differentiate between alternative explanations the ex-post price changes of INEOS have to be evaluated relative to a benchmark that was affected by the same influencing factors except for the mergers. In the analysis presented in this Section, first INEOS' prices outside NWE are used as a benchmark against which potential price effects in NWE are evaluated. This comparison controls for common supply and demand shocks across the regions. Next, in order to further control for differential demand and supply trends across different regions, INEOS' relative price changes in NWE are benchmarked against Solvay's relative price changes.⁴⁶⁹

⁴⁶⁶ INEOS and Solvay provided information on costs, caustic soda, EDC and chlorine margins. This extensive dataset was prepared by the Notifying Parties and the Commission and the analysis is based on a version of the dataset where each observation is identified by the name of the customer, the city of the customer, the K-value of the S-PVC sold, the plant of INEOS or Solvay that produced the product and the month when the transaction took place. Besides these identifiers listed the following variables were used for the analysis: (1) Net invoice value that includes transportation costs and is the invoice value after deducting the discounts; (2) Volume sold; (3) Variable manufacturing costs; (4) Caustic soda, EDC and chlorine margins; and (5) INCO terms of the transaction. The Commission shared with the Notifying Parties the overall dataset on which the results of the quantitative analysis are based prior to the SO, and provided the documentation how it technically constructed the dataset and implemented the empirical analysis.

⁴⁶⁷ In order to control for differential demand trends across different regions the difference-in-differences method was also carried out using the price premium of INEOS over Solvay as the outcome variable.

⁴⁶⁸ The Commission has used this methodology to determine competitive effects in a number of recent airline mergers, including *Ryanair/Aer Lingus I* (M.4439), *Ryanair/Aer Lingus III* (M.6663), *Delta/Virgin* (M.6828) and *US Airways/American Airlines* (M.6607). In its judgement on *Ryanair v Commission* (Case T-342/07), the General Court discusses the empirical methodology used by the Commission in *Ryanair/Aer Lingus I*, accepting its validity (see Paragraphs 139-183).

⁴⁶⁹ Moreover, price effects were also separately estimated for customers buying from INEOS only and customers purchasing both from INEOS and Solvay.

- (706) As discussed in Section 7.2.2. INEOS' average prices increased in NWE by [5-10]*% more than in RoE after the INEOS/Tessenderlo merger. The merger price effect estimates confirm this evidence and indicate a [0-5]*% to [5-10]*% price increase as a result of the INEOS/Tessenderlo merger.⁴⁷⁰ This implies that INEOS already holds some degree of market power within the NWE market, because it was able to raise its prices after the INEOS/Tessenderlo merger. The same robust results cannot be established for the INEOS/Kerling merger. Although there is an indication of price increases after that merger as well, the evidence is inconclusive, because the merger was very close to a large demand shock that is indicated by both the price and volume data.
- (707) The fact that market power effects can be established more firmly for the latest merger (that is to say the INEOS/Tessenderlo merger) than for the earlier one (that is to say the INEOS/Kerling merger) is in line with the fact that with the second merger acquired an even stronger position in the market relative to that obtained after the acquisition of Kerling, with greater potential to exercise market power. Moreover, this finding is also in line with the documentary evidence reviewed in Section 9.1.2.2. on the pricing power strategy adopted by INEOS in 2012, after the INEOS/Tessenderlo merger.
- (708) The merger effect estimates also show that Solvay is a strong competitive constraint, on INEOS, because customers who purchase from both Notifying Parties were affected significantly less by the merger.
- (709) In the Response to the SO, the Notifying Parties object that the diff-in-diff analysis does not bear scrutiny and submit three main arguments.⁴⁷¹ First, the Notifying Parties argue that other EEA regions cannot serve as a benchmark for relative price changes in NWE, because they are different geographic markets and, therefore, conditions of competition are different. Second, the Notifying Parties argue that on a balance of probabilities the Commission failed to establish a causal connection between the price increases in NWE and the mergers and that alternative explanations for the price increases are more likely. Finally, the Notifying Parties submit technical arguments regarding the lack of validity of the diff-in-diff method in the form of placebo and linear trend tests, the choice of weighting of the transaction data, and the choice and sensitivity of the benchmarks.⁴⁷²
- (710) The Commission rejects the first argument of the Notifying Parties, because geographic markets other than NWE are valid benchmarks for the purpose of the diff-in-diff method as long as they satisfy the common trend assumption. A valid benchmark for the diff-in-diff method has to satisfy two basic criteria. First, it has to be unaffected or at least less affected by the merger than NWE. Therefore, only geographic markets other than NWE are suitable as a benchmark for INEOS' prices,

⁴⁷⁰ The Notifying Parties argue that any merger effect is mitigated any customers switching to other suppliers. The merger effect estimates take this switching into account. Therefore the findings indicate increasing prices despite of the switching evidence presented by the Notifying Parties.

⁴⁷¹ The Notifying Parties' response to the SO, Paragraph 1.8.

⁴⁷² The Notifying Parties' sent an additional submission on the difference-in-differences method after the response to the SO on 17.03.2014. This provides new arguments especially concerning the sensitivity of the benchmark. **Annex A** discusses the arguments of the Notifying Parties in this additional submission in detail and also provides the Commission's response.

otherwise no price differences could be established. Second, the benchmark should be sufficiently similar to NWE so that it reflects price developments of NWE in the absence of the merger. For the diff-in-diff method, this second requirement can be summarised in the common trend assumption. The Commission provides evidence based on demand trends, treatment-control price differences as well as the placebo tests proposed by the Notifying Parties, all of which confirm the validity of the common trend assumption for the RoE benchmark. That evidence and the common trend assumption in general are discussed in detail in [Annex A](#).

- (711) The Commission also rejects the second argument submitted by the Notifying Parties. The Commission tests the sensitivity of its results against the possibility of an asymmetric crisis shock, diverging construction trends, changes in the unit of the price comparison (fixed effects), alternative weights, changes to the benchmark and changes to the treatment group. The finding of an approximately [0-5]*% price effect due to the INEOS/Tessenderlo merger is solid after conducting all those tests. The Commission also employs a triple differences method to further control for possible asymmetric regional shocks. The results of this method consistently provide an approximately [0-5]*% lower bound for the INEOS/Tessenderlo merger effect. The Commission considers that the causal link between the mergers and the price increases can be established not only by the econometric evidence on price effects, but also by considering the broader set of evidence (including the evolution of INEOS's sales in NWE and the qualitative evidence on the pricing power strategy of INEOS). These points are set out in more detail in [Annex A](#).
- (712) Finally, the Commission does not consider the third argument of the Notifying Parties to be valid. The Commission illustrates in [Annex A](#) that, when applied correctly, the placebo tests confirm the Commission's own diagnostic tools (that is, the treatment-control graphs and the regional demand trend comparisons). The Commission also illustrates in [Annex A](#) that the triple differences method addresses the same concern as the linear trends and it is preferable and more general than linear trends. With regards to the choice of weighting, the Commission shows in [Annex A](#) that unweighted results are not reliable. Lastly, the Commission shows that the Commission's results are not sensitive even to substantial changes to the benchmark. Those arguments are discussed in detail in [Annex A](#).
- (713) In conclusion, based also on the detailed arguments set out in [Annex A](#), the Commission is of the view that the Notifying Parties' arguments do not invalidate the Commission's empirical analysis of the price effects of previous mergers. Therefore, the Commission considers that the price effect estimates are valid and indicate to the existence of some degree of market power in the hands of INEOS after the INEOS/Tessenderlo merger.

9.1.2.9. Evidence on the Evolution of Domestic Sales and Exports

- (714) The price increases in NWE discussed in Section 9.1.2.8. are consistent with INEOS's output data, which shows that INEOS significantly reduced its sales in NWE during the 2007-2012 period, and at the same time significantly increased its exports to lower-priced markets. This evidence is in line with INEOS exercising some degree of market power in NWE by increasing prices, and as a result sacrificing sales in NWE. This evidence is also consistent with the documentary evidence reviewed above.

- (715) The trends in INEOS's sales over time should be considered separately for INEOS' different portfolios, because the composition of the company changed with the past mergers (that is to say the INEOS/Kerling merger and the INEOS/Tessenderlo merger). The plants belonging to INEOS pre-2007 and the plants acquired from Kerling in 2008 reduced their NWE sales by approximately [40-50]*% from 2007 to 2012 (from [...] in 2007 to [...] in 2012). The same evidence is confirmed for the portfolio of Tessenderlo plants pre- and post-INEOS/Tessenderlo merger: in the year following the merger (that is to say in 2012) NWE sales dropped by more than [20-30]*% (from [...] in 2011 to [...] in 2012). The output of the INEOS 2007 and Kerling cohorts combined dropped by [20-30]*% (from [...] to [...]) from 2011 to 2012. Those sales trends are confirmed in the data submitted by the Notifying Parties in the Response to the SO, which show that INEOS' EEA sales (including LVM) dropped from [...] in 2007 to [...] in 2013.⁴⁷³
- (716) The Notifying Parties' data equally shows that during the same period exports outside the EEA increased from [...] to [...].⁴⁷⁴ The analysis further shows that for the INEOS pre-2007 and Kerling cohorts exports increased by over [90-100]*% (from [...] in 2007 to [...] in 2012). The increase in export is almost entirely due to greater export to customers outside the EEA, which increased by more than [...] times over the period, from [...] to [...]. For the Tessenderlo cohort exports grew by [50-60]*% from 2011 to 2012 (from [...] to [...]). In the case of Tessenderlo, exports to the RoW increased [...] than the total increase in exports outside NWE (that is to say exports to RoW increased from [...] to [...] between 2011 and 2012).
- (717) INEOS' NWE sales reduction during the 2007-2012 period effectively took place in three well defined periods: in the years following the INEOS/Kerling and INEOS Tessenderlo mergers (2008 and 2012) and between September 2008 and December 2009, when demand collapsed during the financial crisis. INEOS reduced its sales in NWE by [...] in 2008 and by [...] in 2012, which are the years after the INEOS/Kerling and INEOS/Tessenderlo mergers. These volume drops are actually larger in magnitude than the volume drop in the worst year of the crisis (a reduction of [...] in 2009).
- (718) Since the output reduction after the INEOS/Kerling merger took place in close proximity with the volume reduction after the demand shock, it is not possible to fully disentangle the two reasons for the volume change, and to distinguish between a market power effect and a demand effect. This is also reflected in the lack of robustness of the Kerling price effect results discussed in Section 9.1.2.8. That is, the potential merger effect coincides with price movements due to the demand shock and it is not possible to identify the two separately in a reliable way.
- (719) However, the volume reduction after the INEOS/Tessenderlo merger took place during a period when no major demand shock was present and prices were actually increasing. Therefore, the finding of a [0-5]*% price effect for the INEOS/Tessenderlo merger is consistent with a significant volume reduction by INEOS in NWE, in a relatively stable demand period.

⁴⁷³ Response to the SO, Figure 3.3.

⁴⁷⁴ Ibid.

- (720) Moreover, the demand shock due to the crisis cannot fully explain INEOS' volume reductions between 2007 and 2012, because the same reduction is not observed for Solvay in the same period, although Solvay was exposed to the same demand shock. During the 2007-2012 period the cohort of Solvay's plants located in NWE showed a stable pattern of sales within NWE, with only a slight reduction between 2007 and 2012 (a [0-5]*% fall from [...] to [...]*), in [...] contrast with INEOS' pattern. Similarly, Solvay increased its exports outside NWE only by [10-20]*% over this period (from [...] to [...]*), which is [...] lower than the corresponding increase by INEOS. The same is true for exports outside the EEA, which in Solvay's case increased by only [30-40]*% (from [...] in 2007 to [...] in 2012), [...] less than the INEOS' increase. This conclusion is true even if one considers the peak of exports by Solvay during this period ([...] in 2011).
- (721) The same relative patterns can be observed over the shorter 2011-2012 period, when comparing Solvay's NWE cohort to the current cohort of INEOS plants. During this period, Solvay increased its NWE sales by [0-5]*% (from [...] to [...]*), and reduced its exports (with a reduction from [...] to [...]*). Solvay's exports outside the EEA fell by [50-60]*% over this period (from [...] to [...]*). This pattern of sales is [...] different to INEOS' pattern, described in Recitals 711-713.
- (722) The pattern of NWE sales for the three cohorts of INEOS' plants discussed in Recitals 711-713, and for Solvay's NWE plants is shown in **Figure 16**.

Figure 16: Trends in INEOS and Solvay NWE Sales, 2007-2012

[...]*

Source: Notifying Parties' data

- (723) INEOS' behaviour is not only different from that of Solvay, but also differs from all other smaller NWE competitors with the exception of Kem One. In fact, the data provided by the Notifying Parties for the period 2008-2012 shows that Shin-Etsu, Vestolit and Vinnolit have a very similar behaviour to Solvay. Over the period between 2008 and 2012, Shin-Etsu, Vestolit and Vinnolit show a stable and consistent pattern of sales into NWE, whilst Kem One actually displays declining sales over that period.⁴⁷⁵
- (724) Overall, the Commission considers that the adverse demand shock that has affected demand for commodity S-PVC in NWE can only provide a partial explanation of INEOS' NWE and export sales pattern, given that such a demand effect would have affected Solvay, as well as INEOS' other competitors, in a symmetric way.⁴⁷⁶

⁴⁷⁵ The Notifying Parties explains that they could not provide data for the year 2007 due the lack of information. For this analysis, the absence of the 2007 does not invalidate the results, since the INEOS data shows a reduction in NWE sales also during the shorter 2008-2012 period, including (as noted in Recital 713) the 2011-2012 period around the INEOS/Tessenderlo merger.

⁴⁷⁶ A negative demand shock can in principle explain an increase in exports such as the one observed for INEOS since a demand reduction in a given market (for example, NWE) can lead a firm to reduce its sales from that market, and increase sales to another, lower-priced, market (for example, exports), even in the absence of market power. This can be the case for example if the negative demand shock relaxes the overall capacity constraint faced by a firm, inducing it to direct more of its output to lower-priced markets. A similar effect can be expected in the presence of operational constraints on minimum plant

Moreover, an adverse demand shock cannot account for the relative increase in INEOS' prices over the relevant period, in particular for the period after the INEOS/Tessenderlo merger. Contrary to the evidence, prices should have decreased in response to a demand reduction.

- (725) By contrast, the exercise of some degree of market power by INEOS provides a coherent explanation for the evidence on relative sales patterns and on prices. In the presence of some degree of market power, ownership of additional commodity S-PVC capacity in NWE provided INEOS with higher incentives to increase prices, and as a result to reduce its output in NWE, since the higher prices would be earned on a larger base of “infra-marginal” sales, thus increasing INEOS' profits. Evidence from internal documents also shows that INEOS firmer pricing approach in NWE was profitable, even if it involved selling lower volumes in NWE. Furthermore, the evidence suggests that the resulting reduction in output in NWE in turn provided INEOS with greater incentives to increase its export sales in the short term, in the same way that an adverse demand shock would, even if significantly lower margins were earned on these sales relative to NWE sales.
- (726) The data on INEOS' prices summarised in **Annex A** indicates that INEOS' shift in sales away from the NWE market and towards greater exports has not been accompanied by higher relative prices in the export markets (RoW) relative to NWE, but rather the opposite. Moreover, the margin data shows [...]*.⁴⁷⁷ [...]*.⁴⁷⁸
- (727) The additional effect of higher prices and lower sales by INEOS in NWE is an increase in the demand faced by its competitors including Solvay most notably, as the second largest player in the market. The sales data indicates that this demand increase allowed INEOS' competitors to increase prices and output at the same time, relative to a scenario where INEOS would have exercised less or no market power.
- (728) An explanation of the evidence on prices and quantities that is based on the exercise of some degree of market power in the hands of INEOS can therefore account for both the evidence on relative prices and for the different sales patterns observed for Solvay and INEOS, that is to say relatively higher domestic sales, and relatively lower export sales.
- (729) The Commission therefore considers that the asymmetric NWE sales and export patterns of INEOS and Solvay, particularly when considered in conjunction with the empirical evidence on higher prices obtained by INEOS in NWE in the recent past, and evidence on lower margins in export sales compared to NWE sales provides additional evidence that INEOS has exercised some degree of market power in the NWE market, following recent consolidation in the industry (in particular after the INEOS/Tessenderlo merger). This conclusion is fully consistent with the qualitative

production (for example including operational constraints of the upstream EDC/VCM plants, as confirmed by the Notifying parties in the response to the RFI of February 2014).

⁴⁷⁷ The fact that [...] explicitly noted in the Kerling Annual Report for 2012 [...] (see page 1 of the Report). The relevant quote is as follows: "[...]".

⁴⁷⁸ The Commission has also performed the Kolmogorov-Smirnov test on the NEW and RoW price distributions. This is a formal test that aims at establishing the equality of two distributions. The Commission has performed that test in order to test the equality of the NWE and RoW price distributions. The test rejects the equality of the NWE and RoW price distributions at any conventional significance level.

evidence arising from INEOS' internal documents explained in Section 9.1.2.1., which shows that INEOS' commercial conduct showed a firm pricing policy aimed at maximising margins at the expense of volumes during 2012 through the exercise of greater "pricing power."

- (730) In addition to sales patterns related to exports, the Commission observes that INEOS has closed down S-PVC production capacity (the closure of the Barry plant in the United Kingdom in 2010 and of Runcorn in 2013). INEOS also divested Vinyls Italia in 2009 (accounting for [...] kt of capacity), which was closed down shortly after the acquisition by the new owner.⁴⁷⁹ In that regard, an INEOS internal document of April 2009 titled "[...]" mentions in relation to a strategy for United Kingdom the following: "[...]"⁴⁸⁰
- (731) The Commission accepts that plant closures by INEOS have not led to significant output reductions, as the total NWE output remained unaffected by the closures (and hence closures cannot be considered as the 'cause' for relative prices to rise in NWE).⁴⁸¹ However, in a market context where reliance on export sales can also be utilised as a more flexible and immediate mechanism to replace volumes sold into the NWE market, plant closures are not required in order to reduce sales in NWE. In fact, INEOS has closed plants during a period preceded by significant reduction in NWE output, and a significant increase in export sales, which is the case both for the closures of Barry in 2010, and of Runcorn in 2013.
- (732) In other words, after output into NWE is significantly reduced and sales diverted to lower-margin export markets, fixed costs savings from the closure of capacity may compensate for foregoing the profits earned on marginal export sales (assessed across the INEOS portfolio of plants as a whole). This conduct is not inconsistent with the optimal profit-maximising goals which were pursued by INEOS.⁴⁸² The Commission therefore concludes that evidence of a lack of output reduction following a closure cannot be used by the Notifying Parties to prove lack of market power in the hands of INEOS.

9.1.2.10. Assessment of the Notifying Parties' additional arguments in the Response to the SO in relation to output reduction in NWE and export patterns.

- (733) In the Response to the SO, the Notifying Parties object that the Commission fails to take into account several factors that drive differences between different suppliers' export and domestic sales patterns. Therefore, the Notifying Parties claim that the fact that INEOS exported [...] more than other competitors does not in any way

⁴⁷⁹ Even if the decision to close the plant is attributable to the new owner, as the Notifying parties emphasise, [...]. Document INEOS 14 11 RFI 00000001

⁴⁸⁰ Document INEOS SET4 14 11 RFI 00000364, Page 19

⁴⁸¹ As demonstrated by the Notifying Parties in the Response to the SO. Paragraphs 3.59-3.64.

⁴⁸² INEOS has also argued that it has closed down plants as a response to reduction in demand and only high costs plants were closed. The relevance of the reduction in demand is already discussed in the main text. The Commission does not dispute that the highest cost plants were closed, but does not accept that this is evidence of competitive behaviour by INEOS and of the lack of market power. It is economically rational to close the highest-cost plants where plant closures are justified by a growing reliance on low-margin exports (in a context where at least part of the increase of export sales is the result of volumes lost in NWE due to the imposition of higher prices).

provide evidence of INEOS' market power. To support this conclusion, the Notifying Parties submit three main arguments.

- (734) First, the Notifying Parties claim the increase in exports was a rational response to market conditions, namely, the collapse in demand for commodity S-PVC in NWE since 2007.⁴⁸³ The Notifying Parties further argue that if INEOS had not increased exports to compensate for its inability to place further product in the EEA and NWE, the alternative would have been further plant closures in order to maintain reasonable levels of capacity utilisation.
- (735) The Notifying Parties support this argument by stating that this was also confirmed by the Commission's market investigation. In particular, the Notifying Parties make reference to the replies provided by Ercros and Shin-Etsu, which both confirmed that their main rationale for exporting is to maintain higher operating rates. Furthermore, the Notifying Parties quote minutes of the conference call with Kem One, where Kem One acknowledges that in order to maintain operating rates in the current market conditions, it resorts to exports.⁴⁸⁴
- (736) Second, the Notifying Parties argue that prices outside the EEA can be (and often are) higher than prices in the EEA and, therefore, exporting can be a perfectly rational strategy. Similarly, they also submit that low profit sales exist both in the EEA and in export markets, and that INEOS is optimally trading-off across these marginal sales.
- (737) Third, the Notifying Parties claim that a key reason for the differences between INEOS' and Solvay's trends in EEA sales is the loss of demand suffered by INEOS as a result of customer switching after the mergers with Kerling and Tessenderlo as customers choose to maintain a multi-sourcing strategy to avoid overdependence on a single supplier.⁴⁸⁵ The Notifying Parties submit that development in the Notifying Parties' market shares clearly shows the importance of this effect.⁴⁸⁶ According to the Notifying parties, another important reason that differentiation between INEOS and Solvay export behaviour is their plant characteristics, for example, access to bagging facilities and proximity to a port. The Notifying Parties conclude that not only as a

⁴⁸³ In this respect the Notifying Parties add that INEOS was in a different position to its competitors, in particular, since it lost substantial sales immediately after the INEOS/Tessenderlo merger when customers switched substantial volumes to other suppliers to re-adjust their procurement portfolio.

⁴⁸⁴ The Notifying Parties' response to the SO, Paragraph 3.31.

⁴⁸⁵ The Notifying Parties' response to the SO, Paragraph 3.51.

⁴⁸⁶ In this respect, the Notifying Parties point out that following the INEOS/Tessenderlo merger, absent customer switching, INEOS would have expected a significant increment in EEA market share for commodity S-PVC - and indeed its market share increased from roughly [20-30]*% in 2010 to more than [30-40]*% (including Tessenderlo) in 2011. The Notifying Parties claim that in the following year, as customers switched to maintain their multi-sourcing, this share fell back to less than [30-40]*% in 2012 - losing approximately [...] percentage points of EEA demand. To put this in context, had INEOS maintained its [30-40]*% share it would have had around [...]kt of additional sales (that is to say an increase in its actual 2012 EEA sales of [10-20]*%). Indeed, the losses started even in 2011, and were in some cases compensated by volume gains at other customers. INEOS estimates that its total volume losses are likely to have been even higher. By contrast, SolVin's EEA share was relatively stable (falling from [20-30]*% in 2010 to [10-20]*% in 2011, before increasing again to [20-30]*% in 2012) - and similarly there is evidence that other suppliers (in particular Shin-Etsu and Vinnolit, but also KEM ONE, Vestolit, Anwil and non-EEA imports) were also beneficiaries from INEOS' loss, according to the Notifying Parties.

matter of principle, but also as a matter of practical fact, the difference between INEOS and Solvay export patterns cannot provide evidence of any increase in market power.

- (738) The Commission is of the view that the arguments submitted by the Notifying Parties do not defeat the Commission's conclusion in relation to INEOS' export behaviour as compared to that of Solvay. In fact, those patterns provide additional evidence of some degree of market power in the hands of INEOS, even before the implementation of the Transaction. In the following Recitals, the Commission addresses in detail the arguments submitted by the Notifying Parties.
- (739) With regard to the first argument, the Commission acknowledges the reduction in demand due to the financial crisis - as it did in the SO. However, the fact remains that INEOS and its competitors reacted in a very different way to the same demand reduction, which should have in principle affected all competitors symmetrically. For instance, during the crisis neither Solvay nor any other significant competitor in NWE (except Kem One) reduced sales in NWE anywhere close to the extent that INEOS did, even if those companies may also have used exports to keep utilisation rates high.⁴⁸⁷
- (740) As a consequence, the Notifying Parties are implicitly arguing that the crisis has had a different effect on INEOS than it had on its competitors. They have not, however, articulated the reasons why such a differential effect of a macroeconomic shock should exist. The Commission takes the view that there is no reason why a macroeconomic shock should impact competitors in such a different manner. In addition, INEOS continued to reduce its NWE sales [...] between 2011 and 2012 (by [20-30]*%), while the reductions in demand were more moderate compared to the earlier years of the crisis (a 6% demand reduction between 2011 and 2012).⁴⁸⁸ This shows that adverse aggregate demand conditions cannot be the primary explanatory factor for INEOS' sales behaviour. Indeed, the documentary evidence presented in Section 9.1.2.1. confirms that INEOS pricing behaviour in 2012 had a significant impact on its loss of volumes.
- (741) INEOS's implicit contention that exports were the only alternative option to plant closures in order to keep plant utilization rate high is also questionable. It is plausible that INEOS could have sold more in NWE and EEA as opposed to exporting by accepting lower margins in the domestic market. Indeed, players that are smaller than INEOS appear to find such a strategy rational as they have reduced sales in NWE much less than INEOS over the recent past. However, given INEOS's significant position in commodity S-PVC in NWE, a strategy premised on higher NWE sales

⁴⁸⁷ Based on the data on sales to NWE from 2008 to 2012 provided by Notifying Parties, Shin Etsu sold respectively in NWE [...]kt, [...]kt, [...]kt, [...]kt and [...]kt, Vestolit [...]kt, [...]kt, [...]kt, [...]kt and [...]kt, Vinnolit [...]kt, [...]kt, [...]kt, [...]kt, [...]kt and Kem-One [...]kt, [...]kt, [...]kt, [...]kt, [...]kt. On the basis of this data it is clear that all the main suppliers did not decrease sales to NWE with the only exception of Kem One, which however faced a very specific situation linked to insolvency. Vestolit has also decreased sales to NEW but its sales are very limited.

⁴⁸⁸ Total demand in Western Europe dropped by 6% between 2011 and 2012, whilst INEOS's sales in NWE fell by [...] more (that is to say [20-30]*%) over the same period. Over the longer 2011-2013 period, the INEOS EEA sales data provided by the Notifying Parties in the Response to the SO (Figure 3.3) show a reduction of [20-30]*%, whilst according to IHS total demand over this period (for West and Central Europe combined) fell by 6%.

but lower prices would not have been optimal for INEOS. This is because accepting lower prices in order to maintain or gain new customers would also lead to lower margins for INEOS on at least some of its existing customers' base, that is to say a loss of margins on "infra-marginal" customers. The qualitative evidence in Section 9.1.2.1, shows that INEOS profit-maximising strategy post-INEOS/Tessenderlo merger was to keep prices high in its core domestic market, which in turn means that INEOS needed to export a significant share of its production.

- (742) As for the Notifying Parties' second set of arguments on relative prices and margins in NWE and in the export markets, it is recalled that the Notifying Parties have accepted the existence of regional price differences between NWE and other regions, including both RoE and RoW - as set out in Section 7.2.2., in particular that prices and margins are typically significantly higher in the domestic (NWE) market compared to the RoW. Data presented at Recital 722 shows that prices and margins are significantly higher in NWE compared to exports. Furthermore, INEOS' internal documents report [...]*.⁴⁸⁹
- (743) Consistently with Recital 738, in 2012 [...]*. This evidence shows that a large majority of the sales redirected from NWE to exports was sold below prevailing prices in NWE. However, despite the significant price differential in favour of NWE sales, INEOS has shifted significant volumes from NWE to exports and has done so to a much greater extent than its competitors.⁴⁹⁰
- (744) In terms of the relative prevalence of low-margin sales, the Commission acknowledges that low-profit sales do exist in both NWE and in exports markets. However, as discussed in the Recital 739, the prevalence of these sales is much higher in export markets than in NWE. The fact that some customers in NWE (or EEA) are paying prices that are in line with limited volumes of top-priced customers in export markets does not imply that INEOS' export behaviour can be interpreted as a competitive reaction to lower demand. Nor can it be interpreted as suggesting, as submitted by the Notifying Parties, that INEOS is seeking to obtain customers with the best margins available to make a contribution to its fixed costs, regardless of where they are located.⁴⁹¹
- (745) The existence of customer heterogeneity in NWE (for example, in terms of location and buyer power) can account for the fact that some customers in the NWE pay relatively low prices, and that the range of export and NWE prices therefore overlap.⁴⁹² This feature of the market however does not imply that INEOS would be incapable of placing more output in NWE, had it not pursued its "firm pricing power" policy.

⁴⁸⁹ See Footnotes 602 and 639.

⁴⁹⁰ The fact, that as argued by the Notifying Parties, prices are different across regions for reasons that are linked to the specificity of the demand (such as security of supply smaller customers sizes etc.. see paragraph 3.44 of the Response to the SO) is not disputed by the Commission but does not imply the absence of some degree of market power in the hands of INEOS. Despite of the different characteristics of demand, INEOS appears to have pursued a strategy where significant volumes of sales have been shifted to the low priced market rather than the reverse.

⁴⁹¹ Paragraph 3.47 of the Response to the SO.

⁴⁹² See at Recital 722.

- (746) In addition, the argument made by the Notifying Parties in relation to the existence of low-margin transactions in both NWE and export markets appears to suggest that only very low-price customers in NWE should be seen as “marginal” and therefore as customers over which effective competition takes place, whilst higher-price customers would be “infra-marginal” and therefore not subject to the same degree of price competition. According to this interpretation, at the margin INEOS would be trading off marginal domestic sales and export sales, at broadly similar prices. The Commission however considers that all or most customers in NWE should naturally also be seen as contestable, in the sense that by offering lower prices INEOS could either capture more customers, or supply a higher share of the demand of a given customer at the expense of rival competitors. In the presence of some degree of market power, INEOS's incentives to engage in such conduct are however mitigated by the loss of infra-marginal revenues that would be associated with more intense price competition. The presence of this infra-marginal effect provides INEOS with the incentives to exercise market power and set higher prices in NWE, which means accepting a reduction in output by losing NWE sales. This implies that INEOS finds it profitable to forego some high-price marginal sales in NWE, and to make instead greater volumes of low-margin sales in export markets.
- (747) The Commission therefore rejects the Notifying Parties' claims that the evidence on prices and margins shows that INEOS' NWE and export sales patterns can be interpreted as a competitive response to adverse demand conditions in NWE. Quite to the contrary, the fact that INEOS has shifted significant sales away from the NWE market and to export markets, despite the presence of significantly more favourable prices and margins in NWE, is indicative of the exercise of some degree of market power by INEOS in NWE in order to increase its profits.
- (748) Regarding the Notifying Parties' third argument, the Commission considers that the additional fact that INEOS suffered from a reduction in market share following prior mergers does not show that this is entirely or even primarily due to customer engaging in multi-sourcing. For the post-INEOS/ Tessengerlo merger, this is clearly in contradiction with INEOS' internal documents (see Section 9.1.2.1), [...]*. Those documents suggest that the effect of INEOS' price behaviour was even greater than the effect of customers pursuing multi-sourcing strategies.
- (749) Even if a potential "INEOS-specific" negative demand shock of this type were to be present, it could not explain the fact that [...]*. This is because a company-specific demand reduction should be expected to lower the prices charged by that company relative to its competitors, [...]*. Therefore, whilst multi-sourcing behaviour by customers may have exacerbated the reduction in output by INEOS following the two past mergers (relative to a benchmark with no multi-sourcing), it cannot account for the evidence on relative pricing.
- (750) According to the Notifying Parties, the presence of multi-sourcing also drives the price difference observed by the Commission after the INEOS/Tessengerlo merger (as set out in Section 7.2.2. and in Annex A). The Notifying Parties argue that [...]*. However, the Commission econometric analysis accounts for this potential composition effect, since it compares the evolution of prices across the same customers. As is illustrated Annex A show, [...]* (see Table 8 of Annex A). This finding is further confirmed by the results of the diff-in-diff analysis presented in Section 4 of Annex A.

(751) The Notifying Parties also argue that difference in export costs between Solvay and INEOS can account for the differences in export patterns. The magnitude of the very large increase in exports outside the EEA implemented by INEOS over the recent past is noted. [...]*.⁴⁹³ Over a similar period (2007-2012), Solvay increased its exports by only [...]*, or 30% of its 2007 exports. The Commission considers it implausible that such a large difference in export patterns can be entirely or even primarily driven by differences in export opportunities between INEOS and Solvay.⁴⁹⁴ In particular, the Commission considers it unlikely that Solvay, as the second largest competitor in the NWE, would not be able to access the same technology and be able to make the same investments as INEOS did (for instance, in relation to packaging and bagging facilities), if exporting was such a profitable business opportunity, as implied by the Notifying Parties.

(752) Overall, the Commission takes the view that the arguments submitted by the Notifying Parties do not invalidate its conclusion that the recent pattern of NWE and export sales by INEOS provides additional evidence of the existence of some degree of market power in the hands of INEOS in the NWE market for commodity S-PVC, already pre-Transaction.

9.1.2.11. Assessment of the Notifying Parties' arguments in response to the SO in relation to profitability and margins

(753) In the Response to the SO, the Notifying Parties have also argued that INEOS' current level of profitability is inconsistent with a finding that INEOS holds a degree of market power. In particular, the Notifying Parties consider that the current low margin levels for commodity S-PVC and their reduction in recent years show that there is no market power in the hands of INEOS. Similarly, the fact that [...]*, is considered to be additional evidence of lack of market power.

(754) The Commission considers that the evolution of gross margins for commodity S-PVC does not invalidate a finding of some degree of pre-existing market power. In particular, to carry out this exercise, regard should be had to full chain margins in NWE, which are in the Commission's view relevant to assess the trend in INEOS profitability in the relevant market. This is also confirmed by INEOS internal documents.⁴⁹⁵ [...]*.⁴⁹⁶ According to the Commission's computations of full chain margins (as set out in **Annex A**), [...]*.⁴⁹⁷ [...]*.

⁴⁹³ The Notifying Parties also argue that it is wrong to make inferences from changes in percentage of sales in domestic and export markets. However, this criticism is not relevant since the analysis of export and domestic sales patterns put forward by the Commission is on the basis of absolute sales levels, rather than relative shifts.

⁴⁹⁴ The presence of such a stark difference in the export behaviour of INEOS and of Solvay also addresses the Notifying Parties' critique that according to the Commission's theory of pre-existing market power, Solvay should be competing only for high margin EEA customers (paragraph 3.45 of the Response to the SO). [...]*.

⁴⁹⁵ This approach is also in line with the Notifying Party's internal assessment of the evolution of margins for S-PVC – for example see the presentation "ChlorVinyls Latest View 2013 & Budget Proposal 2014" of November 2013, submitted on 17 December 2013; [...]* (slides 3 and 8).

⁴⁹⁶ See Figures 6 to 9 in **Annex A**.

⁴⁹⁷ 2007 margins are likely to be overestimated, because the transportation data used for the calculation of the margins underreports actual transportation costs in 2007, 2008 and 2009 for the INEOS plants Barry, Runcorn, Schkopau and Wilhelmshaven. This effect [...]*. The margin figures stated in the main

- (755) The Commission considers that the decline in margins since 2007 should be primarily attributed to the sharp fall in demand since 2007 that has characterised the NWE market and it does not imply an absence of some degree of market power. Even a company with market power will suffer a decline in margins in the presence of an adverse demand shock. The Commission also notes that 2007 was a particularly favourable year in terms of business profitability internally described by INEOS as a "peak year", and as such it is not representative of average market conditions.⁴⁹⁸ This is because the S-PVC industry is a cyclical one. This was also recognised by INEOS' directors in a 2008 public statement, where INEOS explained that the cyclical nature of the business means that INEOS was "*prepared to take a six, seven or even eight years view*" in relation to the business performance.⁴⁹⁹
- (756) INEOS' internal documents also note that the [...]*.⁵⁰⁰ However, INEOS also notes in 2013 that [...]*,⁵⁰¹ "[...]*".⁵⁰²
- (757) In earlier investor presentations related to the INEOS/Tessenderlo merger, INEOS also notes that [...]*,⁵⁰³ [...]*,⁵⁰⁴ and [...]*.⁵⁰⁵ Whilst it appears that "bottom of cycle" conditions in the S-PVC industry have lasted longer than INEOS expected in 2011 with weak demand conditions lasting until early 2013, that does not contradict the evidence on the cyclical nature of the S-PVC industry and the indications that margins are expected to improve with better demand conditions.
- (758) Moreover, the qualitative and quantitative evidence described in Sections 9.1.2.5 indicates that [...]*. In its internal documents, INEOS also indicates that [...]*. More generally, INEOS' internal documents indicate that a strategy aimed at restoring or focusing on margins was effectively carried out by INEOS during the course of 2012 and early 2013.
- (759) Furthermore, the quantitative analysis of the price effects of the INEOS/Tessenderlo merger indicates the presence of a robust and significant impact on prices (in the range of [0-5]*%), relative to a scenario where it had with less market power. These price effects control for other possible determinants of prices (for example, costs and demand shocks) and are therefore a more accurate reflection of the exercise of some degree of market power than the simple evolution of margins over time. Margins fluctuate significantly on a monthly or annual basis, because they are affected by

text correct for the allocation of caustic soda to sales made by Schkopau, as noted by the Notifying Parties in their Response to the SO. Excluding Schkopau from the computation of gross margins for INEOS (on account of the specific features of its VCM contract with DOW) would result in a 2012 NEW gross margin of [...]*/tonne, equivalent to [...]* of revenues.

⁴⁹⁸ This fact is also explicitly recognised in the Kerling Annual Report for 2012, which notes that [...]* (see DOC INEOS_SET4_14_11_RFI_1375).

⁴⁹⁹ In a 2008 email exchange, Solvay reports a number of statements attributable to INEOS' top management. [...]* Solvay's internal document, email exchange of 13 May 2008, Page 2, SOLVAY_14_11_RFI_00000811.

⁵⁰⁰ Ineos ChlorVinyls Strategy Day Agenda, Slides 11 and 25, September 2013, DOC INEOS_SET4_14_11_RFI_1334.

⁵⁰¹ Ibid, slide 23.

⁵⁰² Ibid, slide 11.

⁵⁰³ INEOS Investor Presentation, November 2011, Slide 11 (Document INEOS_SET4_14_11_RFI_799).

⁵⁰⁴ INEOS Investor Presentation, June 2011, Slide 31 (Document INEOS_SET5_14_11_RFI_79).

⁵⁰⁵ INEOS Investor Presentation, March 2011, Slide 20 (Document INEOS_SET4_14_11_RFI_682).

demand and cost changes.⁵⁰⁶ The quantitative evidence therefore implies that during the period after the INEOS/Tessenderlo merger, [...]*

(760) The Notifying Parties also claim [...]*.⁵⁰⁷

(761) [...]*

(762) The Commission notes that the [...]*

(763) [...]*,⁵⁰⁸ [...]*,⁵⁰⁹ [...]*

(764) [...]*

(765) [...]*,⁵¹⁰ [...]*.⁵¹¹ [...]*

(766) [...]*.⁵¹² [...]*.⁵¹³

(767) [...]*.⁵¹⁴ [...]*.⁵¹⁵ [...]*.⁵¹⁶

(768) [...]*

(769) The Commission also notes that the S-PVC margins earned by INEOS in NWE are [...]* than the S-PVC margins earned by INEOS on average. Any inferences on market power in the relevant geographic market, in this case, NWE, should be based on the margins being earned in that market. On the basis of 2012 data, INEOS' NWE margins were [...]* than the weighted average margin earned by INEOS on all of its merchant sales. This adjustment alone is sufficient to result in a [...]*, on the basis of the figures submitted by the Notifying Parties in their Response to the SO.⁵¹⁷

(770) Finally, given the tightly integrated nature of the INEOS business, the Commission considers that a more meaningful measure of profitability is provided by the EBITDA of the INEOS ChlorVinyls group as a whole rather than EBITDA measures by product based on *ad hoc* allocation rules for fixed costs. [...]*. The Commission considers that the evolution in the EBDITA of the INEOS ChlorVinyls group described by these figures does not imply the absence of some degree of market power held by INEOS.

(771) The Commission therefore concludes that no solid inference with regard to the alleged lack of some degree of market power can be drawn from the S-PVC profitability figures provided by the Notifying Parties in their Response to the SO and, in particular, [...]*

⁵⁰⁶ For example, in the January 2013 Sales and Marketing Update Ineos describes that [...]*

⁵⁰⁷ In particular, the Notifying Parties submit that the S-PVC business made a gross margin of [...]*

⁵⁰⁸ Response to the RFI of February 20, Annex 23.

⁵⁰⁹ [...]*

⁵¹⁰ Response to the RFI of February 20 2014, questions 21 and 22. [...]*

⁵¹¹ These figures exclude LVM, which is reported for separately by INEOS.

⁵¹² [...]*

⁵¹³ [...]*

⁵¹⁴ [...]*

⁵¹⁵ [...]*

⁵¹⁶ That is, [...]*

⁵¹⁷ This assumes that an allocation of fixed costs to NWE sales in proportion to their share of volumes, which is in line with the allocation rules used by the Notifying Parties to attribute fixed costs by product.

9.1.3. *The Transaction would remove a significant competitive constraint and the most direct competitor of INEOS*

- (772) As mentioned in Section 6.4.2., the assets contributed to the JV by Solvay in NWE consist of three S-PVC plants together with the associated upstream assets.
- (773) INEOS explicitly considers Solvay a major competitor. According to INEOS, Solvay's competitive position [...]*.
" [...]* ... "⁵¹⁸
- (774) In the document "[...]*."⁵¹⁹ With the exception of Rheinberg, Solvay's plants are all vertically integrated on-site up to chlorine. Solvay's set-up and access to raw materials is particularly favourable and among the very best in Europe. Solvay's NWE plants have a very good access to ethylene. Its plants at Lillo/Zandvliet, Jemeppe and Rheinberg are connected to the ARG+ network. Tavaux is instead supplied by the Feyzin cracker in which Solvay has a 42.5% share, for almost [...]* of its requirements, the rest being sourced from the [...]*.⁵²⁰ All the plants' EDC requirements are or can be fulfilled by on-site production, with any remaining requirements met by Solvay' Lillo/Zandvliet EDC (a chlorine/EDC plant contributed to the JV).⁵²¹ Solvay's VCM needs are completely covered through on-site production internally.
- (775) Solvay's ability to act as an effective competitor lies thus not only in its major scale, but also in its cost effectiveness through the degree and quality of its vertical integration. This is clearly a key business driver in the S-PVC industry, as pointed out in Section 6.3[...]*⁵²²
- (776) In addition, Solvay is the only player among INEOS' competitors in NWE with a substantial amount of spare capacity, with the exception of Kem One.⁵²³ Solvay is therefore capable of constituting a serious and concrete alternative for customers wishing to switch a large part of their requirements from INEOS to a different supplier.
- (777) The market investigation provides support to this reconstruction and underlines the effectiveness of Solvay as a competitor due to its size, professionalism and wide geographical coverage:

⁵¹⁸ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page 8.

⁵¹⁹ INEOS' internal document "SolVin_General presentation" of 12 June 2013, Page 16

⁵²⁰ The proportion is computed on the basis of the Notifying Parties' submission of 23 September 2013. In particular, the Notifying Parties explain that [...]* are sourced from Feyzin and other [...]* are sourced from [...]*1 and [...]* (other [...]* being sold on to [...]*).

⁵²¹ Rheinberg sources its EDC needs entirely from [...]* and [...]* by rail, despite having its own PVC chain.

⁵²² Document INEOS_SET5_14_11_RFI_00000187

⁵²³ However, Kem One would not constitute a significant competitive constraint on the JV. See in this regard Section 9.1.5.1.

*"Main power with INEOS and SolVin because of the volume and professionalism of organisation. Vinnolit holds some power, but more in the speciality area. Shin-Etsu restricted volumes in Europe. All others are price followers."*⁵²⁴

*"The two big players SolVin and INEOS are so strong in so many countries that they for sure have a certain market power. This is due to their sizes and wide geographical coverage."*⁵²⁵

- (778) From the customers' point of view,⁵²⁶ Solvay has a very good portfolio of well performing, reliable plants, ideally located to serve clients in North, West and South Europe, offering a wide range of K-values and good support to the customers.

*"Apart from the quality of its plants SolVin is a very good supplier because of its innovation. Innovation results from customization aimed at satisfying the specific needs of customers and also from testing techniques and collaboration with the customer through the test process."*⁵²⁷

- (779) As part of the market investigation, the Commission tested directly the constraint exerted by the Notifying Parties on each other in terms of geographic focus, product range, customer services, sales and distribution capabilities, quality of products, price and reputation. 77% of the customers state that Solvay is INEOS' main competitor⁵²⁸ and 72% of the customers state that INEOS is Solvay's main competitor.⁵²⁹

- (780) Competitors largely share the same view. Four competitors regard Solvay as INEOS' closest or close competitor,⁵³⁰ while three competitors regard INEOS as Solvay's closest or close competitor.⁵³¹

- (781) Indeed, INEOS and Solvay are the only players with an extensive coverage of NWE. Both INEOS and Solvay are present in the Benelux, Germany and France, in close proximity. Their geographical closeness is particularly relevant for the logistic advantage that the JV will gain and which will play an important role in attracting the customers located in those areas. This is because the JV will be in a position to supply customers swiftly, from various suitable locations and offering a high degree of security and flexibility of supply. This may not be always the case for the JV's competitors, which have a much smaller geographical footprint and fewer plants (see 17).

⁵²⁴ Reply of Bilcare to question 67 - Phase I Questionnaire to customers (S-PVC) ID2394.

⁵²⁵ Reply of Pipelife to question 67 - Phase I Questionnaire to customers (S-PVC). ID5280.

⁵²⁶ Replies to questions 40-50 – Phase II New Questionnaire to customers (S-PVC) and to questions 73-83 - Phase II Questionnaire to new customers (S-PVC).

⁵²⁷ Non-confidential version of agreed minutes of a conference call with IVC of 15 November 2013 ID5222

⁵²⁸ Replies to question 68 - Phase I Questionnaire to customers (S-PVC).

⁵²⁹ Replies to question 69 - Phase I Questionnaire to customers (S-PVC).

⁵³⁰ Replies to question 85 - Phase I Questionnaire to competitors (S-PVC).

⁵³¹ Replies to question 86 - Phase I Questionnaire to competitors (S-PVC).

Figure17: Competitors' S-PVC and E-PVC plants in the EEA



Source: Form CO

- (782) The remaining players in NWE all have their S-PVC plants concentrated in one single country: Kem One in France (Centre and South), Vinnolit and Vestolit in Germany and Shin-Etsu in the Netherlands. It is true that Shin-Etsu also operates a plant in Portugal, but the core of its activities is clearly located in the Netherlands.
- (783) For an S-PVC supplier, operating multiple plants is an important aspect, which allows it to optimise its production by focusing on a limited set of K-values, to plan back-up plants in case of outages and other disruptions and to present a reliable offer to customers. That is why Solvay's geographic diversification allows it to better reach customers across the NWE region.
- (784) This is also confirmed by the credit rating agency Moody's in its Special Comment on European PVC Industry of 23 February 2012:

"During the next 12 months, we expect that pure European PVC players without substantial geographic diversification will be more vulnerable than their regional peers, while smaller, Europe focused regional players, especially in Southern Europe, will be more exposed to a potential downturn.

We think Solvay SA (Baa2 negative), which operates in PVC via its subsidiary SolVin, a joint venture with BASF SE (A1 stable) in which Solvay retains a majority stake, is best placed on account of its geographic diversification. This has been enhanced by its recent integration of French chemical company Rhodia SA/(Baa2 negative). Solvay has developed its PVC operations mostly in emerging markets including Russia (where a new PVC plant is under construction in a joint venture with a local partner), and in Brazil. This will give it a competitive advantage over Kerling, which is focused solely on

*Europe, [...] despite it being the most cost-efficient of the European producers.*⁵³²

- (785) An analysis of sales destinations of both INEOS and Solvay shows that the Notifying Parties very often supply the same countries within the EEA. Market shares computed at the country level confirm that the Notifying Parties have a very significant footprint with similar levels of combined market shares and a significant overlap not only in countries within the NWE region,⁵³³ but also in other EEA countries, for example, Italy or Greece, see **Table 1** to **Table 3** above.
- (786) The Commission has also examined the customer pool of the Notifying Parties. By looking at how many customers the Notifying Parties have in common, it emerges that for instance in 2012 in Germany they sold [70-80]*% of their joint total volume to common customers, in Italy [70-80]*%, in Netherlands [60-70]*%, in Sweden [60-70]*%, in Belgium [60-70]*%, in France [60-70]*%, in Denmark [50-60]*%, in Ireland [50-60]*% and in Austria [50-60]*%.
- (787) As noted in this Section, Solvay's cost effectiveness makes it an important competitive constraint for INEOS. This is also confirmed by the Boston Consulting Group ("BCG") report submitted by the Notifying Parties, which states: "[...]*".⁵³⁴ The same study shows that, overall, Solvay has leaner maintenance than INEOS, while INEOS has leaner operation costs. According to INEOS, Solvay has "[...]*"
- (788) Solvay also recognises INEOS as its main competitor. In a presentation for a Solvay's board meeting, Solvay clearly identifies INEOS as its closest competitor in terms of cost leadership.⁵³⁵

Figure 18: Solvay's Closest Competitors

[...]*

Source: Solvay's internal documents

- (789) The quantitative evidence also supports the finding that Solvay is an important competitive constraint for INEOS. Section 9.1.2.. shows that Solvay managed to maintain its volumes in NWE when INEOS was reducing them, especially after the acquisition of Kerling and the INEOS/Tessengerlo merger. This suggests that to some extent customers were able to switch to Solvay, reducing the thereby the price effects of the mergers. Moreover, the merger price effect results in **Annex A** provide direct evidence on the importance of Solvay as a competitive constraint. The price effects of the acquisition of Kerling and the INEOS/ Tessengerlo merger are estimated separately for INEOS customers, which are also Solvay customers, and INEOS customers, which do not purchase from Solvay. The results indicate that - in the aftermath of the INEOS/Tessengerlo merger - customers common to INEOS and Solvay suffered less [...]* compared to customers purchasing only from INEOS and

⁵³² INEOS' internal document, "Moody's_Special_Comment_European PVC_Industry" of 6 March 2012, Page 3.

⁵³³ Combined shares between approximately [40-50]*% up to [90-100]*% with an overlap of 18-35% in the vast majority of NWE countries, including in the large ones such as Germany, the United Kingdom, France and the Benelux, which are within an easy reach of the Notifying Parties' plants and where the Transaction would have a significant impact.

⁵³⁴ Form CO, Section 1-5, 6 ("Introduction"), 9-11, Annex 13.

⁵³⁵ Solvay's internal document, "SolVin Board Meeting" of 4 June 2013, Slide 88.

potentially from third parties. Therefore, Solvay was an effective competitor and could limit the price effects resulting from the INEOS/Tessenderlo merger.

(790) Finally, the Commission notes that the Notifying Parties have not disputed any of those findings in their Response to the SO.

(791) The Commission concludes that the Transaction would remove a significant competitive constraint and the most direct competitor of INEOS.

9.1.4. *Remaining competitors would not exercise a sufficient competitive constraint on the JV*

9.1.4.1. Introduction

(792) The Notifying Parties stress that the other suppliers, both individually and collectively, play an important competitive role in NWE. In particular, (i) both Vinnolit and Vestolit are committed to commodity S-PVC; (ii) Mexichem is a strong actual and potential competitor that could increase its sales volumes; (iii) Shin-Etsu also has the ability to increase its sales volumes in Europe by importing EDC, VCM or S-PVC from the United States and by debottlenecking its plants in Europe; and (iv) Anwil's and BorsodChem are very competitive, despite the fact that it has to reach NWE from Poland, the Czech Republic and Hungary. Moreover, Vinnolit, Vestolit and Shin-Etsu are all connected to the ARG+ pipeline, while Vinnolit and Vestolit are also on-site integrated up to chlorine. For those reasons, customers switch frequently to the those S-PVC suppliers.

(793) When analysing the competitive landscape, the Commission must take into account all the elements that could weaken the constraint that the other actual or potential competitors are able to exert on the JV.

(794) The Commission will in turn assess the constraints posed on the JV by the competitors of the Notifying Parties with plants located: (i) in NWE (Section 9.1.5.); (ii) outside NWE but within the EEA (Section 9.1.6.); and (iii) outside the EEA (Section 9.1.7.).

9.1.5. *Assessment of reaction from NWE competitors*

(795) The Commission has investigated in detail the possible constraint exerted by the Notifying Parties' competitors with plants in NWE on the JV.

(796) As general remark, numerous customers do not perceive other NWE suppliers as capable of exerting a significant competitive constraint on the JV post-Transaction. In this context, customers highlight various deficiencies affecting INEOS and Solvay's competitors in NWE.⁵³⁶

- limited portfolio of plants (Vestolit, Shin-Etsu and Ercros)
- focused on limited geographic markets (Germany for Vinnolit and Vestolit)
- focused on speciality products (Vinnolit and Vestolit)
- not sufficiently reliable due to financial problems and social unrest (Kem One)

⁵³⁶ See replies to questions 42-45, 50 - Phase II New Questionnaire to customers (S-PVC); and to questions 75-78, 83 - Phase II Questionnaire to additional customers (S-PVC).

- often sold-out (Shin-Etsu)
- not offering a wide range of K-values (Vestolit, Shin-Etsu and Vinnolit).

(797) The Commission's detailed assessment for each individual competitor is presented in Sections 9.1.5.1 to 9.1.5.4.

9.1.5.1. Kem One

8.1.5.1.1. Kem One's history and competitive position

(798) Kem One is currently the number five player by sales volume and number three by capacity in NWE ([5-10]*% and [10-20]*% market shares, respectively). As noted Section 7.2.1., [20-30]*% of Kem One's production is shipped to Italy, where it is the number one player by sales volume followed by the Notifying Parties. According to their own best estimates, Kem One is a minor player in Iberia ([5-10]*% market share in Spain) and has no or *de minimis* market presence in the United Kingdom, Ireland and the Nordic countries and from Austria onwards (moving towards Eastern Europe).

(799) In recent years, Kem One had serious financial difficulties, which have called into question its ability to remain in the market as a strong and reliable independent player.

(800) As noted at Recital 98, in 2004, Total restructured its portfolio and shed some of its activities, creating Arkema. In 2012, Arkema sold its PVC business to the Klesch Group, creating Kem One.

(801) On 27 March 2013, Kem One entered into judicial receivership ("*redressement judiciaire*"). In September 2013, the initial six-month period foreseen to resolve the company's financial problems was prolonged for another three months.

(802) On 20 December 2013, the Commercial Court of Lyon, decided to approve the only offer on the table, which was a joint offer between Mr Alain de Krassny, a French entrepreneur, and Open Gate, an international investment fund ("the Kem One Judgment").⁵³⁷

(803) The Kem One Judgment is based on the assumption that Kem One will go back to the activity levels predating its financial problems. Moreover, the Kem One Judgment strongly emphasises the industrial experience of Mr de Krassny in the chemicals industry, who owns an Austrian chemical company, Donau Chemie, and Open Gate Capital, which owns one and will probably acquire additional S-PVC profiling companies.⁵³⁸

8.1.5.1.2. The Commission's assessment in the SO

(804) In the SO, the Commission noted that it was unclear at that stage of the process whether the restructuring of Kem One would have produced a positive outcome and, in particular, whether Kem One would have survived and maintained the same amount of production capacity .

⁵³⁷ *Tribunal de Commerce de Lyon, "Jugement arrêtant le plan de redressement de la société KEM ONE", SAS ID5345.*

⁵³⁸ S-PVC profiling is a downstream business to S-PVC production.

- (805) In that respect, the Commission noted that if Kem One were to scale down its capacity or be liquidated, the JV's market share would grow and, depending on the ultimate capacity reduction, could reach [60-70]*% by capacity and [60-70]*% by sales volume in NWE.
- (806) In its internal documents, INEOS [...]*.⁵³⁹
- (807) Moreover, in the SO the Commission noted that the situation of uncertainty surrounding Kem One's future had heavily eroded customers' confidence in it. Several customers seemed very reluctant to rely on Kem One's capability to ensure security of supply and to regard it as a viable supplier. In that respect, a number of customers stated:
- "Little presence with S-PVC in the UK even before Arkema sold out to Kem One and the unfortunate financial situation that has followed. Always tended to concentrate on the local and southern European markets and impossible to trust them as a viable supplier to our business with their present financial situation."*⁵⁴⁰
- "Lots of doubts relative the next future because of financial problem."*⁵⁴¹
- "This year's performance can only be described as poor and would probably make any customer nervous. Will they be in business next year?"*⁵⁴²
- "Company was in insolvency until end of 2013. Longterm survival with new investor is uncertain. Frequent strikes in France. Very restricted transport availability during French summer holidays. Frequent force majeure because of technical breakdowns of own plants or supplier plants. Water level of the river Rhone too high or too low disturbing the deliveries of intermediates to Saint-Fond by boat. Summary: For us KEM ONE is not an option to take over substantial share from the JV. Thus any "threats" to move to KEM ONE during price discussions with the JV will not be taken serious."*⁵⁴³
- (808) The Commission also noted in the SO that competitors' views were not far from the customer perception. Shin-Etsu, for instance, pointed out that: *"Kem One is the weakest producer but it remains to be seen to what extent the current production will continue."*⁵⁴⁴
- (809) The Commission further noted in the SO that Kem One still needed to invest in the conversion of its mercury cell rooms in Lavera and this decision had not yet been made.

⁵³⁹ INEOS' internal documents, "Italy" of 7 March 2013, Slide 6, IDINEOS_SET4_14_11_RFI_00001151; "Italia.pptx" of 8 March 2013, "France version PF sent to JS 28022013" of 1 March 2013.

⁵⁴⁰ Reply of Synseal to question 44 - Phase II Questionnaire to customers (S-PVC). ID4224

⁵⁴¹ Reply of Gewiss to question 44 - Phase II Questionnaire to customers (S-PVC). ID4687

⁵⁴² Reply of Gislaved Folie AB ("Gislaved", Sweden) to question 44 - Phase II Questionnaire to customers (S-PVC). ID5175

⁵⁴³ Email of Bilcare received on 3 January 2013 ID4989.

⁵⁴⁴ Reply of Shin-Etsu to question 93 - Phase I Questionnaire to competitors (S-PVC). ID4717

- (810) In that regard, INEOS itself described Kem One [...]*,⁵⁴⁵ [...]*.⁵⁴⁶
- (811) Moreover, already in 2012 INEOS described Kem One as follows "[...]*".⁵⁴⁷
- (812) The Commission also took into account another internal document, in which INEOS considered a number of competitors as possible targets for future acquisitions. That document substantiated the analysis carried out in Section 7.2.1. according to which Kem One's focus is outside NWE. [...]*.⁵⁴⁸ [...]*.⁵⁴⁹
- (813) The Commission considered in the SO these findings as particularly important, given that Kem One's accounts for [...]* kt/y of capacity and a very large share of the NWE spare capacity available.⁵⁵⁰ In fact, Kem One is the only player in NWE apart from the Notifying Parties with significant spare capacity. Approximately 70% of the 2012 spare capacity in NWE is owned by Kem One.
- (814) Moreover, the Commission considered in the SO that:
- (1) Even if Kem One were to survive its internal crisis in full - that is to say under the most favourable scenario for the Notifying Parties - NWE customers have clearly showed unwillingness to purchase from it. Despite being located in France just like Mazingarbe and Tavaux plants, Kem One's plants in Berre, Balan and Saint Fons fare poorly with NWE customers, when NWE customers were asked to evaluate the plants' overall suitability to supply their purchasing needs.
 - (2) The unwillingness shown by NWE customers made it highly improbable and likely unprofitable for Kem One to increase its production by using the current idle capacity. Such a situation made it even less likely that Kem One could redirect current sales outside NWE to NWE in order to defeat a possible price increase resulting from the Transaction. The Commission considered this as consistent with the evolution of Kem One's sales into NWE and outside NWE, as shown in **Figure 19**. The Commission noted a drop in the sales of Kem One between 2010 and 2011 in NWE, at a time where sales outside NWE remained approximately constant. According to the Commission, this showed that in such a financial distressed situation the optimal strategy for Kem One was to keep the same level of sales outside NWE and keeping the rest of capacity idle. The Commission thus considered it unlikely to expect that Kem One would increase its capacity utilization or redirect its sales into NWE in the event of a price increase resulting from the Transaction.

⁵⁴⁵ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page 1

⁵⁴⁶ INEOS' internal document, "European PVC Companies", updated in January 2012, INEOS_14_11_RFI_00000148,, Page 4.

⁵⁴⁷ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page [4].

⁵⁴⁸ INEOS' internal document, "[...]*", INEOS_14_11_RFI_00000149, Page 5.

⁵⁴⁹ INEOS' internal document, "[...]*", INEOS_14_11_RFI_00000149, Page 5.

⁵⁵⁰ Form CO, Section 6, Part A, "Commodity S-PVC", Page 51.

Figure 19: Evolution of Kem One's sales in NWE and outside NWE

[...]*

Source: Notifying Parties' data

- (3) In a scenario where Kem One were to scale down its capacity by 50%, [...]*,⁵⁵¹ Kem One would not simply reduce capacity, but also cut down production. Indeed, in the Form CO, the Notifying Parties provided a capacity of [...]* kt/y and a production of [...]* kt/y. Should Kem One scale down capacity by 50% to around [...]* kt/y, this would necessarily lead to a rebalancing of its portfolio. In this context, the Commission recalled that Kem One's main focus is on Italy, not NWE.
- (815) The Commission therefore concluded, at the stage of the SO, that Kem One was not capable of exerting a significant constraint on the JV and that it was still uncertain whether the new owners would be able to recover the confidence of the market in the next 2-3 years and transform the business into an effective competitor. In addition, the Commission concluded that it was also unclear whether Kem One would maintain its capacity at current levels or whether it would scale down its operations.
- (816) In any event, the Commission noted that Kem One is a more distant competitor to INEOS and Solvay, because it does not have the same geographic focus and reach as the Notifying Parties and, therefore, constitutes a more limited competitive constraint. Moreover, absent any concrete evidence supporting the contrary, Kem One may simply follow a hypothetical price increase by the JV and increase its margins, instead of trying to counter such a price increase.

8.1.5.1.3. Notifying Parties' Response to the SO

- (817) In their Response to the SO, the Notifying Parties acknowledge that Kem One has been suffering from severe financial difficulties for the past two years, combined with a series of temporary outages from September 2011 to May 2012. This has affected its ability to produce at full capacity. However, they argue that despite these issues, Kem One was a strong competitor in the market.
- (818) In particular, they argue that, even though the market investigation was conducted before the future of Kem One was known, customers' replies already indicate that Kem One was considered a reliable supplier by many.
- (819) The Notifying Parties also stress that this evidence would become all the more valuable now that Kem One's production problems have been resolved. In other words, given that there has been a successful conclusion of the process of *redressement judiciaire*, Kem One will be a stronger competitor going forward. According to the Notifying Parties, the measures outlined in Kem One's restructuring plan include the following:

⁵⁵¹ INEOS' internal documents, "Italy" of 7 March 2013, Slide 6, INEOS_SET4_14_11_RFI_00001151; "Italia.pptx" of 8 March 2013, "France version PF sent to JS 28022013" of 1 March 2013.

- (1) Lower input costs in the form of discounts on prices in its electricity and ethylene contracts. Total has accepted a discount of 13.6% on the price of ethylene and LyondellBasell accepted a similar discount of 13.5%.
 - (2) Significant financial resources for investment in key projects, including through capital contributions by Mr de Krassny and Open Gate (EUR 10 million), financial support from Arkema (EUR 40.5 million) and public funding (EUR 125 million).
 - (3) Investments of several hundreds of millions of Euros to improve Kem One's product quality, to increase productivity levels and to convert its mercury chlorine plants (supported by a bank guarantee from the French state). This investment will give Kem One the ability to produce sufficient chlorine in its fully owned integrated membrane plant to operate its S-PVC plants at full capacity.
 - (4) Release from a substantial portion of its debts, including debts to suppliers of key raw materials such as ethylene (approximately EUR 130 million).
 - (5) Acquisition of a strong downstream business which will provide it a captive customer. These businesses, including Profialis, Kem One Innovative Vinyls, and Benvic (Solvay's downstream PVC compounding business which is being acquired by Open Gate) will source important volumes of S-PVC from Kem One (Open Gate's downstream businesses will need an estimated 200 kt/y of S-PVC).
- (820) In addition, the Notifying Parties submit that there was no robust evidence of the Commission's assertion that Kem One may not continue to operate with the same levels of capacity. The Kem One Judgment does not foresee any closure of S-PVC capacity. To the contrary, the new owners will have strong incentives to drive up operating levels to improve profitability.
- (821) The Notifying Parties also argue that Kem One's [10-20]*% share in Germany and [10-20]*% share in France, in which it is the second largest S-PVC supplier after the JV, are significant, as these countries constitute important parts of NWE. Accordingly, the Notifying Parties submit that the Commission should not dismiss Kem One as a weak competitor with a different geographic focus from that of the Notifying Parties.
- (822) Finally, with regard to the possible State aid aspect inherent to the restructuring of Kem One, the Notifying Parties consider that the Commission cannot give any weight to possible infringements of Union law at a time when this is mere speculation and no investigations have been formally opened. The Commission can certainly not prejudge the outcome of any possible State aid investigations. Moreover, according to the Notifying Parties, the implications of any such possible investigation on Kem One's business are remote and dimly discernible, and the European Court of Justice has provided clear guidance to the effect that the Commission should not give any weight to dimly discernable future possibilities.⁵⁵²

⁵⁵² C-12/03 P, *Commission v. Tetra Laval* ("Tetra Laval II") of 15 February 2005, 2005 ECR I-00987 Paragraph 44.

8.1.5.1.4. Commission's assessment

- (823) After having issued the SO, the Commission has continued to monitor Kem One's position as a potential competitive force in the NWE market for commodity S-PVC with a view to assessing the Notifying Parties' arguments in the Response to the SO.
- (824) Having taken into account the evidence gathered after the issuance of the SO,⁵⁵³ the Commission concludes that Kem One will not have the ability and incentive to exercise sufficient competitive pressure on the JV so as to offset a possible price increase by the JV post-Transaction. The Commission's conclusions are supported by the elements referred below.
- (825) First, the Commission notes that Kem One has gone through serious difficulties and failed attempts of restructuring in the past years. Klesch, in particular, has recently purchased Kem One and attempted to return it to profitability, without success[...]*.⁵⁵⁴ The Commission therefore considers that any future plan to restructure Kem One has to be seen in the context of a company which attempted in vain to return to profitability in the past. Therefore, particularly strong evidence is required in order to show that Kem One will become a credible competitor post-Transaction.
- (826) Second, the Commission acknowledges that Kem One's restructuring plan, which is in the course of being implemented, does present some features that could be seen as capable, at least in principle, of improving Kem One's financial position. These features in particular relate to the new agreements for the procurement of electricity and ethylene, as well as the relief from a significant portion of Kem One's debts.
- (827) The fact that Kem One's financial position may improve in the future, however, is no guarantee that such company will become more aggressive towards the JV. As described in Section 7.2.2, Kem One has not reacted to a price increase in NWE in the past years by expanding output. The fact that Kem One will possibly enjoy in the future a more solid financial position implies that Kem One may even have less incentive to react to a price increase by expanding output aggressively.
- (828) The Commission therefore considers that Kem One's restructuring plan, whilst potentially beneficial on the company's financial position, may further reduce Kem One's incentives to expand output aggressively as a reaction to a price increase by the JV post-Transaction.
- (829) Third, the Commission notes that there appears to be still uncertainty with regard to the State aid aspect of the restructuring plan. In that respect, Kem One has confirmed that "*Since the recovery plan adopted by the Commercial Court involves different measures of financial support by the French state, it will be submitted to the European Commission in the context of a notification.*"⁵⁵⁵
- (830) Without prejudice to the outcome of a possible State aid investigation on this matter, the Commission notes that the significant funding measures implemented by the

⁵⁵³ See non confidential version of the minutes of the conference call with Kem One of 18 February 2014, ID5996; and non-confidential version of Kem One's comments on the SO ID5967.

⁵⁵⁴ INEOS' internal document, "[...]*", INEOS_14_11_RFI_00000149, Page 5.

⁵⁵⁵ Non confidential version of the minutes of the conference call with Kem One of 18 February 2014, ID5996, and non-confidential version of Kem One's comments on the SO ID5967.

French State imply necessarily some degree of uncertainty as to the full implementation of the restructuring plan, its timing, as well as its overall effectiveness. Ultimately, it is highly likely that the success of the restructuring plan will be conditional on State aid clearance from the Commission.

- (831) In that regard, as acknowledged by the Notifying Parties, the financial support contributed by the French State appears to play a fundamental role in the conversion of Kem One's mercury chlorine plants. Kem One itself stated that "*the public funding measures form an integral part of the recovery plan as adopted by the Commercial Court of Lyon, which cannot be modified. In addition, modernization of the production equipment is an essential step in the restructuring plan, which has to be undertaken.*"⁵⁵⁶
- (832) The Commission notes that where the public support from the French State was called into question by a State aid investigation or, in the worst case scenario, considered as unlawful and recovered, the restructuring of Kem One as a whole would be put at risk. The Commission therefore considers that, contrary to the Notifying Parties' claims, the full implementation of the restructuring plan still involves a high degree of uncertainty, similarly to Kem One's pre-judgment situation.
- (833) Fourth, the Commission's investigation on Kem One's future business plans has not revealed any strategy sufficiently detailed to meet the requisite standard of proof for demonstrating that Kem One will become a credible and strong competitor. In that regard, it is true that Kem One appears to envisage a review of its business strategy, and that it has appointed a new commercial director for that purpose.⁵⁵⁷ However, when asked in more detail about its new commercial strategy, Kem One has not provided any pre-existing internal documents showing the existence of an ongoing credible business review.⁵⁵⁸ As such, any possible change of Kem One's strategy has to be considered as not sufficiently strong and substantiated.
- (834) Fifth, the overall credibility of Kem One as a source of evidence in the Commission's investigation has to be reviewed with great care. Kem One has repeatedly stated in the course of the post-SO contacts with the Commission that it will be in a position to act as a credible competitive constraint on the JV. The Commission considers that any statement from Kem One with respect to its alleged recovery of competitiveness, which is not supported by concrete and verifiable evidence, cannot be considered reliable. Kem One can have a tangible incentive to overemphasise its credibility as a competitor of the JV in the future *inter alia* for the following reasons.
- (835) In the first place, as discussed more in detail in Section 9.1.8., Kem One and the other competitors of the JV would be in a position to increase prices in turn as a reaction to a possible price increase by the JV post-Transaction. Kem One would therefore likely benefit from the reduction of competition brought about by the Transaction. In that respect, the Commission notes that Kem One can have an incentive to support the position of the Notifying Parties.

⁵⁵⁶ Non confidential version of the minutes of the conference call with Kem One of 18 February 2014, ID5996.

⁵⁵⁷ Non confidential version of the minutes of the conference call with Kem One of 18 February 2014, ID5996, and non-confidential version of Kem One's comments on the SO ID5967.

⁵⁵⁸ Non-confidential version of Kem One's email of 28 February 2014, ID 6138.

- (836) In the second place, as acknowledged by Kem One,⁵⁵⁹ a possible State aid investigation on Kem One's restructuring would likely be carried out in the framework of the Commission's rules on aid for the rescue and restructuring of companies in difficulty. In this context, and without prejudice to any decision on the applicability of State aid rules to Kem One's restructuring, the French State would have to prove, among other things, that Kem One's restructuring is based on a feasible, coherent and far-reaching plan to restore a firm's long-term viability.⁵⁶⁰ As beneficiary of the public measures in question, it can be reasonably assumed that Kem One has an incentive to consistently submit that its viability will be fully recovered also in the context of these proceedings.
- (837) Sixth, the timing for the implementation of Kem One's restructuring plan still appears to be either unclear or even delayed until 2016. For instance, the implementation of Kem One's new commercial strategy is not supported by any underlying internal document detailing a specific time frame.⁵⁶¹ In addition, Kem One's plan to convert its Lavera chlorine plants is only expected to be finalised in 2016.⁵⁶² The Commission also notes that, as discussed above, the timing of the whole restructuring process could be affected by the outcome of possible State aid proceedings. The Commission therefore does not share Kem One's views that "*implementing the recovery plan will put KEM ONE in a position to act as a credible competitive constraint on the commodity S-PVC market as from 2014*".⁵⁶³
- (838) Seventh, and in any event, the Commission recalls that it has adopted a conservative approach and it has taken into account Kem One as a full competitive force in its competitive assessment. Even in this scenario, which is described in Section 9.1.8., Kem One would still lack the ability and the incentive to react aggressively to a price increase by the JV post-Transaction.
- (839) The Commission therefore concludes that Kem One does not have the ability and incentives to expand its output sufficiently so as to offset a likely price increase by the JV post-Transaction.

9.1.5.2. Shin-Etsu

- (840) Shin-Etsu is currently the third market player by sales volume and fourth by capacity in NWE ([10-20]*% and [10-20]*%, respectively).⁵⁶⁴ Through its two plants in the Netherlands and Portugal, Shin-Etsu achieves a non-negligible multi-country presence. Shin-Etsu is the number one player in Ireland ([...]* ahead of INEOS), the Netherlands and Portugal and has very limited market presence from the Czech Republic onwards (moving towards Eastern Europe).
- (841) INEOS [...]*, describes this player as follows: "[...]*".⁵⁶⁵

⁵⁵⁹ Non-confidential version of Kem One's comments on the SO, paragraph 8 ID5967.

⁵⁶⁰ Communication from the Commission — Community guidelines on State aid for rescuing and restructuring firms in difficulty, OJ 244 , 01/10/2004 p. 2-17, para 17.

⁵⁶¹ Non-confidential version of Kem One's email of 28 February 2014, ID6138.

⁵⁶² Non-confidential version of Kem One's comments on the SO, paragraph 23 ID5967.

⁵⁶³ See Non-confidential version of Kem One's comments on the SO ID5967.

⁵⁶⁴ In terms of sales [10-20]*% in NWE+ and in the EEA; in terms of capacity [10-20]*% also in NWE+ and in the EEA.

⁵⁶⁵ INEOS' internal document, "[...]*", INEOS_14_11_RFI_00000149, Page 8.

(842) However, as it can be seen from the following statements, in the context of the market investigation several customers have pointed out that Shin-Etsu was consistently sold out:

*"While they produce K-values relevant to KPF, KPF never managed to secure any volumes, since Shin-Etsu is constantly sold out."*⁵⁶⁶

*"For instance, Shin-Etsu has very limited capacity in K-60 and is always sold out."*⁵⁶⁷

*"Seems to have good performance and reliability, but capacities are too small (or very efficiently sold out) so that they cannot supply additional volumes into the market when other PVC producers are short due to production problems."*⁵⁶⁸

*"Shin-Etsu (2 plants sold out in Europe - may look for capacities)"*⁵⁶⁹

(843) Shin-Etsu itself admits that: *"We have always produced up to 100% capacity...."*⁵⁷⁰ The production of Shin-Etsu at capacity levels severally hinders the additional competitive pressure that this supplier can exercise on the JV post-Transaction. The capacity constraint of Shin-Etsu is all the more important given that it is the next competitor after the Notifying Parties by sales, has a more significant geographic spread than the other remaining S-PVC suppliers and is generally recognised as a solid player.

(844) The Notifying Parties do not seem to contest that Shin-Etsu is in essence capacity constrained. In the Form CO, they state that, even taking into account Shin-Etsu's gross capacity ([...]* kt/y), it would only have a spare capacity of [...]* kt/y in NWE in 2012.⁵⁷¹ According to the Notifying Parties' own best estimates, this spare capacity would only cover around [0-5]*% of the NWE demand for commodity S-PVC in 2012 ([...]* out of [...]*).

(845) In that respect, the Notifying Parties' arguments in their Response to the SO that numerous NWE customers are within a 1 000 km 'catchment area' from Shin-Etsu's plant in Pernis (the Netherlands) appears to be irrelevant, given that Shin-Etsu is capacity constrained in any event and cannot therefore constitute a supply option for those.⁵⁷²

(846) The Notifying Parties however argue that Shin-Etsu could import EDC/VCM or PVC or debottleneck its production facilities in Europe. However, there is no evidence to support these statements.

⁵⁶⁶ Non-confidential version of the agreed minutes of a conference call with KP Films of 17 May 2013 ID3664.

⁵⁶⁷ Non-confidential version of the agreed minutes of a conference call with Simona of 23 May 2013. ID3646.

⁵⁶⁸ Reply of Pipelife to question 45 - Phase II Questionnaire to customers (S-PVC). ID4684

⁵⁶⁹ Reply of Gerflor, France to question 23 Phase I Questionnaire on remedies to customers (S-PVC). ID3266

⁵⁷⁰ Reply of Shin-Etsu to question 100 - Phase I Questionnaire to competitors (S-PVC). ID4717

⁵⁷¹ Form CO, Section 6, Part A, "Commodity S-PVC", Page 51.

⁵⁷² For a discussion on the relevance of supply radii, refer to Section 7.2.4. above.

- (847) First, INEOS itself states in a 2012 internal document that [...] ⁵⁷³
- (848) Despite already in principle being able to bring EDC/VCM from the United States, Shin-Etsu is not pursuing this strategy at the moment. Conversely, it seems to be focusing its investment on other, more attractive markets. In any event, the Commission notes that any imports from Shin-Etsu's North American plants would likely incur the same difficulties faced by North American imports and discussed in Section 9.1.7.. ⁵⁷⁴
- (849) On the basis of the Notifying Parties' own best estimates, Shin-Etsu's production in Pernis has been quite stable over the years ([...] kt/y in 2008, [...] kt/y in 2009, [...] kt/y in 2010, [...] kt/y in 2011 and [...] kt/y in 2012) and there has been no capacity expansion of its Dutch plant, despite running it almost at capacity. When asked about past and future capacity expansions, Shin-Etsu explains that no significant capacity expansion took place over the last three years and no capacity expansion is to be expected over the next two to three years. ⁵⁷⁵
- (850) As regards debottlenecking, the Commission notes that all examples quoted by the Notifying Parties appear to have taken a substantial amount of time. ⁵⁷⁶ As such, it is unlikely that Shin-Etsu could rapidly de-bottleneck its production facility in order to expand output as a reaction to a price increase from the JV.
- (851) In their Response to the SO, the Notifying Parties argue that the Commission's findings are misplaced, as they refer to capacity expansion and not to debottlenecking. The Notifying Parties also state that Shin-Etsu's position with respect to future capacity expansion is understandable, as it is unlikely that any EEA supplier would have actual expansion plans in current market conditions given current levels of overcapacity. Debottlenecking, however, can be achieved in a few months without having significant planned capacity expansions if market conditions change.
- (852) The Commission notes that even in their Response to the SO, the Notifying Parties have not provided any example of debottlenecking which took less than two years, despite having stated that debottlenecking is incremental and that having claimed, without any support, that partial debottlenecking could be achieved "*within a year or so.*" As such, the Notifying Parties' arguments in this respect are unsubstantiated.
- (853) The Commission also considers it unlikely that in the event of a price increase Shin-Etsu could reorient its sales outside NWE into NWE. As shown in **Figure 20**, the main focus of Shin-Etsu in Pernis is already a very large share of its production in NWE and the sales outside NWE are limited. In fact, Shin-Etsu sales outside NWE in 2012 account for [0-5]*% of the total commodity S-PVC demand ([...] out of [...] kt). Therefore, in the extreme and unlikely hypothesis of a full reorientation of

⁵⁷³ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page [7].

⁵⁷⁴ The Notifying Parties' arguments in their Response to the SO, which essentially repeat the same point already emphasised in their Response to the Decision Opening the Proceedings, do not add any evidence supporting the position that Shin-Etsu's imports from North-America would increase.

⁵⁷⁵ Reply of Shin-Etsu to questions 91 and 92 - Phase I questionnaire to competitors (S-PVC). ID4717

⁵⁷⁶ The debottlenecking examples presented by the Notifying Parties appear to have taken from two to four years (Source: Form CO, Section 6, Part A, "Commodity S-PVC", paragraph 6.130).

sales into NWE such small volume would at best have a very limited impact in defeating the post-Transaction price increase.⁵⁷⁷

Figure 20: Evolution of Shin Etsu's sales in NWE and outside NWE

[...]*

Source: Notifying Parties' best estimates

- (854) In any event, even under the assumption that Shin-Etsu had the ability to expand output sufficiently so as to offset a price increase by the JV post-Transaction, it would still lack the incentive to do so, as discussed in Section 9.1.8.
- (855) The Commission therefore concludes that Shin-Etsu does not have the ability and incentive to expand its output sufficiently so as to offset a likely price increase by the JV post-Transaction.

9.1.5.3. Vinnolit

- (856) Vinnolit is currently the number four market player by sales volume and four by capacity in NWE ([5-10]*% and [10-20]*%, respectively). As noted in Section 7.2.1., [60-70]*% of Vinnolit's output remains in Germany, where it is the third player by sales volume following the Notifying Parties. According to the Notifying Parties' own best estimates, Vinnolit has no - or *de minimis* - market presence in the rest of the EEA.⁵⁷⁸
- (857) Numerous customers stress that Vinnolit's Commodity S-PVC offer is rather limited, because it is heavily focused on speciality and products:⁵⁷⁹

*"More speciality S-PVC ... no large portfolio of S Commodity PVC; bad second tier player."*⁵⁸⁰

*"Strong on specialties, limited volume on S-PVC, concentrated on central Europe market."*⁵⁸¹

*"Vinnolit, the 4th biggest European player, is moving into speciality PVC and out of commodity S-PVC."*⁵⁸²

⁵⁷⁷ Note that the computation of Shin-Etsu has been based on the Pernis plant only. The assumption is confirmed by the very limited Eurostat flows from Portugal (where only Shin-Etsu has production facilities of S-PVC) to NWE amounting to [...]* of S-PVC. This is also correct after verification with Shin-Etsu.

⁵⁷⁸ This is also reflected in the feedback received by several customers. See, for example, replies of Mehler, Renolit and Synseal to Question 42 - Phase II New Questionnaire to customers (S-PVC). ID4389; ID4255; ID4224

⁵⁷⁹ The Notifying Parties state in their Response to the SO that some respondents in the market investigation have indicated that Vinnolit has some degree of market power, or that it is INEOS' or SolVin's closest competitor. The Commission, however, notes that these responses are isolated, and unsubstantiated. Therefore, their relevance for the purposes of the competitive assessment is doubtful.

⁵⁸⁰ Reply of Legrand to Question 64 - Phase I questionnaire to customers (S-PVC) ID5361

⁵⁸¹ Reply of Alfatherm SPA (Italy) to Question 64 - Phase I questionnaire to customers (S-PVC) ID5430.

⁵⁸² Non-confidential version of the agreed minutes of a conference call with Profine of 15 May 2013 ID5208.

*“The portfolio of Vinnolit is more specialist now. That came because INEOS is pushing in the market to be leader. Vinnolit believe it survives because of the specialities.”*⁵⁸³

- (858) This finding is consistent with the Notifying Parties' internal documents. In particular, INEOS describes Vinnolit as follows: "[...]*".⁵⁸⁴ This document shows that [...]*⁵⁸⁵
- (859) INEOS concludes in its internal document that "[...]*".⁵⁸⁶ Very similar views are expressed in another INEOS' internal document [...]*⁵⁸⁷ Moreover, as shown in **Figure 18**, Solvay considers Vinnolit as a player with a strong focus on specialties, far from the position of INEOS and Solvay as commodity S-PVC suppliers.
- (860) The Notifying Parties in essence claim that the Commission is underestimating Vinnolit's role in the market for commodity S-PVC.
- (861) In this respect, the Commission does not dispute that Vinnolit is active in the market for commodity S-PVC. Vinnolit's focus, however, is clearly oriented on the specialty area. As such, it is debatable whether Vinnolit would constitute a credible competitive constraint in the market for commodity S-PVC, which does not constitute a priority for the company and in which it is generally not considered a major or even a committed player.
- (862) What is significant is whether Vinnolit would be in a position, post-Transaction, to exert a significant competitive constraint on the JV.
- (863) In this regard, despite being located in Germany as is INEOS' plant in Wilhelmshaven and Solvay's plant in Rheinberg, Vinnolit's plants are small in size, and not among the most attractive supply options for NWE customers.⁵⁸⁸ This is not surprising, as INEOS lists in its internal documents [...]*⁵⁸⁹ [...]*. Moreover, INEOS clearly sees Vinnolit as a [...]*⁵⁹⁰ This is also consistent with Solvay's internal document, where Vinnolit appears as both high-cost and speciality-focused player.⁵⁹¹
- (864) The Notifying Parties argue in this respect that high fixed costs do not impact pricing decisions which are instead driven by margin considerations. According to the Notifying Parties, whilst fixed costs are worth considering when looking at acquisitions, in terms of competitive pressure it is the variable costs which are important.

⁵⁸³ Reply of Amer-Sil to question 42 - Phase II New Questionnaire to customers (S-PVC). ID5172

⁵⁸⁴ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page [10].

⁵⁸⁵ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page [10].

⁵⁸⁶ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page [10].

⁵⁸⁷ INEOS' internal document, "[...]*", INEOS_14_11_RFI_00000149, Page 2.

⁵⁸⁸ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁵⁸⁹ INEOS' internal document, "[...]*", Page 2.

⁵⁹⁰ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page [10].

⁵⁹¹ Solvay's internal document, "SolVin Board Meeting" of 4 June 2013, Slide 88.

- (865) The Commission shares the Notifying Parties' view that variable costs are the relevant factor to be considered in the context of pricing decisions. However, in the commodity S-PVC market cost competitiveness is one of the necessary characteristics that an S-PVC supplier needs to have in order to be competitive, but is not sufficient alone. Other considerations such as overall capacity and spare capacity need to be considered in conjunction with costs in order to evaluate the extent to which an S-PVC supplier can exert a significant competitive constraint on the JV.
- (866) Moreover, it is doubtful whether Vinnolit has the ability to expand output to counter a hypothetical price increase by the JV post-Transaction. In the Form CO, the Notifying Parties state that, even taking into account Vinnolit's gross capacity ([...]* kt/y), it would only have a spare capacity of [...]* kt/y in NWE in 2012.⁵⁹² According to the Notifying Parties' own best estimates, this spare capacity would only cover around [0-5]*% of the NWE demand for commodity S-PVC in 2012 ([...]* kt/y out of [...]* kt/y).
- (867) It is also unlikely that in the event of a price increase Vinnolit would reorient its sales outside NWE into NWE. As shown in **Figure 21**, the main focus of Vinnolit is selling a large share of its Commodity S-PVC production in NWE and the sales outside NWE are limited. In fact, Vinnolit sales outside NWE in 2012 account for [0-5]*% of the total commodity S-PVC demand ([...]* kt out of [...]* kt/y). Therefore, in the extreme and unlikely hypothesis of a full reorientation of sales into NWE, such small volume is unlikely to defeat a price increase by the JV post-Transaction.

Figure 21: Evolution of Vinnolit's sales in NWE and outside NWE

[...]*

Source: Notifying Parties' best estimates

- (868) The Notifying Parties however argue that Vinnolit is planning to expand its capacity, as shown by the minutes of Vinnolit's call with the Commission,⁵⁹³ and that Vinnolit would have every incentive to use this capacity once the investment has been made and operate at high levels of utilisation.
- (869) In this respect, the Commission notes that, even if Vinnolit requested an authorisation to increase its capacity, this process is likely to take a significant period of time, that is to say, up to some years. Moreover, Vinnolit's focus in the future is likely to remain on specialty S-PVC. As such, it is unlikely that Vinnolit's planned capacity expansion will have a timely impact on the competitive landscape post-Transaction.
- (870) In any event, even under the assumption that Vinnolit had the ability to expand output sufficiently so as to offset a price increase by the JV post-Transaction, it would still lack the incentive to do so, as discussed in Section 9.1.8.

⁵⁹² Form CO, Section 6, Part A "Commodity S-PVC", Page 51.

⁵⁹³ Non-confidential version of agreed minutes of conference call with Vinnolit of 7 October 2013, paragraph 11 ID3597.

(871) The Commission therefore concludes that Vinnolit does not have the ability and incentive to expand its output sufficiently so as to offset a likely price increase post-Transaction.

9.1.5.4. Vestolit

(872) Vestolit is a *de minimis* player by sales volume and capacity in NWE ([0-5]*% and [5-10]*%, respectively).⁵⁹⁴ As noted in Section 7.2.1., [30-40]% of Vestolit's output remains in Germany, where it is once again a *de minimis* player ([0-5]*% market share by sales volume). According to the Notifying Parties' own best estimates, Vestolit has no - or *de minimis* - market presence in the rest of the EEA.

(873) Numerous customers stress that Vestolit's Commodity S-PVC offer is actually non-existent, because this player is heavily focused on HIS-PVC, a co-polymer of vinyl chloride and polybutyl acrylate:

*"Only copo (no S-PVC commodity), price."*⁵⁹⁵

*"Mainly focussed on E-PVC and high impact S-PVC which is not suitable to us."*⁵⁹⁶

*"More speciality S-PVC ... no large portfolio of S Commodity PVC; bad second tier player."*⁵⁹⁷

*"Vestolit is not selling S-PVC, but just producing for internal purposes."*⁵⁹⁸

(874) This is clearly consistent with the Notifying Parties' internal documents. In particular, INEOS describes Vestolit as follows: "[...]"⁵⁹⁹ Very similar if not identical views are expressed in another INEOS' internal document [...]"⁶⁰⁰ Moreover, as shown in **Figure 18**, Solvay sees Vestolit as a player with a strong focus on specialties, far from the position of INEOS and Solvay as S-PVC commodity suppliers.

(875) The Notifying Parties in essence claim that the Commission underestimates Vestolit's role in the market for commodity S-PVC. [...]*. This would demonstrate the commitment of Vestolit to this industry.

(876) In that respect, the Commission notes that it does not dispute that Vestolit is active in the market for commodity S-PVC. Vestolit's focus, however, is clearly oriented on the specialty area. As such, it is debatable whether Vestolit would constitute a credible competitive constraint in the commodity S-PVC market, which does not constitute a priority for the company, and in which it is not generally considered a major or even committed player.

(877) [...]*.

⁵⁹⁴ In terms of sales [0-5]*% in NWE+ and in the EEA; in terms of capacity [5-10]*% in NWE+ and [0-5]*% in the EEA ([0-5]*% both in NWE+ and in the EEA if non-Commodity S-PVC capacity was excluded).

⁵⁹⁵ Reply of Aluplast to question 64 - Phase I Questionnaire to customers (S-PVC). ID4869

⁵⁹⁶ Reply of IVC to Question 64 - Phase I questionnaire to customers (S-PVC). ID2421

⁵⁹⁷ Reply of Legrand to Question 64 - Phase I questionnaire to customers (S-PVC). ID5361

⁵⁹⁸ Non-confidential version of the agreed minutes of a conference call with Profine of 15 May 2013. ID5208

⁵⁹⁹ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page 11.

⁶⁰⁰ INEOS' internal document, "[...]*", INEOS_14_11_RFI_00000149, Page 3.

- (878) In any event, what is significant is whether Vestolit would be in a position, post-Transaction, to exert a significant competitive constraint on the JV.
- (879) In that regard, despite being located in Germany as is INEOS' Wilhelmshaven and Solvay's Rheinberg, Vestolit's plant in Marl does not fare well with NWE customers, when these latter were asked to evaluate plants' overall suitability to serve their purchasing needs.⁶⁰¹
- (880) This is consistent with INEOS viewing Vestolit as a [...] ⁶⁰² This is also consistent with Solvay's internal document, where Vestolit appears as a high-cost and speciality-focused player, even though less than Vinnolit.
- (881) The Notifying Parties argue in this respect that high fixed costs do not impact pricing decisions which are instead driven by margin considerations. According to the Notifying Parties, whilst fixed costs are worth considering when looking at acquisitions, in terms of competitive pressure it is the variable costs which are important.
- (882) The Commission shares the Notifying Parties' view that variable costs are the relevant factor to be considered in the context of pricing decisions. However, in the commodity S-PVC market cost competitiveness is one of the necessary characteristics that an S-PVC supplier needs to have in order to be competitive, but is not sufficient. Other considerations like overall capacity and spare capacity need to be considered in conjunction with costs in order to evaluate the extent to which an S-PVC supplier can exert a significant competitive constraint on the JV.
- (883) Moreover, the Commission considers that Vestolit does not have the ability to expand capacity to counter a hypothetical price increase by the JV. In the Form CO, the Notifying Parties state that, even taking into account Vestolit's gross capacity ([...] * kt/y), it would only have a spare capacity of [...] * kt/y in NWE in 2012.⁶⁰³ According to the Notifying Parties' own best estimates, this spare capacity would only cover around [0-5] * % of the NWE demand for Commodity S-PVC in 2012 ([...] *).
- (884) It is also unlikely that Vestolit could defeat a possible price increase post-Transaction by reorienting its sales outside NWE into NWE. As shown in **Figure 22**, the increasing trend of sales outside NWE of commodity S-PVC suggests increasing incentive to sell outside NWE. In any event those sales outside NWE are limited and in 2012 accounted for [0-5] * % of the total commodity S-PVC demand ([...] * kt/y out of [...] * kt). Therefore, in the extreme and unlikely hypothesis of a full reorientation of sales into NWE, such small volume is unlikely to defeat the post-Transaction price increase.

Figure 22: Evolution of Vestolit's sales in NWE and outside NWE

[...] *

Source: Notifying Parties' best estimates

⁶⁰¹ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶⁰² INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page [11].

⁶⁰³ Form CO, Section 6, Part A, "Commodity S-PVC", Page 51.

(885) Even under the assumption that Vestolit had the ability to expand output sufficiently so as to offset a likely price increase by the JV post-Transaction, it would still lack the incentive to do so, as discussed in Section 9.1.8.

(886) The Commission therefore concludes that Vestolit does not have the ability and incentive to expand its output sufficiently so as to offset a likely price increase by the JV.

9.1.6. *Assessment of reaction from EEA suppliers located outside NWE*

(887) The Commission takes the view that S-PVC suppliers located outside NWE (Anwil, BorsodChem, Fortischem, Ercros, Shin-Etsu's Estarreja plant) are highly unlikely to exercise a significant competitive constraint and did not do so in the recent past.

(888) First, based on the Notifying Parties' own best estimates, it can be noted that all these players have a very limited focus on NWE. Anwil and BorsodChem have no - or *de minimis* - market presence in the Nordic countries (Denmark, Finland, Norway and Sweden) and from France onwards (moving towards the Iberian Peninsula), while Fortischem has almost no market presence in NWE. Ercros has no - or *de minimis* - market presence in the United Kingdom, Ireland and the Nordic countries and from Austria and the Czech Republic onwards (moving towards Eastern Europe). As regards Estarreja, Shin-Etsu's main markets are Spain and Portugal.⁶⁰⁴

(889) Second, the Commission's quantitative analysis in Section 9.1.2. further shows that these players did not exercise a significant competitive constraint in the past. Indeed, despite being faced with a relative increase in prices in NWE and having capacity available, these suppliers did not increase their sales in order to defeat the price increase in NWE, as described in Section 9.1.2. Quite to the contrary, they cumulatively reduced their sales to NWE.

(890) Third, customers' replies reveal a series of problems affecting these players' suitability in NWE/NWE+:⁶⁰⁵

- focused on limited geographic markets (Iberia for Ercros and Shin-Etsu's Estarreja, CE and EE for BorsodChem and Fortischem);
- small size (BorsodChem, Ercros and Fortischem);
- not offering a wide range of K-values (Ercros and BorsodChem);
- not reliable enough or having quality issues (Anwil, BorsodChem and Ercros);
- too far away to serve important markets (for example, Ercros for Germany);
- not sufficiently known to the customers so that they can express an opinion (Fortischem and BorsodChem).

(891) Fourth, with regard to CE players, independent industry experts consider that CE production facilities generally are older, smaller and less competitive than WE

⁶⁰⁴ Non-confidential version of the agreed minutes of a conference call with Shin-Etsu of 17 May 2013 ID5213.

⁶⁰⁵ See replies to questions 46-49 - Phase II Questionnaire to customers (S-PVC); and replies to questions 79-82 - Phase II Questionnaire to additional customers (S-PVC).

plants. Moreover, their costs-base is less than ideal with high energy costs and, among other things, limited access to competitively priced ethylene.⁶⁰⁶

(892) A detailed analysis of each of these players is provided in Sections 9.1.6.1- 9.1.6.5.

9.1.6.1. Anwil

(893) Anwil is a *de minimis* player by sales volume in NWE ([0-5]*%). Anwil is the number one player in Poland ([40-50]*% market shares by sales volume), where it sells [40-50]*% of its production. According to the Notifying Parties' own best estimates, Anwil is a very minor player in Germany ([0-5]*% market share) and has no - or *de minimis* - market presence in the Nordic countries (Denmark, Finland, Norway and Sweden) and from France onwards towards the Iberian Peninsula.

(894) While EE customers tend to have a positive view of this player, NWE customers regard Anwil as a truly EE player, which is not up to WE standards:

*“Plants are well located for Poland, less for Benelux, too far from France.”*⁶⁰⁷

*“Only 1 plant in Poland and 1 small plant in Czech Republic; acceptable for Germany, bad for the rest.”*⁶⁰⁸

*“The trial with Anwil did not work out for us. The portfolio not ok for us.”*⁶⁰⁹

*“Less reliable than other West European suppliers.”*⁶¹⁰

*“In the past they worked most of the time with traders in Germany. Since this year they have a new management and they broke up all the co-operations with the traditional traders and also with German customers. They are not reliable anymore.”*⁶¹¹

(895) The Notifying Parties argue that the market investigation would actually show that Anwil is and will remain an important supply options for customers in NWE.⁶¹² However, Anwil's plants in Neratovice and Wloclawek do not fare well with NWE customers, when these latter were asked to evaluate plants' overall suitability to serve their purchasing needs.⁶¹³

(896) The overall suitability of those two plants to serve customers in NWE is not comparable to that of the Notifying Parties. While a plant like Jemeppe received less than 10 negative replies, Neratovice received around 30 and Wloclawek more than 30. In proportion, 64% of the customer production facilities located in NWE regarded Neratovice as an unsuitable supply option. The proportion grows to 76% for

⁶⁰⁶ 2014 IHS World Analysis Vinyls, Page 172.

⁶⁰⁷ Reply of Tessenderlo Chemie to question 47 - Phase II Questionnaire to customers (S-PVC) ID5169.

⁶⁰⁸ Reply of Renolit to question 47 - Phase II Questionnaire to customers (S-PVC) ID4255

⁶⁰⁹ Reply of Amer-sil to question 47 - Phase II Questionnaire to customers (S-PVC) ID5172.

⁶¹⁰ Reply of Gislaved to question 47 - Phase II Questionnaire to customers (S-PVC) ID5175

⁶¹¹ Reply of Deceuninck to question 47 - Phase II Questionnaire to customers (S-PVC) ID4292.

⁶¹² Response to the SO, Paragraphs 6.44 *et seq.*

⁶¹³ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

Wloclawek. This confirms a very limited competitive constraint exercised by Anwil on the JV, even in the event of a 5-10% price increase.⁶¹⁴

- (897) This is in line with the Notifying Parties' internal documents, [...] * Finally, in a 2012 customer presentation, Solvay simply states "[...]"⁶¹⁵
- (898) The 2013 IHS Chemical World Analysis - Vinyls reports that "In 2011, Anwil's majority shareholder PKN Orlen was interested in divesting its PVC activities, but the company is currently not engaged in negotiations with third parties. Interestingly enough, PKN Orlen/Anwil is the only European PVC producers that is effectively 100% backward integrated into ethylene."⁶¹⁶ This further indicates that the business may indeed suffer some structural weaknesses.
- (899) The Notifying Parties argue that this evidence does not take into account that, in the past, Anwil was stifled by *force majeure* events that forced it to close its cellroom at Wloclawek in June 2010 for more than one year, until Q3 2011.⁶¹⁷ Since then, Anwil would be able to exert a significant competitive constraint on the Notifying Parties, by using both its current spare capacity and also redirecting sales outside the EEA into NWE.
- (900) As noted at Recital 392, outages are part of the commodity S-PVC industry and, if anything, this fact shows that, despite the alleged overcapacity, competitive pressure can suffer from these events. In any event, the Notifying Parties' reconstruction overlooks the fact that, based on the Notifying Parties' own data, over the period 2008-2012 Anwil has reduced its sales to NWE (from [...] * kt/y to [...] * kt/y), despite its own spare capacity increased over the same time period (from [...] * kt/y to [...] * kt/y). This demonstrates that, even when it was faced with a relative increase in prices in NWE, Anwil did not react by redirecting sales to this neighbouring region and, therefore, did not exert a significant competitive constraint on NWE S-PVC suppliers. There is no reason to believe that this would not be the case post-Transaction.
- (901) The Commission therefore concludes that Anwil is not capable of exerting a significant constraint on the JV post-Transaction.

9.1.6.2. BorsodChem

- (902) BorsodChem is a *de minimis* player by sales volume in NWE ([0-5]*% market share)⁶¹⁸. As noted in Section 7.2.1., BorsodChem's is the number one player in Romania and Hungary ([60-70]*% and [60-70]% market share by sales volume), where it sells [20-30]% of its production. According to the Notifying Parties' own best estimates, BorsodChem is a very minor player in Germany ([0-5]% market share) and has no - or *de minimis* - market presence in the Nordic countries and from France onwards towards the Iberian Peninsula.

⁶¹⁴ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶¹⁵ Solvay's customer presentation, "Global PVC Market" of September 2012, SOLVAY_14_11_RFI_00008221, Slide 18.

⁶¹⁶ 2013 Chemical World Analysis - Vinyls, Pages 185-186. See also 2014 Chemical World Analysis - Vinyls, Pages 173-174.

⁶¹⁷ Response to the SO, Paragraph 6.12(iii)(b) and 6.46(iv).

⁶¹⁸ [0-5]*% in NWE+ and [0-5]*% in the EEA.

- (903) While EE customers tend to have a rather positive view of this player, NWE customers regard BorsodChem as a truly EE player, which is not up to WE standards:

*"Plant is located at 580 km from our plant in Poland, but too far from Benelux and too far from France."*⁶¹⁹

*"Local player mostly only in Hungary."*⁶²⁰

*"1 plant close to Ukrainian border. Bad for all our sites."*⁶²¹

*"Far away from the WE European customers."*⁶²²

- (904) The Notifying Parties argue that the market investigation actually shows that BorsodChem is and will remain an important supply options for customers in NWE.⁶²³ However, BorsodChem's plant in Kazincbarcika does not fare well with NWE customers, when these latter were asked to evaluate plants' overall suitability to serve their purchasing needs.⁶²⁴
- (905) The overall suitability of this plant to serve customers in NWE is not comparable to that of the Notifying Parties. While a plant like Jemeppe received less than 10 negative replies, Kazincbarcika received more than 35. In proportion, 78% of customer production facilities located in NWE regarded Kazincbarcika as an unsuitable supply option. This confirms a very limited competitive constraint exercised by BorsodChem on the JV, even in the event of a 5-10% price increase.⁶²⁵
- (906) This is also consistent with the Notifying Parties' internal documents, which describe BorsodChem as a rather troubled company: "[...]"⁶²⁶ While INEOS also states that "[...]"⁶²⁷ One customer has also cast some doubts on the long term commitment of this player to PVC: "[BorsodChem] has been bought by Chinese investors who see S-PVC as a by-product and do not seem to be willing to invest in it."⁶²⁸
- (907) Moreover, INEOS clearly sees BorsodChem as "[...]"⁶²⁹ In an internal document "[...]"⁶²⁹
- (908) The Notifying Parties argue that this evidence does not take into account that BorsodChem is "today" a very fierce competitor. In the past, its competitiveness was stifled by the fact that BorsodChem's PVC business has been up for sale for two

⁶¹⁹ Reply of Tessenderlo Chemie to question 48 - Phase II Questionnaire to customers (S-PVC) ID5169.

⁶²⁰ Reply of Uponor Infra Oy (Finland) to question 48 - Phase II Questionnaire to customers (S-PVC) ID5171

⁶²¹ Reply of Renolit to question 48 - Phase II Questionnaire to customers (S-PVC) ID4255

⁶²² Reply of Profine to question 48 - Phase II Questionnaire to customers (S-PVC) ID4240

⁶²³ Response to the SO, Paragraph 6.50.

⁶²⁴ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶²⁵ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶²⁶ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page 5.

⁶²⁷ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFI_00001038, Page 5.

⁶²⁸ Non-confidential version of the agreed minutes of a conference call with Profine of 15 May 2013 ID5208.

⁶²⁹ INEOS' internal document, "[...]"⁶²⁹, Page 6.

years from 2011 to 2012. This climate of uncertainty vanished in early 2013, when the Wanhua Industrial Group confirmed that this business was no longer for sale.⁶³⁰ Since then, BorsodChem would be able to exert a significant competitive constraint on the Notifying Parties, by using both its current spare capacity and also redirecting sales outside the EEA toward NWE.

- (909) As noted at Recital 393, it does not necessarily follow from the fact that BorsodChem is no longer on sale that it will now be an aggressive competitor, particularly towards NWE. Actually, it may simply mean, among other things, that no acceptable offers were received. In any event, this reconstruction overlooks the fact that, based on the Notifying Parties' own data, over the period 2008-2012 BorsodChem has reduced its sales to NWE (from [...] kt/y to [...] kt/y), despite its own spare capacity increased over the same time period (from [...] kt/y to [...] kt/y). This demonstrates that, even when it was faced with a relative increase in prices in NWE, BorsodChem did not react by redirecting sales to this neighbouring region and, therefore, did not exert a significant competitive constraint on NWE S-PVC suppliers. There is no reason to believe that this would not be the case post-Transaction.
- (910) The Commission therefore concludes that BorsodChem is not capable of exerting a significant constraint on the JV post-Transaction.

9.1.6.3. Fortischem

- (911) Fortischem sold [...] kt/y of commodity S-PVC to NWE in 2012 (and had no sales in NWE in 2010 and 2011).⁶³¹ As noted in Section 7.2.1., Fortischem is the number one player in Slovakia which market amounts to [...] kt/y only, where it sells 50% of its production. According to the Notifying Parties' own best estimates, Fortischem has no market presence in NWE at all.
- (912) Customers provide little feedback about this player. Two EE-based customers stated "*No experience / not present on a Polish market*" and "*We cannot reply on regular supplies as Fortischem has limited quantity (usually 2-3 trucks per month) which is really insufficient.*"⁶³² Other customers stress the following:
- "Only one small plant in Slovakia. Has not enough capacity and strength to be a serious alternative to the big suppliers."*⁶³³
- "I extremely small sized plant (38 kt/y for S-PVC) in Slovakia. Acceptable for plants in Bavaria, bad for all other plant."*⁶³⁴
- "Not relevant as K-values and capacity do not meet with our demand (specialty producer)."*⁶³⁵
- (913) Moreover, Fortischem's plant in Novaky does not fare well with NWE customers, when these latter were asked to evaluate plants' overall suitability to serve their

⁶³⁰ Response to the SO, Paragraphs 6.12(iii)(c) and 6.49.

⁶³¹ The same applies to NWE+; its market share in terms of sales in the EEA is of [0-5]*%

⁶³² Reply of Ergis-Eurofilms to question 49 - Phase II Questionnaire to customers (S-PVC) ID4246; and reply of Contilinks to question 49 - Phase II Questionnaire to customers (S-PVC) ID5168.

⁶³³ Reply of Pipelife to question 49 - Phase II Questionnaire to customers (S-PVC) ID4684.

⁶³⁴ Reply of Renolit to question 49 - Phase II Questionnaire to customers (S-PVC) ID4255

⁶³⁵ Reply of Tessengerlo Chemie to question 49 - Phase II Questionnaire to customers (S-PVC) ID5169

purchasing needs.⁶³⁶ The overall suitability of this plant to serve customers in NWE is not comparable to that of the Notifying Parties. While a plant like Jemeppe received less than 10 negative replies, Nováky received around 35. In proportion, 84% of the customer production facilities in NWE regarded Novaky as an unsuitable supply option. This confirms a very limited competitive constraint exercised by Fortischem on the JV, even in the event of a 5-10% price increase.⁶³⁷

- (914) In its 2012 analysis of the competitive landscape, [...] ⁶³⁸ However, one customer provides a rather detailed background of Fortischem: "... *the company went bankrupt in 2009, as their PVC is acetylene based (and not ethylene based) like Chinese or South African PVC, which is the lowest quality in the market and as such a small capacity combined with 5 k-values mean too many changes in production and insufficient product quality.*"⁶³⁹ Finally, in a 2012 customer presentation, Solvay simply states [...] ⁶⁴⁰ It is hard to see how Fortischem could evolve into a credible competitor.
- (915) Finally, over the period 2008-2012 Fortischem has had almost no sales to NWE, despite the fact that its own spare capacity increased over the same time period (from [...] kt/y to [...] kt/y). This demonstrates that, even when it was faced with a relative increase in prices in NWE, Fortischem did not react by redirecting sales to this neighbouring region and, therefore, did not exert a significant competitive constraint on NWE S-PVC suppliers. There is no reason to believe that this would not be the case post-Transaction.
- (916) The Commission therefore concludes that Fortischem is not capable of exerting a significant constraint on the JV post-Transaction.

9.1.6.4. Ercros

- (917) Ercros is a very small player by sales volume in NWE ([0-5]*% market share).⁶⁴¹ As noted in Section 7.2.1., Ercros is the number one player in Spain ([30-40]*% market by sales volume), where it sells [50-60]*% of its production. According to the Notifying Parties' own best estimates, Ercros has a non-negligible footprint in France ([5-10]*% market share), but is a very minor player in Germany ([0-5]*% market share). Moreover, it has no, or very small, market presence in the United Kingdom, Ireland and the Nordic countries and from Austria and the Czech Republic onwards towards Eastern Europe.
- (918) Customers generally provided little feedback about this player. However, several customers emphasised that Ercros is very much limited in size and geographic scope. In line with the analysis carried out in Section 7.2.1., its presence is essentially limited to sales across the Spanish/French border:

⁶³⁶ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶³⁷ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶³⁸ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFL_00001038, Page [11].

⁶³⁹ Reply of Renolit to question 49 - Phase II Questionnaire to customers (S-PVC) ID4255.

⁶⁴⁰ Solvay's customer presentation, "Global PVC Market" of September 2012, Slide 18.

⁶⁴¹ [0-5]*% in NWE+ and [0-5]*% in the EEA.

*“Plants are at a very long distance from our plants, reason why we have not been using them for the last 2 years (not price competitive).”*⁶⁴²

*“Location (in Spain) is a limiting factor. Distance makes them only competitive for us in France.”*⁶⁴³

*“Only one plant in Spain. Far away from central WE Europe.”*⁶⁴⁴

*“Only 1 small plant in Spain, so good for Spain, acceptable for France and Italy, bad for NWE.”*⁶⁴⁵

- (919) The Notifying Parties argue that the market investigation actually shows that Ercros is and will remain an important supply option for customers in NWE. However, Ercros' plant in Vilaseca does not fare well with NWE customers, when these latter were asked to evaluate plants' overall suitability to serve their purchasing needs.⁶⁴⁶
- (920) The overall suitability of this plant to serve customers in NWE is not comparable to that of the Notifying Parties. While a plant like Jemeppe received less than 10 negative replies, Vilaseca received more than 30. In proportion, 76% of the customer production facilities located in NWE regarded Vilaseca as an unsuitable supply option. This confirms that Ercros is a very limited competitive constraint on the JV, even in the event of a 5-10% price increase.⁶⁴⁷
- (921) This is also consistent with the Notifying Parties' internal documents. In a 2012 analysis of the competitive landscape, INEOS describes Ercros as follows: [...]”⁶⁴⁸ Moreover, in a document [...]”. One customer also underlines: *“Ercros is in red figures since 2008, so survival and ability to maintain and invest are under serious threat.”*⁶⁴⁹
- (922) Finally, over the period 2008-2012 Ercros has only slightly increased its sales to NWE (from [...]” kt/y to [...]” kt/y), despite its own spare capacity also increased over the same time period (from [...]” kt/y to [...]” kt/y).⁶⁵⁰ Over the 2008-2012 period Ercros' market share in NWE remained stable at a very low level ([0-5]”% by sales volume according to the Notifying Parties' own best estimates) and, therefore, Ercros did not exert a significant competitive constraint on NWE S-PVC suppliers. There is no reason to believe that this would not be the case post-Transaction.
- (923) The Commission therefore concludes that Ercros is not capable of exerting a significant constraint on the JV post-Transaction.

⁶⁴² Reply of Deceuninck to question 46 - Phase II Questionnaire to customers (S-PVC) ID4292.

⁶⁴³ Reply of Wavin to question 46 - Phase II Questionnaire to customers (S-PVC) ID4186.

⁶⁴⁴ Reply of Profine to question 46 - Phase II Questionnaire to customers (S-PVC) ID4240.

⁶⁴⁵ Reply of Renolit to question 46 - Phase II New questionnaire to customers (S-PVC) ID4255.

⁶⁴⁶ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶⁴⁷ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶⁴⁸ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFL_00001038, Page [2].

⁶⁴⁹ Reply of Renolit to question 46 - Phase II New questionnaire to customers (S-PVC) ID4255.

⁶⁵⁰ The Notifying Parties argue that Ercros' exports into NWE doubled over the past five years. This argument was already addressed at Paragraph (401).

9.1.6.5. Shin-Etsu's Estarreja

(924) As noted in Section 7.2.1., Shin-Etsu already operates a plant in Pernis, at the heart of NWE. Therefore, its incentives to reach NWE from Portugal are very limited. One customer even points out that "*Shin-Etsu does not allow export to Germany (to protect Pernis).*"⁶⁵¹

(925) Even assuming that the Pernis plant runs at capacity and that the crisis of the Iberian Peninsula fosters a larger radius for Estarreja, transport costs from Portugal to Germany or the Benelux will hardly be attractive. In Shin-Etsu's own words, "*... shipping across longer distances will leave no margin to offer an attractive price.*"⁶⁵² Therefore, exports could constitute a more attractive option, given that Estarreja enjoys a favourable location and operates bagging facilities. Some customers also share those doubts as regards the competitiveness of that plant:

*"Only strong located in Benelux area."*⁶⁵³

*"... Portuguese plant not suitable for deliveries to Germany (transport cost). Low capacity."*⁶⁵⁴

*"The distance from Portugal to Germany or Belgium is too big."*⁶⁵⁵

(926) Moreover, Shin-Etsu's plant in Estarreja does not fare well with NWE customers, when these latter were asked to evaluate plants' overall suitability to serve their purchasing needs.⁶⁵⁶ The overall suitability of this plant to serve customers in NWE is not comparable to that of the Notifying Parties. While a plant like Jemeppe received less than 10 negative replies, Estarreja received more than 30. In proportion, 71% of the customer production facilities located in NWE regarded Estarreja as an unsuitable supply option. This confirms that Shin-Etsu's Estarreja plant exerts a very limited competitive constraint on the JV, even in the event of a 5-10% price increase.⁶⁵⁷

(927) The Commission therefore concludes that Shin-Etsu's Estarreja is not capable of exerting a significant constraint on the JV post-Transaction.

9.1.7. Reaction of competitors located outside the EEA

(928) The Notifying Parties argue that imports play an important role in the market for commodity S-PVC and are already exerting a competitive constraint on major players such as INEOS and Solvay. They also stress that this trend is meant to increase, particularly in view of the recent boom in the exploration of shale gas (often referred to as "shale gas revolution") taking place in North America. However,

⁶⁵¹ Reply of Renolit to question 22 Phase II New Questionnaire to customers (S-PVC) ID4255.

⁶⁵² Non-confidential version of the agreed minutes of a conference call with Shin-Etsu of 17 May 2013 ID5213.

⁶⁵³ Reply of Alkor Draka (Spain) to question 45 - Phase II Questionnaire to customers (S-PVC) ID4424.

⁶⁵⁴ Reply of Bilcare to question 45 - Phase II Questionnaire to customers (S-PVC) ID5170.

⁶⁵⁵ Reply of Deceuninck to question 45 - Phase II Questionnaire to customers (S-PVC) ID4292.

⁶⁵⁶ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

⁶⁵⁷ Replies to question 14-39 - Phase II Questionnaire to customers (S-PVC); replies to question 25-50 - Phase II Questionnaire to additional customers (S-PVC).

based on the results of its market investigation, the Commission cannot accept the Notifying Parties' argument.

(929) The Commission notes that S-PVC imports into the EEA appear to have played in recent years only a negligible role. In 2012, imports accounted for only approximately 3% of the total EEA demand. The EEA is by far a net exporter of S-PVC, as it exports annually approximately 900 000 tonnes of S-PVC against imports of 130 000 tonnes in 2012.⁶⁵⁸

(930) In this respect, IHS pointed out the following in March 2013:

*"In recent history Europe (EU27) has not been a significant PVC importer and this did not change in 2012. Obviously, the shale gas (that is to say a very strong wind) in North America has blown by Europe for the time being. The current trend line points downward. In 2012, EU27 PVC imports were only 207 thousand metric tons; down from 271 thousand metric tons in 2011. Indeed, if we excluded non-EU27 member Norway, total EU27 imports in 2012 were only 127 thousand metric tons; down from 186 thousand metric tons in 2011. For comparison purposes, domestic demand in West Europe alone was 4 million metric tons in 2012."*⁶⁵⁹

(931) In addition, recent publicly available data do not show an increasing trend of imports. The recent 2014 IHS World Analysis - Vinyls contains relevant data on PVC imports to WE (as defined by that report).⁶⁶⁰ Those trade flows include imports from any region outside WE. This report shows a yearly decrease of PVC imports over the period 2008-2012 from 420 kt/y down to 268 kt/y, which constitutes a decrease of 36%. In terms of forecast, imports are expected to continue to shrink until 2015, down to 250 kt/y. Imports are then expected to grow in 2016 and increase up to 350 kt/y in 2018, which is still below 2008 levels.

(932) The Commission also contacted an industry expert, ICIS, to assess the credibility of a flood of North American exports into the EEA. ICIS agrees that the shale gas revolution may fundamentally change the conditions in the PVC industry and explains that Europe suffers from a weak competitive position. However, it does point out that even a three-to-five year time window may not be enough to see this competitive threat play out:

*"Cheap ethane and cheap power are perfect ingredients to build/play in export markets for vinyls chain products. So long as that continues, Europe will be on a weaker footing. 3-5 years may not be quite long enough to see the risk play out fully given the time taken to decide and build new assets. ... the main risk will be more than 3-5 years ahead."*⁶⁶¹

(933) Moreover, in a very recent article of February 2014 published by ICIS, an industry expert points out that "US PVC exports fail to grow in 2013, despite shale gas

⁶⁵⁸ Form CO, Section 6, Part A "Commodity S-PVC", Paragraph 6.123 and Table A 6.16.

⁶⁵⁹ IHS Market Report of 28 March 2013, Page 26.

⁶⁶⁰ 2014 IHS World Analysis - Vinyls, Page 179.

⁶⁶¹ Email exchange between the Commission's Services and ICIS of 16 December 2013 ID4893.

boost". This once again calls into question the Notifying Parties' prediction about the flood of cheap shale gas-boosted PVC into Europe.⁶⁶²

- (934) Other publicly available sources consistently show that the EEA nor NWE market has thus far not been a real focus for North American S-PVC suppliers, which are also affected by an import duty of 6.5% when selling into the EEA. In particular, North American players are more likely to target much "simpler" markets rather than NWE, where bulk-based logistics is extremely complex.

*"It is not easy to supply the highly sophisticated European PVC market with imports. The European domestic market is already grossly oversupplied. There are customs duties to contend with. And perhaps most importantly, European PVC converters demand just-in-time delivery of high quality, approved grades in bulk silo trucks. Fortunately for the Europeans, there are other less demanding markets for North American producers to supply."*⁶⁶³

*"Apart from the regular shipments from Mexico, imports are no more than a fringe issue. Europe is an intensely competitive and time-sensitive market and when the direction of the market is uncertain in the short term, buyers are unwilling to expose themselves to deep-sea imports. However, imports seem to be more prominent in the UK than elsewhere; the market there appears to be taking a stance against the perception that domestic pricing is relatively high."*⁶⁶⁴

*"Despite the steady rise in domestic prices in recent months, imports remain a minimal threat. There are several barriers to imports, including technical/non-technical hurdles and import duties, for instance on US material of 6.5%. Other deficit markets, which Europe certainly is not, provide better netbacks. The European market is now much more time sensitive than it used to be before the recession. In this relatively new environment that places a premium on short lead times, exports from lower-cost US producers find themselves at an obvious disadvantage. Despite the strong recovery in the value of the Euro since early July, albeit slightly flatter during August, US exporters are struggling to compete effectively and offer levels are not sufficiently differentiated from domestic options to compensate for the added risk of importing."*⁶⁶⁵

⁶⁶² See <http://www.icis.com/blogs/chemicals-and-the-economy/2014/02/us-pvc-exports-fail-grow-2013-despite-shale-gas-advantage/> retrieved on 23 March 2014.

⁶⁶³ IHS Market Report of 28 March 2013, Page 26.

⁶⁶⁴ IHS Market Report of 31 July 2013, Page 20.

⁶⁶⁵ The Commission has also taken into consideration Eurostat data to assess the evolution of exports from countries such as United States and Mexico to NWE. The United States exported 27 kt to NWE (minus Norway) in 2007, but this volume went down to 15 kt in 2012, which constitutes a decrease of 47%. Mexico shipped 50 kt to NWE (minus Norway) in 2007, but this amount decreased to 35 kt in 2012, which constitutes a decrease of 30%. Overall, only 50 kt of PVC were shipped from these two countries in 2012. Therefore, with or without the 6.5% import duty, imports have decreased over time and this remains true despite an upward pricing trend in NWE described in Section 7.2.2. See IHS Market Report of 30 August 2013, Page 22.

(935) In the context of the market investigation, customers describe imports as a fringe issue, with the possible exception of Mexichem,⁶⁶⁶ and do not expect critical changes in the next future.

(936) Customers and competitors do not recognize any significant competitive pressure exerted by importers:

"In the case of a 5 - 10% or even 20% increase in the European price the imported price will follow that market movement exactly. The result will be higher pricing for us in Europe as the US and other importers will profiteer in our market with their materials. They will not offer materials at the US price + freight, it will be sold here within a few cents of whatever the European price is set at.

*Ineos will set the market price, the rest will continue to follow and increase margins at the expense of businesses in our sector, this ultimately will be passed on to the consumer. This has two possibilities with the end user, they either pay more for their goods or they don't buy them at all and any signs of recovery that may exist in the sector are threatened."*⁶⁶⁷

(937) In short, customers consider that imports entail major hurdles, which make this sourcing strategy less attractive or unattractive. They refer to matters such as security of supply, complex logistics, packaging issues, lack of storage, long shipment times, price uncertainty, import duties of 6.5%, currency fluctuations, preferential custom tariffs, inferior quality, insufficient local technical support.⁶⁶⁸

*"Transport costs represent ... 15% for American and Chinese Sources within 1500kms. This generally makes American and Chinese sources uncompetitive versus European sources."*⁶⁶⁹

*"Looking at over sea supply, it has the disadvantage of longer lead time and logistics difficulties which makes it very difficult (impossible?) to use."*⁶⁷⁰

*"No experience with overseas freight so far, but anyway for regular deliveries the import duty will be the killer, not the freight."*⁶⁷¹

(938) The market also features reluctance to rely on imports due to the opportunistic behaviour of importers and a possible retaliation of NWE suppliers, which would seriously undermine customers' security of supply.

*"[Importers] would probably move the volumes to other markets as soon as the price level on those other markets became more attractive."*⁶⁷²

*"[Importers] will move away their sales as soon as they find higher margins elsewhere."*⁶⁷³

⁶⁶⁶ A more detailed assessment of Mexichem is provided in Section 9.1.7.1.

⁶⁶⁷ Reply of Synseal to question 31 - Phase I Questionnaire to customers (S-PVC) ID5356.

⁶⁶⁸ Replies to question 32 - Phase I Questionnaire to customers (S-PVC); and replies to question 54 - Phase II Questionnaire to additional customers (S-PVC).

⁶⁶⁹ Reply of Eurocell to question 26 - Phase I Questionnaire to customers (S-PVC) ID3886.

⁶⁷⁰ Reply of Aliaxis to question 27 - Phase I Questionnaire to customers (S-PVC) ID2568.

⁶⁷¹ Reply of Bilcare to question 26 - Phase I Questionnaire to customers (S-PVC) ID5420.

⁶⁷² Non-confidential version of the agreed minutes of a conference call with Profine of 15 May 2013 ID5208.

*"... imports constitute a very sensitive issue at the moment among PVC suppliers ... some of them may decide to retaliate if a customer starts switching volumes to US exporters."*⁶⁷⁴

- (939) As regards the Notifying Parties' argument according to which customers would already be threatening to switch to imports. Vinnolit explains that *"Customers have occasionally threatened to start importing from other regions, but there has not been much imported volume, that is to say an estimated maximum of 4-5% of total consumption. This figure has remained stable over the years."* Therefore, this "threat" is not new to the market and has never really materialised. Moreover, despite the fact that INEOS considered the United Kingdom as [...] * already in 2007,⁶⁷⁵ imports still have a *de minimis* market share by sales volumes in the British market, that is to say 4%.⁶⁷⁶
- (940) Competitors largely share the views expressed by customers. Ercros, Shin-Etsu and Vinnolit agree with customers that imports do not play an important role in the EEA market and possible sub-segments thereof. Anwil, FortisChem, Kem One and Vestolit believe that they play a role in certain countries only, that is to say in countries with access to international sea ports and, mainly, in the Mediterranean area.⁶⁷⁷ Only Mexichem stresses the importance of imports as such.⁶⁷⁸ To justify this position, competitors also point to a number of major hurdles, which essentially repeat what was already highlighted by customers.
- (941) In this regard, Anwil, Ercros, FortisChem, Kem One and Shin-Etsu state that they do not experience an increased competitive pressure from North American S-PVC suppliers.⁶⁷⁹ While Ercros and Kem One believe that the threat could materialize in the future, assuming the appropriate logistics arrangements are established, Shin-Etsu disagrees and emphasises that this threat is unlikely to materialize.
- (942) Finally, 70% of the customers do not expect an increase in imports of commodity S-PVC from North America over the next two-three years.

*"....Currently, U.S. suppliers tend to target Russia and the Middle East, and an improving domestic economy will act as an additional brake on imports to Europe."*⁶⁸⁰

*"... it is very difficult to forecast how long it will take for imports to become a regular and sizeable source of supply. However, the process should probably take at least 3 to 5 years."*⁶⁸¹

⁶⁷³ Non-confidential version of the agreed minutes of a conference call with Tessenderlo Chemie of 17 May 2013 ID5226.

⁶⁷⁴ Non-confidential version of the agreed minutes of a conference call with Deceuninck of 17 May 2013 ID5243.

⁶⁷⁵ INEOS' internal document, "[...]"* of 9 May 2007

⁶⁷⁶ Form CO, Section 6, Part A, "Commodity S-PVC", Annex A10.

⁶⁷⁷ Replies of Anwil, FortisChem and Kem One to question 36 - Phase I Questionnaire to competitors (S-PVC) ID3994, ID4710, ID2653.

⁶⁷⁸ Replies to question 36 - Phase I Questionnaire to competitors (S-PVC).

⁶⁷⁹ Replies to question 39 - Phase I Questionnaire to competitors (S-PVC).

⁶⁸⁰ Reply of KP Films to question 49 - Phase I Questionnaire to customers (S-PVC) ID5362.

⁶⁸¹ Non-confidential version of the agreed minutes of a conference call with Profine of 15 May 2013 ID5208.

- (943) Anwil, Fortischem, Shin-Etsu and Vinnolit do not expect the role of imports of any origin to change over the next two-three years.⁶⁸² However, some competitors are genuinely concerned about the shale gas revolution.⁶⁸³ Shin-Etsu, however, downplays this by stating that: "*All other conditions remaining equal the price advantage for the US will slightly decrease.*"⁶⁸⁴ Anwil explains that local S-PVC suppliers are much closer, much more flexible and provide higher quality than importers, who face bureaucracy, high transport costs and no growth prospects in the EEA market.⁶⁸⁵ It also points out that China, India and Russia are much more attractive markets for North American players and that a United States recovery cannot be discarded.⁶⁸⁶
- (944) The Commission concludes that an increase of North American imports due to the shale gas revolution is unlikely to materialize over the next two-three years. The evidence referred to in this section suggests that these imports will in any event remain limited because of structural peculiarities affecting the EEA and, even more, the NWE market.⁶⁸⁷
- (945) The Notifying Parties' internal and public documents also show that importers only play a limited role.
- (946) In particular, the Notifying Parties' internal documents show that the time frame within which there could be significant North American imports into the EEA may be longer than two-three years.
- (947) Solvay's pre-Transaction position regarding North American imports is set out in a 2012 investor presentation, where Solvay clearly states that "*No major PVC capacity expected to come online by '16 ... Exports oriented towards countries in structural capacity deficit.*"⁶⁸⁸

⁶⁸² Replies to question 38 - Phase I Questionnaire to competitors (S-PVC).

⁶⁸³ Replies to question 40 - Phase I Questionnaire to competitors (S-PVC).

⁶⁸⁴ Reply of Shin-Etsu to question 38 - Phase I Questionnaire to competitors (S-PVC) ID4717.

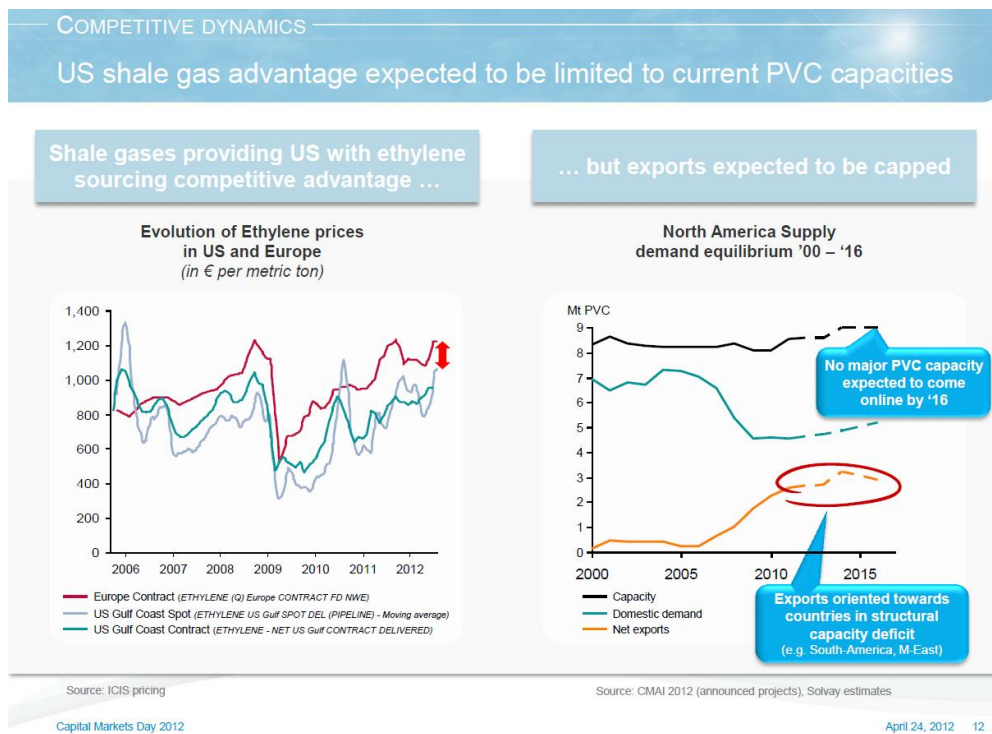
⁶⁸⁵ Reply of Anwil to question 38 - Phase I Questionnaire to competitors (S-PVC) ID3994.

⁶⁸⁶ Reply of Anwil to question 39 - Phase I Questionnaire to competitors (S-PVC) ID3994.

⁶⁸⁷ The possible knock-on effects of the shale gas revolution on exports from European suppliers and the alleged redeployment of export capacity to serve the NWE is discussed in Section 9.1.8.2.

⁶⁸⁸ Solvay's investor presentation, "Vinyls Supporting Demographic Needs and Well-Being Aspirations Capital Markets Day" of 24 April 2012, Slide 12.

Figure 23: United States Shale Gas Competitive Dynamics according to Solvay



Source: Solvay's investor presentation

- (948) The Notifying Parties stated that the extract displayed in Figure 20 was dated April 2012 and would therefore no longer be representative of Solvay's current view. However, it appears that in another presentation dated September 2012 Solvay still reiterates the concept that [...]*⁶⁸⁹

Figure 24: New Rules in PVC Resin according to Solvay

[...]*

Source: Solvay's customer presentation

- (949) In addition, INEOS' internal documents show that Solvay's opinion as regards the limited threat from imports is also shared by INEOS. In an internal document, INEOS itself considers that [...]*⁶⁹⁰ Another INEOS' internal document clearly states on this subject: [...]*⁶⁹¹

Figure 25: Shale Gas Revolution Impact on the European Market According to INEOS

[...]*

Source: INEOS

⁶⁸⁹ Solvay's customer presentation, "Global PVC Market" of September 2012, Slide 13.

⁶⁹⁰ INEOS' internal document, "Vinyls Strategy Presentation" of 10 December 2012, Slide 12.

⁶⁹¹ INEOS' internal document, "Kerling PLC" (untitled) of 13 September 2012.

9.1.7.1. Mexichem

- (950) The Notifying Parties reiterate, on several occasions, that Mexichem is the example of a successful importer, which is already exerting competitive pressure on them in NWE.⁶⁹²
- (951) The Commission held two conference calls with Mexichem to better understand the extent of its commitment to the EEA and, NWE in particular, as well as its capability to become a credible player in NWE.
- (952) First, Mexichem is a *de minimis* player by sales volume in NWE ([0-5]*% market share) and also in the EEA.⁶⁹³ It also appears that in 2012 Mexichem has reduced rather than expanded its sales into the EEA, selling in 2012 approximately half of its 2011 export output.⁶⁹⁴
- (953) Second, Mexichem has spare capacity to invest in export markets. However, EEA is only one of those export market. Indeed, Mexichem's regards the United States, Mexico and South America as "*its most strategic markets*", while also aiming at increasing its presence in other international markets such as Turkey, EEA and India.⁶⁹⁵
- (954) Third, despite the Notifying Parties' reliance on Mexichem as an example of a successful importer, Mexichem's experience actually proves the opposite. Mexichem explains that there are "*important competitive advantages in operating in Europe as a local player rather than a pure importer*."⁶⁹⁶ In fact, Mexichem has started to develop local presence, not only by renting warehouses, but also by setting up local offices and even acquiring other companies in Europe.⁶⁹⁷
- (955) Fourth, its plan to significantly expand its presence in the EEA heavily depends on the success of two other strategies.⁶⁹⁸ On one hand, its vertical integration strategy, as described in Section 11.1.2.1., and on the other, its establishment in EEA as fully-fledged local player. Therefore, it cannot be guaranteed that Mexichem will in fact develop into a competitive force in NWE.
- (956) Fifth, even if all of the other circumstances fully materialized, Mexichem's entry in NWE as a credible player would not be timely. Mexichem itself expects to become an important player in the next 5-6 years, that is to say a time frame exceeding the assessment of the JV's impact on competition.⁶⁹⁹

⁶⁹² Response to the SO, Paragraphs 6.56 *et seq.*

⁶⁹³ Form CO, Section 6, Part A "Commodity S-PVC", Annex A10. It is worth nothing that these market shares do isolate commodity S-PVC sales only.

⁶⁹⁴ Form CO, Section 6, Part A "Commodity S-PVC", Annex A10.

⁶⁹⁵ Non-confidential version of the agreed minutes of a conference call with Mexichem of 27 November 2013 ID5292.

⁶⁹⁶ Non-confidential version of the agreed minutes of a conference call with Mexichem of 27 November 2013 ID5292.

⁶⁹⁷ Non-confidential version of the agreed minutes of a conference call with Mexichem of 10 July 2013 . ID5206.

⁶⁹⁸ Non-confidential version of the agreed minutes of a conference call with Mexichem of 27 November 2013 ID5292.

⁶⁹⁹ Non-confidential version of the agreed minutes of a conference call with Mexichem of 27 November 2013 ID5292.

- (957) Finally, as acknowledged by the Notifying Parties, the Commission found in its market investigation that the United Kingdom is more exposed to imports than other countries in the EEA. However, despite the fact that INEOS considered the United Kingdom as [...] in 2007,⁷⁰⁰ imports, that is to say Mexichem, still have a very small market share by sales volumes in the British market, that is to say [0-5]*%.⁷⁰¹
- (958) In the Response to the SO, the Notifying Parties in essence confine their comments to Mexichem's position in the United Kingdom, rather than NWE as a whole. They claim that, according to the latest trade data, Mexichem gained a [10-20]*% market share in the British market.
- (959) The Notifying Parties' persistent focus on the United Kingdom would only be meaningful in the event the relevant geographic market was limited to this country, which the Notifying Parties do not seem to argue. The Commission believes that this assessment should include the whole of NWE. Under this perspective - and assuming for the sake of argument that all sales from the United States, Colombia and Mexico originate from Mexichem - Eurostat data show that imports into NWE (minus Norway) have increased of only 17 kt over the 2007-2013 period (from [...] kt to [...] kt). This is far from the prospects submitted by the Notifying Parties.
- (960) Moreover, even if one were to argue that the United Kingdom example is somehow representative of the trends in the whole NWE region, the following can be noted. Based on the Notifying Parties' own best estimates the British market amounted to 378 kt in 2012, and has been decreasing over the 2008-2012 period. Assuming it remained stable in 2013, Mexichem's [10-20]*% would amount to around [...]*, which is only an absolute increase of [...]* of additional sales relative to 2012.
- (961) This moderate increase took place in a very specific competitive setting. First, INEOS closed down Runcorn's S-PVC plant in the United Kingdom in the first quarter of 2013. While the Notifying Parties point out that this had no impact on output levels, it cannot be excluded that the closure affected the competitive dynamics at country level, for example, in the context of INEOS' negotiations with British customers. Second, the United Kingdom is the only major NWE market, where a single company has a [60-70]*% market share based on 2012 data, for example, in France INEOS is the market leader with a [30-40]*% and in Germany INEOS is the market leader with a [30-40]*%. Third, the United Kingdom is a very high priced country. It is consistently above the NWE average and, over the 2011-2012 period, prices have increased more than in any other NWE country. Fourth, INEOS' internal documents suggest that INEOS already regarded this country as [...] in 2007, that is to say before the recent closure of Runcorn. Fifth, being an island, the United Kingdom necessarily presents some specific features that make it more penetrable for imports than continental NWE.
- (962) Mexichem, however, only moderately increased its sales in the United Kingdom in 2013 compared to 2012.

⁷⁰⁰ INEOS' internal document, "INEOS ChlorVinyls Acquisition Strategy" of 9 May 2007.

⁷⁰¹ Form CO, Section 6, Part A "Commodity S-PVC", Annex A10. In their Response to the SO, the Notifying Parties contest this [0-5]*% and explain that Mexichem would have today [10-20]*% of the British market according to the latest trade data, which is unfortunately not identified.

(963) Finally, the Commission believes that the United Kingdom is in any event not representative of the trends in NWE at country level. An analysis of Eurostat data shows that over the 2007-2013 period imports have generally decreased (Belgium, Germany, the Netherlands) or remained stable (France), only the United Kingdom featuring a notable increase.

Table 11: Evolution of Imports from United States, Mexico and Colombia into the Main NWE Countries⁷⁰²

(964) Country	(965) Volume (kt) 2007	(966) Volume (kt) 2010	(967) Delta (kt) 2007-10	(968) Volume (kt) 2013	(969) Delta (kt) 2007-13
(970) Belgium	(971) 39	(972) 45	(973) 7	(974) 31	(975) 8
(976) France	(977) 2	(978) 0	(979) 1	(980) 6	(981) 4
(982) Germany	(983) 13	(984) 6	(985) 8	(986) 3	(987) 11
(988) Netherlands	(989) 12	(990) 1	(991) 11	(992) 1	(993) 11
(994) United Kingdom	(995) 1	(996) 1	(997)	(998) 52	(999) 41

Source: Eurostat

(1000) **Table 11** shows a marked misalignment between the United Kingdom and other NWE countries as far as export trends are concerned. For this reason, no solid inferences for NWE as a whole can reliably be drawn from the 2013 moderate increase of imports by Mexichem in the United Kingdom.

⁷⁰²

Other NWE countries such as Denmark, Ireland, Luxembourg and Sweden do not present any meaningful trend because imports remained close to zero over the above time period. Norway is not reported in the data set, but has remained a very small market over the years (between 15 and 16 kt per annum).

(1001) Therefore, the Commission concludes that Mexichem is not capable of exerting a significant constraint on the JV post-Transaction.

(1002) It is unlikely, therefore, that imports will be able to exert a significant competitive constraint on the JV post-Transaction. Quite to the contrary, imports do not play an important role in the market for commodity S-PVC at the moment and are unlikely to increase to such an extent as to constrain the behaviour of the JV post-Transaction.

9.1.8. Assessment of the cumulative effect of competitors' reaction

(1003) In Sections 9.1.5. - 9.1.7., the Commission has proven that none of the Notifying Parties' competitors individually could offset a price increase by the JV post-Transaction.

(1004) The Notifying Parties however claim that sufficient alternative suppliers of commodity S-PVC remain present in the market, that those are able to expand or reorient their production and that this would act as a significant competitive constraint on the JV. As such, the reaction of all competitors, taken as a whole, would be sufficient to offset a price increase by the JV post-Transaction.

(1005) According to the Commission's Horizontal Merger Guidelines:

"When market conditions are such that the competitors of the merging parties are unlikely to increase their supply substantially if prices increase, the merging firms may have an incentive to reduce output below the combined pre-merger levels, thereby raising market prices. The merger increases the incentive to reduce output by giving the merged firm a larger base of sales on which to enjoy the higher margins resulting from an increase in prices induced by the output reduction. Conversely, when market conditions are such that rival firms have enough capacity and find it profitable to expand output sufficiently, the Commission is unlikely to find that the merger will create or strengthen a dominant position or otherwise significantly impede effective competition."⁷⁰³

(1006) In the following, the Commission assesses the ability and incentives of the Notifying Parties' NWE competitors to expand output sufficiently, so as to cumulatively offset a likely price increase by the JV post-Transaction.

9.1.8.1. Ability

(1007) The detailed analysis presented in Sections 9.1.5. - 9.1.7. shows that in NWE in 2012 there was an aggregate level of spare capacity equal to [...] kt/y. Such spare capacity has been held by Kem One ([...] kt/y), Shin-Etsu ([...] kt/y), Vinnolit ([...] kt/y) and Vestolit ([...] kt/y). Cumulatively, this spare capacity accounts for 20% of the commodity S-PVC demand in NWE in 2012 ([...] kt out of [...] kt).

(1008) The Commission notes that 70% of the 2012 spare capacity in NWE is in the hands of Kem One. The ability of NWE players to collectively constrain the behaviour of the JV post-Transaction will therefore depend to a very large extent on Kem One's behaviour, given that the other players lack sufficient spare capacity to expand output significantly.

⁷⁰³ Horizontal Merger Guidelines, Paragraph 32-33.

- (1009) In that respect, the Commission recalls that, as noted in Section 9.1.5.1., there is still significant uncertainty as to whether Kem One will be able to become a credible competitor in the future. This will depend on the full and timely implementation of its restructuring plan. As such, it is doubtful that NWE players, even cumulatively, can be considered as able to offset a likely price increase by the JV post-Transaction.
- (1010) The level of spare capacity in NWE, however, could be higher if one were to also take into account as available capacity: (i) the capacity used by NWE players to export outside NWE; and (ii) the capacity used by Vinnolit and Vestolit to produce specialty S-PVC.
- (1011) With regard to Kem One, Shin Etsu, Vinnolit and Vestolit, these players have exported in 2012 respectively [...] kt, [...] kt, [...] kt and [...] kt of commodity S-PVC, which amounts to a total of [...] kt/y of sales outside NWE. This correspond to [20-30]% of the commodity S-PVC demand in NWE in 2012 ([...] kt out of [...] kt).
- (1012) The Commission notes that, as discussed in Section 7.2.2., NWE players have not increased their output in NWE as a reaction to a price increase in that area in the recent past. As such, it is unlikely that they would do so in the future as a reaction to a likely price increase by the JV post-Transaction.
- (1013) Moreover, more than 65% of the sales outside NWE were made by Kem One. As such, the potential repatriation of exports into NWE to offset a likely price increase by the JV post-Transaction will depend to a very large extent on Kem One's behaviour. As discussed in Section 9.1.5.1, there is still significant uncertainty as to whether Kem One will be able to become a credible competitor, as this depends on the full and timely implementation of its restructuring plan.
- (1014) With regard to Vinnolit and Vestolit, these players have respectively sold in 2012 [...] kt and [...] kt of specialty S-PVC in NWE and outside NWE, which amounts to approximately [10-20]% of the commodity S-PVC demand in NWE in 2012 ([...] kt out of [...] kt).
- (1015) Vinnolit and Vestolit could, in principle, increase their output by changing their production mix and switching the capacity currently used to produce specialty S-PVC production (respectively, [...] kt/y and [...] kt/y, that is to say a total of [...] kt/y) to commodity S-PVC. However, as discussed above in Sections 9.1.5.3. and 9.1.5.4., Vinnolit and Vestolit are essentially suppliers of speciality S-PVC. They have made investments over the years in order to adjust and optimize their production and established a strong foothold in these markets. Vestolit explains also that co-polymers margins are higher than commodity PVC margin which further reduces incentive to divert sales.⁷⁰⁴ It is therefore unlikely that these companies would change their strategy as a result of a likely price increase in commodity S-PVC.
- (1016) Vestolit explains that producing co-polymers is a complex process, which requires time and investment. Moreover, Vestolit explains that the decision to produce copolymers was "*a strategic decision made 40 years ago because they thought it*

⁷⁰⁴ See minutes of the conference call of 21 November 2013 with Vestolit. The Commission does not any reason to consider co-polymers different from speciality S-PVC.

*would have advantages for some customer applications like e.g. window profiles."*⁷⁰⁵ This is evidence of Vestolit's enduring commitment to this specific segment.⁷⁰⁵ Overall, this calls into question its ability to redesign the production mix and undo the adjustments and investments made over the years.

- (1017) The Commission therefore concludes that it is questionable whether the NWE players taken together would have the ability to expand output sufficiently so as to offset a likely price increase by the JV post-Transaction.

9.1.8.2. Incentive

- (1018) As discussed in Section 9.1.2., the Commission has concluded that previous merger cases in the S-PVC industry involving INEOS would not have raised competition concerns, amongst other reasons because the rivals of the JV had a certain degree of spare capacity available to expand output. In that regard, the Commission has considered in both cases spare capacity levels representing 20-30%⁷⁰⁶ of total demand, together with other factors, to be sufficient to offset the competition problem and prevent a price increase in the relevant market or in a part of it.

- (1019) In previous merger cases in the S-PVC industry involving INEOS, the Commission has limited itself to an analysis of the amount of spare capacity available in the relevant market. The Commission has therefore only assessed the ability of rivals to expand output.⁷⁰⁷ In these cases, the Commission has not assessed in detail the incentive of rivals to the merger entity to expand output sufficiently so as to offset a potential price increase.

- (1020) As discussed in Section 9.1.2., the Commission has found evidence that at least INEOS' acquisition of Tessenderlo in 2011 has enabled INEOS to increase Commodity S-PVC prices in NWE. As such, the Commission considers that at least in the case of INEOS' acquisition of Tessenderlo the mere theoretical ability of competitors to expand output, together with the other countervailing factors considered in the decisions, has not been sufficient to prevent anticompetitive effects.

⁷⁰⁵ Non-confidential version of agreed minutes with Vestolit of 21 November 2013 ID5215 "Vestolit cannot estimate the cost of the investments necessary for such production facilities, because they were done long ago. However, it indicated that, although the type of investment depends on the plant, it may imply the replacement of the whole polymerization, the introduction of specific logistics to store comonomers or precursors, the upgrade S-PVC reactor and other facilities, as well as investments to keep it up-to-date. The upgrade of an S-PVC plant to a co-polymer plant is therefore a complex one and also entails space issues for storage and other facilities. As regards the time frame for a conversion of a production line from S-PVC to co-polymers, Vestolit estimates that, if the plant presents all elements to accommodate the conversion, this would range between 1 and 1,5 years (minimum 0,5 year for the procurement of the equipment and 0,5 year for the installation). For Vestolit this was a strategic decision made 40 years ago because they thought it would have advantages for some customer applications like for example window profiles. "

⁷⁰⁶ Commission's decision of 30 January 2008 in Case No COMP/M.4734 INEOS/Kerling, paragraph 135; and Commission's decision of 26 July 2011 in Case No COMP/M.6218 INEOS/Tessenderlo Group S-PVC Assets, paragraph 35.

⁷⁰⁷ See in particular; Commission's decision of 30 January 2008 in Case No COMP/M.4734 INEOS/Kerling, paragraphs 123-139 and 179; and Commission's decision of 26 July 2011 in Case No COMP/M.6218 INEOS/Tessenderlo Group S-PVC Assets, paragraphs 35 and 36.

- (1021) For those reasons, and in line with the Commission's Horizontal Merger Guidelines,⁷⁰⁸ the Commission has also assessed in this case whether competitors would have the incentive to expand output sufficiently, that is to say whether they would find it profitable to expand output so as to offset a likely price increase by the JV post-Transaction. This analysis is without prejudice to the Commission's conclusion set out in Section 9.1.8.1. that NWE players' ability to expand output sufficiently is questionable.
- (1022) At the outset, the Commission notes that the post-Transaction market structure would be such that the largest three firms by sales (that is to say the JV, Kem One and Shin-Etsu) would hold more than [80-90]*% of sales within NWE. The market would therefore be highly concentrated.
- (1023) As stated in the Commission's Horizontal Merger Guidelines,⁷⁰⁹ following a horizontal merger, a price increase from the JV shifts some demand to competitors and reduces the competitive pressure on those competitors.
- (1024) When faced with an increase in demand following a price increase by the JV, therefore, the Notifying Parties' competitors would generally respond by increasing their price and expanding production or redirecting their output into NWE, or possibly both. Reactions by rivals of the merging parties in a concentrated market can therefore generally be expected not to be sufficiently strong to make a price increase unprofitable for the JV.⁷¹⁰
- (1025) This prediction remains applicable also in the presence of spare capacity pre-Transaction. In particular, in an oligopolistic market, competitors do not necessarily have an incentive to expand output up to the full capacity utilization, as it can often happen that the profit maximizing level of output is below maximum capacity. Even in markets which are characterised by levels of spare capacity at the industry level such as in this case, therefore, a merger which leads to a substantial consolidation of production capacities can be expected to lead to significant non-coordinated effects, as described at Paragraph 24 of the Horizontal Merger Guidelines.⁷¹¹
- (1026) Thus, in a mature, concentrated market where the degree of product homogeneity is very high, such as the market for commodity S-PVC in NWE,⁷¹² reactions by rivals

⁷⁰⁸ Horizontal Merger Guidelines, Paragraph 32-33.

⁷⁰⁹ Horizontal Merger Guidelines, Paragraph 24: "*Non-merging firms in the same market can also benefit from the reduction of competitive pressure that results from the merger, since the merging firms' price increase may switch some demand to the rival firms, which, in turn, may find it profitable to increase their prices. The reduction in these competitive constraints could lead to significant price increases in the relevant market.*"

⁷¹⁰ The main exception to this general conclusion would be price competition in homogeneous products in the absence of capacity constraints (standard Bertrand competition). However, this theory leads to perfectly competitive outcomes (that is to say prices at marginal costs) as long as there are two competitors in the market. As prices are substantially above marginal costs in the market pre-Transaction, this extreme form of competition does not apply in the present case.

⁷¹¹ See Case No. M.6471 *Outokumpu / Inoxum* (2012), Recital 395.

⁷¹² See also Case No. M.6471 *Outokumpu/Inoxum* (2012), Recital 395: "[...] in a market with relatively homogeneous goods, the competitive pressure on any given firm, and hence a firm's market power, depends inter alia on the level of production capacity of competitors and on whether competitors can enter or expand production within a short period of time to meet demand."; and Recital 399: "*Even if firms in the industry have a degree of spare capacity as in the present case, the merged entity will still*

of the merging parties even in the presence of spare capacity can generally be expected not to be sufficiently strong to make a price increase unprofitable for the JV.

- (1027) In this case, therefore, non-merging parties, that is to say Kem One and Shin-Etsu, can most likely be expected to benefit from the reduction of competitive pressure between INEOS and Solvay, which will result from the Transaction. Those rivals are therefore expected to refrain from making full use of their spare capacity, when available, to expand output so as to offset a price increase by the JV post-Transaction.⁷¹³ Conversely, they would likely expand output to some extent and increase their prices.
- (1028) This behaviour is implicitly recognised in the BE Model submitted by the Notifying Parties. As discussed more in detail in Section 9.1.13.3. and in **Annex B**, the BE Model predicts a price increase from the Transaction, despite the presence of spare capacity of NWE suppliers. This price increase arises from the consolidation of capacity brought about by the Transaction and is not offset by the collective constraint imposed by rivals on the merging parties, even accounting for their level of spare capacity. This means that, according to the results of the BE Model, the Notifying Parties' competitors will have no incentive, as well as no ability, to expand output sufficiently so as to offset a likely price increase by the JV post-Transaction.
- (1029) Moreover, the quantitative analysis of the impact on prices of previous consolidation involving INEOS presented in Section 9.1.2.8. provides insights into the incentive of rivals to constrain the JV, by either relying on their spare capacity or reorienting sales outside NWE into NWE. This quantitative analysis indicates that INEOS was able to increase prices in NWE in the past, in particular after the INEOS/Tessenderlo merger. The evidence presented in **Figure 19** to **Figure 22** shows that all competing suppliers had sales outside NWE as well as spare capacity. Despite this, INEOS managed to increase prices in NWE. This is direct evidence of the absence of rivals' incentive to expand output sufficiently so as to offset a likely price increase by the JV post-Transaction.
- (1030) In their Response to the SO, the Notifying Parties have essentially argued that NWE competitors would have an incentive to increase their output as a reaction to a price increase by the JV, as having a high utilisation rate is important for S-PVC suppliers.

face significantly less rival capacity and less rival spare capacity post-merger than each of the merging firms is facing pre-merger (because the merger combines the capacities of the merging parties). This reduction in countervailing capacity reduces the competitive pressure on the merged entity relative to the competitive pressure on each of the merging firms pre-merger. As a result, the consolidation of levels of capacities as encountered in the present case through a merger will, in general, increase the market power of the merged entity. The ensuing price increase in turn also reduces the competitive pressure on rivals."

⁷¹³ Whenever a company holds spare capacity, it is likely that its optimal response to a price increase would be to increase production rather than redirecting exports or changing the production mix. In fact, redirection or changing the production mix (producing more Commodity S-PVC) implies a loss of margins attached to those volumes, while increasing level of production does only imply additional margins. Increasing production is thus a preferred option relative to redirection. Therefore, the presence of spare capacity combined with the evidence of a lack of incentives to use spare capacity, a fortiori also implies a lack of incentive to either redirect sales or change production mix.

- (1031) The Commission however notes that the Notifying Parties have not challenged the validity of the economic framework of analysis presented in this Section, nor contested its applicability to the S-PVC industry. In addition, the Notifying Parties have not commented in their Response to the SO on the fact that even the BE Model they have submitted predicts a price increase.
- (1032) The Notifying Parties have also argued that even if imports in NWE did not increase, the important advantage of shale gas gained by North American players will lead NWE players to lose competitiveness against those competitors for sales outside the EEA. This would force them to repatriate in the future a large part of their exports ("knock-on effect").
- (1033) The Commission in this regard firstly notes that IHS does not forecast a reduction of exports from NWE for the next five years.⁷¹⁴ Shin-Etsu's opinion also appears to dismiss the Notifying Parties' argument, as according to the company several important markets such as Turkey feature anti-dumping duties against North American products.⁷¹⁵
- (1034) In addition, the Commission notes that exports from the EEA and particularly in NWE in recent years have not decreased. The shale gas was introduced in North America a few years ago, but it appears that for the time being it has not resulted in any forced repatriation of exports from the EEA. This is consistent with the increasing trend of INEOS' exporting pattern as described in Recital (707) and in particular INEOS' exports to the RoW area.
- (1035) Furthermore, the ability to export offers an alternative way to maintain a high utilization rate without necessarily having to increase sales in NWE. Thus the existence of exports alleviates such potentially binding constraint of high utilization rate.
- (1036) Lastly, that knock-on effect can also be accommodated by the BE Model described in in Section 9.1.13.3 and in **Annex B**. A redirection of current exports is similar in its effect to an increased available effective capacity. The scenarios considered in **Annex B** show that the price increase resulting from the Transaction is still present even when higher effective capacity levels are taken into account.
- (1037) In conclusion, the Commission considers that commodity S-PVC suppliers located in NWE and EEA suppliers located outside of this region, even cumulatively, do not have the incentive to expand their output sufficiently so as to offset a likely price increase by the JV post-Transaction.

⁷¹⁴ The Notifying Parties have submitted to the Commission the 2013 and 2014 IHS World Vinyls' Reports. Those reports, issued in late 2012 and 2013 respectively contain both historical data (starting from 2007) and detailed forecasts (2012 - 2018). IHS considers three main European regions, West Europe, Central Europe and Commonwealth of Independent States and the Baltics. Therefore countries of the EEA are included in each of those regions. Focussing on West Europe, data contained therein show as far as exports (from the region) are concerned that their lowest was in 2007 at 761 kt, peaked in 2012 at 1250 kt and are forecast to hover between 1 200 to 1 250 kt in the future (2013 to 2018).

⁷¹⁵ Agreed non-confidential version of the minutes of a conference call with Shin-Etsu held on 17 May 2013 ID5213.

9.1.9. Barriers to entry

- (1038) According to the Notifying Parties, there has been no new market entries in commodity S-PVC in the past five years in the EEA and they are not aware of any current plan to set up commodity S-PVC plants in the EEA within the next five years. They suggest that a brownfield expansion of capacity is much more likely than a greenfield entry. Finally, they seem to argue that, in this industry, barriers to entry should be understood as barriers to trade, given that non-EEA suppliers, such as Shin-Tech, Formosa Plastics, Axiall and Oxychem may increase sales of S-PVC in the EEA in the future.
- (1039) As regards greenfield entries, the Notifying Parties estimate that for setting up a standalone PVC plant, with a capacity of around 100 000 tonnes, an investment between EUR 120-150 million would be required, while the cost of a fully integrated chlorine to PVC unit would be about EUR 300 million.
- (1040) The Notifying Parties consider that there are no regulatory and certification barriers to entry, nor other restrictions created by the existence of intellectual property rights.
- (1041) The Commission has already addressed the Notifying Parties' arguments in relation to imports in Section 9.1.7.. Therefore, the following will not discuss any further the role of imports in NWE.
- (1042) In its market investigation, the Commission has found evidence confirming that the barriers to entry in the commodity S-PVC market are substantial. In particular, 87% of the customers consider that the market for commodity S-PVC features high barriers to entry for any new players, including S-PVC suppliers active in other geographic areas.⁷¹⁶ In that regard, customers mention, among other things, high investment costs, the decline of the construction market, the low growth potential of this market, high raw material costs, complex logistics, difficult qualification processes and even the strong position of INEOS and Solvay.

*"High capital cost and to our knowledge, there has been NO newcomer to the PVC market in Europe in the last 50 years, at least not as a producer of PVC resins."*⁷¹⁷

*"... A new player (f.e. a new importer) faces strong competition in the domestic markets, beside the hurdles such as currency volatility and evt. duty / Anti-dumping, paired with long transit times and expensive handling in Europe."*⁷¹⁸

- (1043) In that regard, Shin-Etsu even explains that *"Economic recovery to the levels of before 2008 will not happen over the next three years ... margins are below reinvestment levels."*⁷¹⁹ Therefore, it is highly doubtful that any meaningful entry will occur. This is also in line with the view of industry experts who explain that:

⁷¹⁶ Replies to question 73 - Phase I Questionnaire to customers (S-PVC). Competitors' views are inconclusive on this point, the Commission understands that their replies essentially focus on entry from other geographic areas; see replies to question 90 - Phase I Questionnaire to competitors (S-PVC).

⁷¹⁷ Reply of IVC to question 73 - Phase I Questionnaire to customers (S-PVC). ID2421

⁷¹⁸ Reply MB Barter & Trading SA ("MB Barter & Trading", Switzerland) to question 73 - Phase I Questionnaire to customers (S-PVC). ID2361

⁷¹⁹ Reply of Shin-Etsu to question 57 and 91 Phase I Questionnaire to competitors (S-PVC) ID 4717.

*"A sensible PVC producer either goes where there is a good cost base or good demand. If they want a good cost base they go to the US, if they want good demand they go to China. All in all, the European chemical industry is regionally the highest cost producer in the world and has very low demand."*⁷²⁰

(1044) 74% of the customers cannot identify any market entry or significant capacity expansion in the market for commodity S-PVC over the last three years.⁷²¹ Only two customers are aware of new entries or capacity expansions; however, they make reference to INEOS and Mexichem.⁷²² While INEOS is far from being a new entrant, Mexichem has made a *de minimis* entry in NWE ([0-5]*% based on 2012 data) and its role has been analysed at length in Section 9.1.7.1.

(1045) Five competitors out of six share this view. They explain that there was no market entry or significant expansion of capacity in commodity S-PVC over the last three years, due especially to low margins and difficult market conditions.⁷²³

(1046) The Commission therefore concludes that barriers to entry are high in the market for commodity S-PVC.

9.1.10. *Customer reaction would not prevent the significant anticompetitive effects of the Transaction*

(1047) The Notifying Parties argue in essence that costs or time delays in accrediting new S-PVC suppliers are not prohibitive and that customers face almost no costs when switching among S-PVC suppliers they have already accredited. They also argue that customers pursue multi-sourcing strategies to extract better prices and, in essence, wield significant buyer power.

(1048) In this Section, the Commission will assess the relevance of (i) customer switching; and (ii) multi-sourcing strategies. In Section 9.1.11., the Commission will assess the relevance of any alleged buyer power.

9.1.10.1. *Customer switching would not prevent the significant anticompetitive effects of the Transaction*

(1049) The Commission found in its market investigation that, on average, the time to accredit a new supplier is usually around six months and the direct costs associated with this process generally reach EUR 100 000, but sometimes much more. The accreditation process may even take up to 12 months for some types of cable manufacturers, up to 18 months for some types of profile manufacturers and up to 24 months for some types of film manufacturers.

(1050) Although qualifying a new supplier is not an unsurmountable barrier in this market, certification does entail difficulties. Most customers flagged that testing can be extremely complex, because it entails emptying silos and cleaning machinery and piping to avoid contamination between different grades and between different sources of each grade within the same grades.

⁷²⁰ Agreed non-confidential version of the minutes of a conference call with P.Hodges held on 4 July 2013 ID5209.

⁷²¹ Replies to question 74 - Phase I Questionnaire to customers (S-PVC).

⁷²² Replies of Legrand and MB Barter & Trading to question 74 - Phase I Questionnaire to customers (S-PVC) ID5361.

⁷²³ Replies to question 91 - Phase I Questionnaire to competitors (S-PVC).

- (1051) As mentioned in Section 6.5., customers qualify, on average, three or four suppliers for each of their plants. This trend can however vary also to a significant extent according to the specific K-value concerned. This is because customers qualify S-PVC suppliers for specific K-values or grades. That explains why continuous qualification of several suppliers for each K-value may be complex and burdensome from the customers' point of view.
- (1052) Five competitors out of five share a similar view. All of them agree that customers incur losses and face difficulties when trying to accredit new S-PVC suppliers.⁷²⁴ They point out the following:
- "Time to make lab and/or industrial tests, time and money to homologate in case of sensitive applications (CSTB, pharma, automotive...)."725*
- "They need to perform tests which mean manpower and they need to obtain approvals."726*
- "Product qualification requires a planned and controlled approach. Therefore specific logistics in the whole production process are necessary."727*
- (1053) Many customers also emphasise that their actual sourcing capabilities are constrained by the number of silos they have per plant, as products must be separated to avoid contamination. Increasing storage capacity is not always a viable option, because it involves significant investments, administrative authorizations and need for additional space.
- (1054) Other customers emphasise that switching to other S-PVC suppliers may not even be successful.⁷²⁸ For example, one customer explains: "... *We tried to switch from INEOS to Anwil, we resigned after three month, because it was not possible to create a formulation which works on all machines and we had high costs.*"⁷²⁹
- (1055) Those difficulties may justify why only 53% of the customers have accredited a new S-PVC supplier over the last three years.⁷³⁰ One customer that did accredit a new S-PVC suppliers explains that:
- "We did validate SolVin as a new source. The reason was that INEOS did buy the NorskHydro plant and after implementing into their business the product was far more expensive. We did feel under pressure to find a new fair source. At INEOS we have one product validated and by having the NorskHydro product included we could not manage to get it to the same price like before."731*
- (1056) The Commission also found that customers reallocate volumes among already accredited S-PVC suppliers once or twice per year, even though some customers

⁷²⁴ Replies to question 67 - Phase I Questionnaire to competitors (S-PVC).

⁷²⁵ Reply of Kem One to question 67 - Phase I Questionnaire to competitors (S-PVC) ID5427.

⁷²⁶ Reply of Shin-Etsu to question 67 - Phase I Questionnaire to competitors (S-PVC) ID4717.

⁷²⁷ Reply of Vinnolit to question 67 - Phase I Questionnaire to competitors (S-PVC) ID2533.

⁷²⁸ Replies to question 63 - Phase I Questionnaire to customers (S-PVC).

⁷²⁹ Reply of Aluplast to question 63 - Phase I Questionnaire to customers (S-PVC). ID 4869

⁷³⁰ Replies to question 13 - Phase II New Questionnaire to customers (S-PVC); and replies to question 24 - Phase II Questionnaire to additional customers (S-PVC).

⁷³¹ Reply of Amer-sil to question 13 - Phase II New questionnaire to customers (S-PVC) ID5172.

show some reluctance due to technical problems.⁷³² That being said, 61% of the customers also explain that they cannot equally rely on all their accredited S-PVC suppliers to cover their needs. This is due to several factors: not all of their S-PVC suppliers offer the entire range of K-values they need or the volume they need, quality issues, distance, reliability, etc.⁷³³

*"Only INEOS and SolVin offer the quality and reliability of SPVC K57. KEMONE is in a weak position (insolvency with uncertain future). Vinnolit has no K57 (our main product), just K60. Shin-Etsu Portugal just small volumes and Italy only."*⁷³⁴

*"No free volumes: Shin-Etsu K57, K60; very limited additional volumes for K67 and K70. Uncertain financial situation of Kem One, Ercros. Logistical disadvantage/long lead-times, low flexibility/high transport costs: generally from long distance sources. Quality issues, mainly Anwil. Force Majeure situations: very frequent from Kem One. Feed stock supply problems: Shin-Etsu May 2013 after maintenance and restart problems with VCM (also affected Cires, not only Pernis). Ercros not completely covered anymore with their own EDC after the closure of Flix, so uncertain supply situation."*⁷³⁵

(1057) The Commission therefore notes that customer switching in the S-PVC industry does not appear to be immediate, and actually implies costs and delays which do not make switching a possible reaction to a price increase under all circumstances.

(1058) The Commission also notes that, as mentioned in Section 9.1.3., there is a significant overlap between the actual customers of the Notifying Parties. Some customers have also stated that at present they rely on two main suppliers, INEOS and Solvay, and that post-Transaction they will depend entirely on the JV:

*"For our applications there are 2 "serious" suppliers (SolVin and INEOS). Another high volume supplier (Kem One) is in insolvency, it's survival is uncertain. No 4 (Vinnolit) participate with minor volumes of K60 and does not offer K57 (our main grade) any more. All other smaller suppliers are not suitable (quality, volumes, reliability)."*⁷³⁶

*"Not today but it could happen if INEOS/SolVin are merging. (number 1+number 2)."*⁷³⁷

(1059) Therefore, customers' switching opportunities would be diminished substantially as the Notifying Parties currently represent the main, or a very important, alternative supply options for customers. Customers and even one competitor voiced this concern very loudly:

⁷³² Replies to question 51 - Phase II New Questionnaire to customers (S-PVC) and to question 92 – Phase II Questionnaire to new (additional) customers.

⁷³³ Replies to question 52 - Phase II New Questionnaire to customers (S-PVC) and to question 93 – Phase II Questionnaire to new (additional) customers.

⁷³⁴ Reply of Bilcare Research to question 52 - Phase II New Questionnaire to customers (S-PVC). ID5170.

⁷³⁵ Reply of Renolit to question 52 - Phase II New Questionnaire to customers (S-PVC). ID4255.

⁷³⁶ Reply of Bilcare to question 52 - Phase I Questionnaire to customers (S-PVC) ID2394.

⁷³⁷ Reply of Kalan SAS (France) to question 52 - Phase I Questionnaire to customers (S-PVC) ID1393.

*"...the merged entity will become an unavoidable partner that no major customer could avoid, if it seeks for security of supply. This would give the merged entity a competitive edge that no one else in the market could match. Customers would not risk compromising their position vis-à-vis the merged entity, it would be too risky. In this regard, the merged entity would enjoy enormous negotiating power."*⁷³⁸

*"Competitors would only be able to compete for marginal volumes no customer would risk compromising its relationship with this player, which would then become an unavoidable partner."*⁷³⁹

- (1060) The Commission also notes that 52% of the customers stated that they do not expect to be able to reallocate some volumes post-Transaction.⁷⁴⁰ In particular, only 23% of the customers would try to switch more than 30% of their purchases from the Notifying Parties to other S-PVC suppliers, while less than 20% would try to switch less than 30% and another 23% would not switch volumes at all.⁷⁴¹ Customers also stress that, in the past, there were more suppliers in the market for commodity S-PVC and, therefore, a shift in purchases was possible in principle. However, market conditions have dramatically changed nowadays. As pointed out by one customer:

*"We would be very dependent on the JV. And we are only able to change a limited % because other suppliers can supply only a limited product range or quality."*⁷⁴²

- (1061) In their Response to the SO, the Notifying Parties present a number of arguments showing that, in their view, switching is easy and is not prevented in any way by customers' certification requirements. Moreover, customers' choice would not be diminished as a result of the Transaction, given that a large number of alternative suppliers would remain active on the market.
- (1062) The Commission notes that in spite of the arguments submitted by the Notifying Parties, on the basis of the elements presented in Recitals (1010) - (1020), there is a substantial share of demand for which switching is not immediate and may actually entail significant time and costs. In addition, as discussed in Section 9.1.1.2., Solvay is the closest competitor of INEOS and the remaining competitors would not constitute a satisfactory alternative for many players. It is reasonable, therefore, to conclude that customers' choice would be restricted as a result of the Transaction.
- (1063) Those arguments stand even when considering that, as discussed above in Section 9.1.2., there is evidence of customers switching away from INEOS after previous mergers in the industry. In fact, several customers explain that following those mergers INEOS increased prices, which suggests that (i) at least to some extent, the shift mentioned by the Notifying Parties may be due to a price effect rather than a

⁷³⁸ Non-confidential version of the agreed minutes of a conference call with Shin-Etsu of 17 May 2013 ID5213.

⁷³⁹ Non-confidential version of the agreed minutes of a conference call with Renolit of 22 May 2013 ID5228.

⁷⁴⁰ Replies to question 79 - Phase I Questionnaire to customers (S-PVC); and replies to question 91 - Phase II Questionnaire to additional customers (S-PVC).

⁷⁴¹ Replies to question 54 Phase II New questionnaire to customers (S-PVC); and replies to question 101 Phase II Questionnaire to additional customers (S-PVC).

⁷⁴² Reply of Alkor-Draka to question 55 - Phase II New Questionnaire to customers (S-PVC) ID4424.

genuine rebalancing of portfolios and (ii) the reallocation pursued by this group of customers did not prevent a price increase.⁷⁴³ The Commission notes in this respect that its quantitative analysis supports the conclusion that customer switching in the past has not been sufficient to prevent INEOS from increasing prices after its previous mergers.

- (1064) The Commission notes in any event that the BE Model submitted by the Notifying Parties and discussed in Section 9.1.13.3. and **Annex B** assumes no switching costs for customers. Even in those circumstances, which on the basis of the foregoing are not those of the commodity S-PVC industry, the BE Model predicts that the Transaction would give rise to a significant price increase. The Notifying Parties have not contested this finding in their Response to the SO.
- (1065) The Commission therefore concludes that (i) customer switching in the commodity S-PVC industry is not perfect, as it is limited by a number of factors such as certification costs and time, quality, geographic location of suppliers; (ii) the Transaction would in any event reduce customers' switching opportunities, as it will eliminate the closest and most credible alternative supply option to INEOS; (iii) customer switching has not prevented INEOS from increasing prices after previous mergers in the S-PVC industry; and (iv) in any event, even assuming perfect customer switching, the Transaction would still give rise to anticompetitive effects, as shown by the BE Model submitted by the Notifying Parties.

9.1.10.2. Customer multi-sourcing strategies would actually increase the significant anticompetitive effects of the Transaction

- (1066) The Notifying Parties claim that due to multi-sourcing, the commodity S-PVC market would feature dynamics similar to what the Commission has found in past cases in the hard-disk drive ("HDD") sector, that is to say the so-called "Conner Effect."⁷⁴⁴ In particular, the Notifying Parties argue that customers would be able and have incentives to shift volumes previously allocated to INEOS and Solvay pre-Transaction to other suppliers post-Transaction. This would be borne out by past experience following previous mergers in the commodity S-PVC industry.
- (1067) The Commission tested this argument in the context of the market investigation and considers that multi-sourcing strategies are not sufficient to offset the significant anticompetitive effects of the Transaction. If anything, multi-sourcing is likely to reinforce those effects. Given that it is common practice in the Commodity S-PVC market to allocate customers' needs across several suppliers, the reduction in the sources of supply post-Transaction may increase the likelihood of price increases on a given share of a customer's needs.
- (1068) First, given the importance of multi-sourcing for customers, it is likely that customers would divert only part of their purchases to the competitors of the JV. That implies that the JV will be able to retain more customer volumes that it may

⁷⁴³ For these reasons and for the other elements of the assessment on multi-sourcing discussed in Section 9.1.10.2., the fact that the combined market shares of the Notifying Parties may drop post-merger as a result of such switch is also irrelevant for the purposes of the assessment of the impact of the Transaction on the structure of the market as carried out in Section 9.1.1..

⁷⁴⁴ Case No M.5483 *Toshiba/Fujitsu HDD Business*, footnote 6 ("*Some customers that purchase from both companies will have to add a new supplier to keep the number of competing suppliers constant.*")

have otherwise possibly lost in the absence of the customers' multi-sourcing requirements. This likely increases the JV's incentive to charge higher prices.

- (1069) Second, multi-sourcing also implies that the competitors of the JV will have less incentive to compete fiercely to gain customers, because they will not be able to capture the full customers' needs, but only a part of it. Moreover, given that customers would be likely to switch regardless of the price offered by competitors, the latter have an incentive to accommodate rather than to undercut a price increase from the JV.
- (1070) Third, in a context where customers indicate that they would be willing to rely only on a relatively few suppliers as their primary sources and not only as back-up, multi-sourcing reinforces the effect of the Transaction, which is the reduction in the number of significant suppliers and removal of a significant constraining force from the market.
- (1071) Fourth, customers also stress that their multi-sourcing strategy will become ineffective because of the dramatic reduction of their sources of supply. This would be particularly true for customers purchasing less popular K-values, whose supply is already scarce. Despite capacity being used to produce different K-values, customers fear that no new S-PVC suppliers will enter the segment triggering a four-to-three, three-to-two or even a two-to-one scenario.

*"At the moment, Tessenderlo could redirect some of its purchases from INEOS to SolVin or Shin-Etsu, given that they are both qualified. However, the transaction will bring together two of Tessenderlo's three main sources of supply, thereby reducing its options from three to two or even from two to one in some cases."*⁷⁴⁵

*"KPF's choices are limited to a handful of suppliers. Over the last 20 years, the market has experienced significant consolidation, at least for K-values K57 and K60. In particular, K60 is produced by very few suppliers and is not subject to intense competition."*⁷⁴⁶

- (1072) In that regard, an INEOS pricing document clearly suggests that, in spite of the overcapacity advocated by the Notifying Parties, the availability of some K-value can become scarce even under the current market circumstances: "[...]*."⁷⁴⁷ Moreover, the existence of frequent *force majeure* events in the industry worsen the overall capacity situation, temporarily tightening the market. This, of course, makes multi-sourcing strategies more difficult to pursue and implement.
- (1073) In their Response to the SO, the Notifying Parties stated that the Commission's assessment is misplaced insofar it is based on the assumption that customers multi-

⁷⁴⁵ Non-confidential version of the agreed minutes of a conference call with Tessenderlo Chemie of 17 May 2013 ID5226.

⁷⁴⁶ Non-confidential version of the agreed minutes of a conference call with KP Films of 17 May 2013 ID3664.

⁷⁴⁷ INEOS' internal document, "S-PVC Pricing Note Europe" of July 2013, Page 3. In their Response to the SO, the Notifying Parties argue that [...]*. The Commission notes that this argument actually reinforces its conclusion as it proves that a *force majeure* event at one single line in NWE would be sufficient to create a shortage in a certain range of K-values. As discussed, for instance, in Section 7.2.8., *force majeure* events are relatively common in the S-PVC industry.

source for reasons other than price negotiations. In that respect, the Notifying Parties submit that 38 customers stated that they multi-source because of price negotiations or price more generally.⁷⁴⁸

- (1074) The Commission notes in this regard that its market investigation contains ample evidence that customers multi-source for reasons other than pricing. It is telling that the customers responding to the question cited by the Notifying Parties indicate factors other than price negotiations (mainly security of supply) as drivers for multi-sourcing strategies. As such, it is very likely that customers would switch to rivals of the JV post-Transaction, regardless of its pricing policy, in order to maintain different sources of supply. As discussed in Section 9.1.8.2., this will increase rather than counter the anticompetitive impact of the Transaction.
- (1075) The Notifying Parties also present the example of one of INEOS' customers, [...]*, to show that customers are price sensitive and switch in reaction to price increases enforced by their S-PVC suppliers. In particular, the Notifying Parties submit [...]*.
- (1076) The Commission considers that the example provided by the Notifying Parties is not informative as to the relevance of multi-sourcing strategies for the purposes of the competitive assessment. The information submitted by the Notifying Parties only shows that [...]* volumes have changed over time, but does not provide any explanation of the reasons for such changes. In particular, [...]* could have reduced or increased purchases for a number of reasons other than price, including the cyclicity of its downstream activities, or the availability of storage facilities at its disposal, which would allow the company to concentrate purchases in specific periods of time.
- (1077) The Commission notes in any event that [...]* is a customer based in [...]*, and therefore at least partially outside NWE. Moreover, the purchase patterns of one single customer cannot allow the Commission to draw inferences as to the behaviour of customers in general. Finally, during the 2007-2012 period Solvay was an independent force in the market. Therefore, [...]* purchasing patterns took place in a competitive environment, where the number 2 player was still in the market. The data submitted by the Notifying Parties are consistent with [...]* also purchasing substantial quantities from Solvay.⁷⁴⁹
- (1078) The Notifying Parties argue, in addition, that the Commission is wrong in assuming that if not all volumes are switched away, customers and competitors do not impose a substantial competitive constraint on the JV. According to the Notifying Parties, partial switching exerts a strong competitive constraint on suppliers, which would be sufficient to constraint the behaviour of the JV.
- (1079) The Commission notes that the Notifying Parties' views appear to stem from an apparent misunderstanding of the Commission's position. The Commission does not consider that only full switching would constitute a competitive constraint. The Commission considers however that in the presence of multi-sourcing, customers would likely be unable to divert the whole of their purchases to competitors. When compared to a scenario without multi-sourcing, this implies that the JV would always

⁷⁴⁸ See replies to question 54 - Phase I Questionnaire to customers (S-PVC).

⁷⁴⁹ Based on Solvay data, [...]* purchased from 2007 to 2012 respectively [...]* ton, [...]* ton, [...]* ton, [...]* ton, [...]* ton, [...]* ton.

maintain a potentially significant proportion of its volumes, given that customers would not be able to multi-source without purchasing at least part of their requirements from the JV, as discussed in Section 9.1.8.. This would result in an increase in the anticompetitive effects of the Transaction compared to a situation without multi-sourcing.

9.1.11. Buyer power

(1080) The Horizontal Merger Guidelines provide as follows:

*"Countervailing buyer power cannot be found to sufficiently off-set potential adverse effects of a merger if it only ensures that a particular segment of customers, with particular bargaining strength, is shielded from significantly higher prices or deteriorated conditions after the merger. Furthermore, it is not sufficient that buyer power exists prior to the merger, it must also exist and remain effective following the merger. This is because a merger of two suppliers may reduce buyer power if it thereby removes a credible alternative."*⁷⁵⁰

(1081) The Commission notes that the commodity S-PVC industry is characterised by a large number of customers facing a concentrated supply-side of the market. In those markets, customers do not generally hold any appreciable degree of buyer power, as they do not individually represent a large share of demand, and are therefore to a certain extent fungible with each other from a supplier's perspective.

(1082) In the context of the market investigation, the Commission has found that a small number of customers consider themselves as being able to exert a certain degree of buyer power. However, many other customers describe their position as weak or very weak. This is also in line with EUPC's statements at the Oral Hearing, where this trade association explained that S-PVC suppliers' customers include 55 000 companies, most of which are SMEs and in essence price takers.

(1083) Moreover, some other customers point out that their bargaining power will dramatically be reduced post-Transaction.⁷⁵¹

*"Already limited, because of the strong relation to an index determined by 2 companies in Europe."*⁷⁵²

*"Almost no power as a small company against big suppliers. Only power we have is to switch between approved sources."*⁷⁵³

*"We do have a strong position today. This may be weakened substantially if INEOS and Solvay form JV and most likely Kem One will disappear."*⁷⁵⁴

*"As one S-PVC Supplier gets progressively bigger through acquisition and becomes an even stronger price leader, more and more unnecessary pressure is put on Purchasers of S-PVC."*⁷⁵⁵

⁷⁵⁰ Horizontal Merger Guidelines, Paragraph 67.

⁷⁵¹ Replies to question 76 - Phase I Questionnaire to customers (S-PVC).

⁷⁵² Reply of Aluplast Group to question 76 - Phase I Questionnaire to customers (S-PVC). ID4869

⁷⁵³ Reply of Amer-Sil to question 76 - Phase I Questionnaire to customers (S-PVC) ID5428.

⁷⁵⁴ Reply of Bilcare to question 76 - Phase I Questionnaire to customers (S-PVC) ID5420.

⁷⁵⁵ Reply of Cork Plastics (Ireland) to question 76 - Phase I Questionnaire to customers (S-PVC) ID2319.

*"We are one of the biggest consumers in Central and Eastern Europe. Our demand does not depend on any particular market, which means stability for our supplier throughout the whole year. However we expect the situation to change after JV of INEOS and SolVin."*⁷⁵⁶

*"Wir sehen uns in einer schwachen Position. Da der Anbieterkreis immer kleiner wird, so wird der Verkäufer immer dominanter!"*⁷⁵⁷

*"in 2010 the buying power is bigger than 2011, 2012 and 2013: after 2011, more and more FMs took place on the PVC market which caused some availability issue; especially in 2013 the purchasing power has been reduced due to the Kem One event on the market and after the potential merger between INEOS and SolVin."*⁷⁵⁸

*"Weakening all the time with the steadily reducing options we have available to us."*⁷⁵⁹

(1084) Quite to the contrary, competitors in general perceive customers as having buyer power to exercise in negotiations with S-PVC suppliers, mainly due to the alleged existence of overcapacity.⁷⁶⁰ Those views, however, appear to be contrasted not only by the customers' views, and also by the fact that INEOS has been able to increase prices in the recent past (see Section 9.1.2.). This appears to be inconsistent with the existence of any appreciable degree of buyer power in the industry.

(1085) With regard to customer sponsoring of entry in the market, 56% of the customers would indeed be willing to sponsor a new supplier to limit the JV's market power.⁷⁶¹ However, they also point out, consistently with their replies on barriers to entry, that they do not expect any market entry in the near future.

*"New entry would be most welcome as the PVC market has been consolidated over decades. Any further reduction of market players would negatively shift the market balance and negatively influence the cost position of PVC products from the perspective of most customers."*⁷⁶²

"... we are already sourcing from all possible PVC producers in Europe today. Even if we are willing to help an existing player to expand, we fear that we are not able to obtain anything, because based on what all suppliers have told us, nobody in Europe is willing to make significant expansions of their production capacities. A new player (which means a new company building a new PVC

⁷⁵⁶ Reply of Ergis-Eurofilms S.A. ("Ergis-Eurofilms", Poland) to question 76 - Phase I Questionnaire to customers (S-PVC) ID2674.

⁷⁵⁷ Reply of Polymer-Chemie GmbH (Germany) to question 76 - Phase I Questionnaire to customers (S-PVC) ID4863.

⁷⁵⁸ Reply of Prysmian (the Netherlands) to question 76 - Phase I Questionnaire to customers (S-PVC). ID2754

⁷⁵⁹ Reply of Synseal to question 76 - Phase I Questionnaire to customers (S-PVC). ID5356

⁷⁶⁰ Replies to question 95 - Phase I Questionnaire to competitors (S-PVC): and replies of Kem One and Shin-Etsu to question 95 - Phase I Questionnaire to competitors (S-PVC). ID2653 and ID4717.

⁷⁶¹ Replies to question 77 - Phase I Questionnaire to customers (S-PVC); and replies to question 89 - Phase II Questionnaire to additional customers (S-PVC).

⁷⁶² Reply of KP Films to question 77 - Phase I Questionnaire to customers (S-PVC). ID5362

*plant) entering the European S-PVC market we do not see being realistic at all in the next at least 20 years and probably much longer than that."*⁷⁶³

*"After having lost an important number of players, plants and capacities over the last 20 years and given our expectation, that due to a lack of investments in the conversion of mercury cells and missing financial stability (f.e. Kem One) and as consequence of the merger SolVin/INEOS further capacities will be closed down, Europe will face a structural supply deficit within the next 5 years, especially for soft PVC. So any new capacity would be needed to equilibrate this structural supply deficit. Furthermore an independent new (or expanding existent) player would help to control pricing of the dominant SolVin/INEOS merger."*⁷⁶⁴

(1086) The Notifying Parties have not contested these findings in their Response to the SO.

(1087) The Commission therefore concludes that it is highly unlikely that customers of commodity S-PVC may exercise sufficient countervailing buyer power as to constrain the behaviour of the JV post-Transaction.

9.1.12. *Efficiencies*

9.1.12.1. Legal Framework

(1088) As recognised in the Horizontal Merger Guidelines, efficiencies brought about by mergers or equivalent corporate reorganisations may bring benefits which may counter-act the negative effects of the merger on competition.⁷⁶⁵ This will be the case when the Commission can conclude on the basis of sufficient evidence that the efficiencies generated by the merger are likely to enhance the ability and incentive of the JV to act pro-competitively for the benefit of consumers, thereby counteracting the adverse effects on competition which the merger might otherwise have.⁷⁶⁶

(1089) For the Commission to take account of efficiency claims in its assessment of the merger, the efficiencies have to benefit consumers, be merger-specific and be verifiable. Those conditions are cumulative.⁷⁶⁷ It is incumbent upon the notifying parties to provide in due time all the relevant information necessary to demonstrate that the claimed efficiencies are merger-specific, are likely to be realised and to what extent the efficiencies are likely to counteract any adverse effects on competition that might otherwise result from the merger, and therefore benefit consumers.⁷⁶⁸

9.1.12.2. Summary of Efficiency claims made by the Notifying Parties

(1090) In the Form CO, the Notifying Parties submitted that the Transaction would lead to annual variable cost savings of EUR [...] by the end of the [...] year of the JV, equivalent to [...]*.⁷⁶⁹ The information on synergies has been further expanded in the

⁷⁶³ Reply of Pipelife to question 77 - Phase I Questionnaire to customers (S-PVC). ID5280

⁷⁶⁴ Reply of Renolit to question 77 - Phase I Questionnaire to customers (S-PVC). ID5370

⁷⁶⁵ Paragraph 76.

⁷⁶⁶ Paragraph 77.

⁷⁶⁷ Paragraph 78.

⁷⁶⁸ Paragraph 87.

⁷⁶⁹ Unless otherwise stated, all of the annual savings discussed in this Section are estimates provided by the Notifying Parties for the [...]*.

Notifying Parties' Response to the SO, and in the response to an RFI by the Commission.⁷⁷⁰

- (1091) The efficiencies presented by the Notifying Parties were estimated on the basis of a study by an external consultant BCG, prepared in February 2013.⁷⁷¹ The efficiency estimates were subsequently revised in July 2013 and set out in another BCG document.⁷⁷² The revised estimates amounted to EUR [...] of variable cost savings.
- (1092) Another revised set of efficiency estimates was included in the working draft of the Business Plan for the JV (the "Draft Business Plan"), taking into account both the work of BCG and the remedies package submitted in the Phase I investigation.⁷⁷³ The Parties have estimated that the variable cost efficiencies included in the Draft Business Plan amount to EUR [...] excluding remedies. This revised figure is 16% below the original estimate provided by BCG, mainly because of lower [input 1] procurement savings which have been adjusted downwards by EUR 9.8 million compared to the updated BCG estimates of July 2013.
- (1093) The largest item in the overall variable cost synergy of EUR [...] is procurement savings (EUR [...]), followed by variable transport cost savings (EUR [...]), production optimisation savings (EUR [...]), and variable SG&A savings (EUR [...]). All of those figures represent BCG estimates for savings achievable by the JV by the end of the [...] year of the JV.
- (1094) BCG has also estimated the annual phasing of those savings, that is to say the percentage of the total maximum saving which can be achieved at the end of each year of the JV. For each year in the Draft Business Plan, the assumed saving corresponds to the mid-point between the end-of-year savings during the preceding year and the one of the current year (for example, the cost saving in the third year of the JV is assumed to equal the average of the savings achievable at the end of the second year, and those achievable at the end of the third year).
- (1095) At the Commission's request, the Notifying Parties have also computed the latest set of synergies in terms of savings per tonne of S-PVC. The total savings used in the Draft Business Plan are equivalent to a reduction in variable costs of EUR [...]. That estimate is based on 2011 [input 1] prices. Adjusting the [input 1] procurement savings to 2012, [input 1] prices lead to a slightly higher estimate of savings per tonne, equivalent to [...].⁷⁷⁴ The Notifying Parties have also re-computed the variable cost savings as a percentage of 2012 variable costs. According to the Notifying Parties, estimated savings are equivalent to [0-5]% of the 2012 variable cost base of the JV. According to the Commission's own computations, the percentage of savings accounted for by the claimed efficiencies is slightly lower than that computed by the Notifying Parties, but still close to an overall [0-5]% efficiency effect.⁷⁷⁵

⁷⁷⁰ Notifying Parties' response to the Commission's request for information of 20 February 2014., [ID].

⁷⁷¹ BCG, *Ineos/Solvay: Synergies from potential JV*, Document for European Commission, February 2013.

⁷⁷² BCG, *Project Thor, Synergy Handover – Synthesis*, July 2013.

⁷⁷³ Annexes 1 and 2 of the Notifying Parties' Reply to the RFI of December 2 2013.

⁷⁷⁴ Notifying Parties' Reply to the RFI of 11 December 2013, Response to Question 2.

⁷⁷⁵ This computation is based on an extrapolation from 2011 to 2012 of the variable costs base for the JV used in the original BCG report. Given that the most of the efficiencies computed by BCG have been

(1096) **Table 12** summarises the latest annual efficiency claims made by the Notifying Parties, in terms of millions of Euro and EUR/tonne savings.

Item	[...]* (EUR m)	[...]* (EUR /tonne)
Procurement	[...]*	[...]*
[input 1]*		[...]**
[input 2]*		[...]*
[input 3]*		[...]*
Transport Costs	[...]*	[...]*
[product 1]*		[...]*
[product 2]*		[...]*
Production Optimisation	[...]*	[...]*
Commercial	[...]*	[...]*
TOTAL	[...]*	[...]**

Table 12: Summary of the Notifying Parties' Efficiency Claims

Source: JV Draft Business Plan

** Before adjustment for 2012 [input 1]* prices*

9.1.12.3. Merger specificity and verifiability of procurement savings

(1130) The Parties claim that the JV would lead to savings in the procurement of [input 1]*, [input 2]* and [input 3]*.

9.1.12.3.1. [input 1]*: description

(1131) In terms of [input 1]* savings, [...]*, the Notifying Parties estimate in their Draft Business Plan that the Transaction would lead to [input 1]* procurement savings worth EUR[...]* of cost savings. This figure is 30% lower than the saving assumed in the original February 2013 BCG report, which was equivalent to EUR [...]*.

(1132) The original BCG estimate is based on two categories of procurement savings: "[...]*.

computed on the basis of 2012 data, or re-based to 2012 cost data (as is the case for [input 1]*) the Commission considers that it would be more appropriate to simply compute the variable cost synergies as a percentage of variable cost using the JV's variable cost base for 2012 (that is to say EUR[...]*/tonne, as computed by the Notifying Parties). This yields a lower percentage savings of [...]*. Alternatively, using the Commission's preferred measure for gross margins in NWE (and, by implication, of variable costs), yields a lower weighted average cost for the JV of EUR[...]*/tonne, implying a claimed efficiency level of [...]*.

- (1133) The first category of [input 1]* procurement savings refers to potential savings resulting from [...]*. The BCG report notes that [...]*.⁷⁷⁶
- (1134) The second category of [input 1]* procurement savings refers to [...]*⁷⁷⁷ [...]*.⁷⁷⁸ [...]*.⁷⁷⁹
- (1135) In terms of timing for the achievement of [input 1]* procurement savings, the February 2013 BCG report notes that the [...]*.
- (1136) In the revised BCG estimates of July 2013, [input 1]* procurement savings were [...]* by close to [...]* (that is to say from EUR [...]* to EUR [...]*,⁷⁸⁰ equivalent to an [...]* from EUR [...]* to EUR [...]*).⁷⁸¹
- (1137) In the latest Draft Business Plan submitted to the Commission, the [input 1]* procurement savings were adjusted to reflect updated forecasts to the [input 1]* price raising the total savings from EUR [...]* to EUR [...]*,⁷⁸² but were also reduced by EUR 9.8 million to take into account the fact that some of the synergies identified by BCG could be achieved by INEOS or Solvay on [...]*. This adjustment lowers the per tonne savings from EUR [...]* to EUR [...]* (on the basis of 2011 [input 1]* prices).⁷⁸³ Adjusting this figure to also take into account [input 1]* prices in 2012 leads to the current estimated savings by the Notifying Parties of EUR [...]*.

9.1.12.3.2. [input 1]*: assessment

- (1138) The Commission preliminarily notes that there appears to be a fundamental distinction between "best in class" savings and "scale and spot deals." In that respect, the Commission notes that the BCG documents submitted by the Notifying Parties [...]*. An alternative approach consisting of [...]*, which has been actually proposed by the Notifying Parties as a response to a specific question regarding this issue by the Commission,⁷⁸⁴ would result in double counting of such benefits. This would also not be consistent with the original computations set out by BCG. The separate assessment of "best in class" savings and "scale and spot deals" appears therefore to be justified.
- (1139) As regards, first, best in class savings, the Commission notes that these synergies are likely not to be merger-specific, since they are not achieved through the greater scale achieved by the JV and could be achieved by each party to the JV on stand-alone basis. It is not clear, indeed, why each Notifying Party individually could not align its [input 1]* contracts to achieve the best rates already available in each region, once it

⁷⁷⁶ BCG February 2013 report, slide 36.

⁷⁷⁷ BCG February 2013 report, slide 36.

⁷⁷⁸ BCG February 2013 report, slide 37.

⁷⁷⁹ For example, slide 38 and 40 of the BCG February 2013 report refer to "[...]*"

⁷⁸⁰ BCG July 2013 report, slides 1 and 2.

⁷⁸¹ Notifying Parties' Response to RFI of December 11. This higher level of savings was due [...]*. The revised BCG estimate note explicitly that the revised savings include "[...]*" – see BCG July 2013 report, slide 2.

⁷⁸² Notifying Parties' Reply to the RFI of November 28, Annex 1.

⁷⁸³ Notifying Parties' Response to RFI of December 11, reply to question 2.

⁷⁸⁴ Notifying Parties' Response to question 1.c of the RFI of 28 November 2013.

is established that these savings are not achieved through the increased scale of the post-Transaction purchases. This issue is explicitly noted by BCG.⁷⁸⁵

- (1140) The Notifying Parties argue that, for the purposes of the "best-in-class" savings, they have taken into account only those synergies that are merger specific. A significant downwards adjustment in [input 1]* procurement savings was made by the Notifying Parties in the Draft Business Plan due to lack of merger-specificity, representing a greater than [...] reduction relative to the estimates in the July 2013 BCG report.
- (1141) The Commission however notes that the Notifying Parties appear to have excluded from the scope of the "best in class" savings only those savings that had actually already been achieved by each Notifying Party individually, during the course of 2013. For instance, the Notifying Parties have excluded the savings achieved through [input 1]* contracts renegotiated by Solvay [...].⁷⁸⁶
- (1142) Such approach is not consistent with an assessment of efficiencies' merger specificity, as it only excludes savings which have already been achieved, and not additional future savings which could be achieved individually by each merging party in the absence of the Transaction.
- (1143) Moreover, the Notifying Parties stated in the Form RM that "[...]*."
- (1144) The Commission considers that on the basis of this statement it is not clear whether the savings foreseen in the Draft Business Plan would be achieved through merger specific factors or to more general improvement in the market conditions. Indeed, the stand-alone business plans for both INEOS and Solvay submitted by the Notifying Parties assume [...] in the unit cost [input 1]* from 2014 onwards, relative to prevailing conditions in 2013. The [input 1]* procurement costs assumed in the absence of the JV therefore do not incorporate any general improvement in market conditions and may as such overstate the reduction in procurement costs attributed to the JV.
- (1145) In light of the foregoing, the Commission considers that the Notifying Parties have failed to prove the merger specificity of [input 1]* "best in class" savings.
- (1146) With regard to "scale and spot" savings, it is necessary to distinguish further between savings achieved through [...] and savings achieved through [...].
- (1147) As regards "scale" savings, the Commission notes that in principles those savings could be considered as merger-specific. The Notifying Parties, however, have submitted in the context of the submission of remedies arguments that [...] ⁷⁸⁷
- (1148) Moreover, in their briefing paper on LVM economics submitted on 21 March 2014,⁷⁸⁸ the Notifying Parties stated that [...].
- (1149) Those statements appear to show that according to the Notifying Parties there is no direct correlation between the amount of [input 1]* purchases and the price per tonne of [input 1]* that a buyer would have to pay.

⁷⁸⁵ BCG February 2013 report, slide 36; and BCG July 2013 report, slide 2.

⁷⁸⁶ See Notifying Parties' response to the Article 11 Request for information of 20 February 2014.

⁷⁸⁷ Form RM of 11 March 2014, paragraph 2.33.

⁷⁸⁸ See Notifying Parties' response to RFI of 20 February 2014.

- (1150) In view of those factors, the Commission considers that the Notifying Parties have failed to prove the merger specificity of [input 1]* "scale" savings.
- (1151) As to "spot" savings, the Commission notes the capacity of the [...] is comparable to [...] [input 1]* purchases [...]. As such, the volumes replaced by [...].
- (1152) The Notifying Parties argue that [...] does not mean that it would have had the incentive to do so. This is because [...].
- (1153) The Commission considers that in order for the [...] to be merger specific, the Notifying Parties would have to show that it would not have been possible or profitable for Solvay, [...], to purchase [input 1]* [...]. In that respect, the Commission notes that [...] has [...] purchased approximately [...] of [input 1]* [...].⁷⁸⁹ It appears therefore that [...]. Therefore, the Commission considers that the Notifying Parties have failed to prove the merger specificity of ethylene "scale" savings.
- (1154) As regards verifiability, the Notifying Parties have submitted, in addition to the BCG reports and the Draft Business Plan, evidence showing that after the acquisition of [...], the costs of purchasing [input 1]* [...]. Whilst in principle the Commission considers that such evidence could be suitable to show that further to past acquisitions similar savings were achieved, the Commission notes that the Notifying Parties have failed to identify the category of [input 1]* procurement savings these synergies would relate to.
- (1155) In particular, according to the Notifying Parties, *"it is very difficult to determine with any precision to which extent the different arguments put forward in the contract negotiation contributed to [...]"*.⁷⁹⁰
- (1156) In addition, the Commission considers that the verifiability of the [input 1]* savings is also called into question by the Notifying Parties' position that post-divestment [...] will not suffer from dis-synergies despite the lack of access to the [...], as discussed in Recital 1076.
- (1157) Finally, in the Response to the SO, the Notifying Party have submitted a computation of [...] achievable by Solvay as a result of the JV which only result in a [...] saving for the JV [...]. This saving represents only a [...] of the claimed scale and spot efficiencies achievable by the JV in [...].
- (1158) The Commission therefore considers that the Notifying Parties have also failed to prove the verifiability of [input 1]* savings.

9.1.12.3.3. [input 2]*: description

- (1159) The Notifying Parties argue that the JV would achieve EUR [...] of [input 2]* procurement savings (this figure revised downwards from the initial BCG estimate of February 2013). The source of the [input 2]* procurement savings is [...].
- (1160) The post-JV scenario assumes that [...].⁷⁹¹

⁷⁸⁹ See Notifying Parties' response to RFI of 20 February 2014.

⁷⁹⁰ See Notifying Parties' response to the Article 11 Request for information of 20 February 2014.

⁷⁹¹ BCG Synergy Handover – Workshop 1 of 5 June 2013 ID4932.

(1161) The volumes of [...]*.⁷⁹² [...]*. According to the BCG study, the benefits attributable to [...]* would account for a [...]* of the cost savings related to the [input 2]* procurement.⁷⁹³

9.1.12.3.4. [input 2]*: assessment

(1162) The Commission considers that the [...]* could also be profitable [...]* on a standalone basis. [...]* would give rise to returns of approximately EUR [...]* per year. This appears to be comparable with [...]* that would be needed to generate savings of [...]* as discussed in the BCG study.

(1163) The Notifying Parties submit that [...]* in the absence of the JV indicated by BCG assume that [...]* is used in [...]*. In the absence of [...]*.

(1164) The Commission however notes that [...]* even in the absence of the Transaction. The Commission notes in this respect that there [...]*.

(1165) The Notifying Parties argue that [...]*.

(1166) The Commission considers that the Notifying Parties have not provided any documents to support this position. Moreover, the very fact that BCG has assumed that without the Transaction [...]* shows that such prospective was not unrealistic. Thus, it appears reasonable that in the absence of the Transaction [...]*.

(1167) The Commission therefore considers that the Notifying Parties have failed to prove the merger specificity of [input 2]* savings.

9.1.12.3.5. [input 3]*: description

(1168) According to the Notifying Parties, the Transaction would result in [...]*of savings in the cost of [input 3]* procurement. The [input 3]* procurement savings are based on [...]*.

9.1.12.3.6. [input 3]*: assessment

(1169) The Commission considers that merger specificity is also questionable in relation to the procurement of [input 3]*. The BCG study notes [...]*.⁷⁹⁴

(1170) If prices were to be dependent of the scale of operations, one would expect that [...]*.

(1171) The Notifying Parties submit that [input 3]* prices are not always a function of the volumes sold to a single customer. In particular, the savings would also be achieved through "best in class"-like strategies and through modifications in [...]*.

(1172) The Commission notes that, as discussed in Section 9.1.12.3.2. with respect to [input 1]*, best-in-class savings are generally not merger specific, given that these savings do not depend on the larger scale of the purchaser and can therefore normally be achieved by each merging party on a standalone basis.

⁷⁹² Idem.

⁷⁹³ Idem. [...]* of [...]*.

⁷⁹⁴ Idem.

- (1173) The Commission considers that in principle a certain part of the savings submitted by the Notifying Parties could be associated with larger volumes purchased by the JV and could therefore be merger-specific. The Notifying Parties have however failed to provide a split between these "scale" savings and the "best-in-class" savings referred to in Recitals (1059) and (1073) and it is therefore not possible to identify the amount of the possible merger-specific synergies.
- (1174) As regards verifiability, evidence showing that there have been procurement savings further to a previous merger could in principle be considered as adequate to show that a merger under review could achieve similar savings. The Commission, however, takes the view that in this case the evidence presented by the Notifying Parties is not sufficient.
- (1175) In that respect, the Notifying Parties have not specified in detail which [input 3]* are used by each of them and for [...]*. According to the Notifying Parties, such a split would not have been possible due to confidentiality reasons. The Notifying Parties have only provided [...]*. In addition, the Notifying Parties have not explained in detail [...]*. It is unclear how [...]* could be implemented in practice and whether there would be any scope for savings in this respect.
- (1176) The Commission therefore concludes that the Notifying Parties have failed to prove the merger specificity and verifiability of [input 3]* procurement savings.

9.1.12.4. Merger specificity and verifiability of transport cost savings

9.1.12.4.1. Description

- (1177) The transport cost savings claimed by the Notifying Parties apply to [...]* applicable to both [product 1]* and [product 2]*.
- (1178) With regard to [product 1]*, the transport cost savings are derived from [...]*.
- (1179) The Draft Business Plan includes EUR [...]* of [product 1]* transport cost savings. This is lower than the EUR [...]* assumed in the original BCG February report estimate due to lower assumed savings from [...]*. The corresponding transport cost savings [...]*, are estimated by the Notifying Parties at EUR [...]*.
- (1180) As regards [product 2]*, the Notifying Parties estimate savings of EUR [...]* in the Draft Business Plan (this is adjusted downwards from EUR [...]* in the original February 2013 BCG estimate due to a data revision). The [product 2]* transport cost savings are entirely due to [...]*.

9.1.12.4.2. Assessment

- (1181) In terms of [product 1]* transport costs, the Commission notes that a significant share of the computed transport cost savings, [...]*, is available to each of the parties to the JV pre-Transaction. In response to a specific question on this issue,⁷⁹⁵ the Notifying Parties have confirmed that [...]* of the savings obtained by [...]* is available to them on a stand-alone basis. This figure is [...]* and is equivalent to almost [...]* of the assumed combined savings.

⁷⁹⁵ Notifying Parties' Response to question 3.b of the RFI of 28 November 2013.

- (1182) [...]*, the mere fact that there are significant notional transport cost savings available to each of the Notifying Parties pre-Transaction and that they are not being realised, casts doubt on whether the residual savings that the Notifying Parties claim to be merger-specific could actually be obtained. In particular, the same limitations [...] that the Notifying Parties refer to in order to explain why some of the identified transport cost savings are not realised pre-Transaction would also affect the realisation of the assumed transport cost savings post-Transaction.
- (1183) In that regard, the contrast with the transport cost savings computed for [product 2]* is instructive. The Notifying Parties state that [product 2]* is [...]*. Indeed, their analysis shows that the significant majority (that is to say [...]*) of the assumed transport cost savings for this product could not be achieved on a stand-alone basis by each of the Notifying Parties.⁷⁹⁶ In the case of [product 2]*, the assumption that the JV would bring about merger-specific transport cost savings appears to be more appropriate than in the case of [product 1]*.
- (1184) The Notifying Parties, however, submitted information in their Response to the SO showing that similar cost savings were achieved [...]*. Whilst the savings per tonne achieved [...]*, if one considers savings within the Member States primarily affected by [...]*, the transport cost savings achieved by [...]* in the past and those claimed from the JV are broadly comparable.
- (1185) The Commission therefore concludes that both [product 1]* and [product 2]* transport savings can be considered as merger specific and verifiable.

9.1.12.5. Merger specificity and verifiability of production optimisation savings

9.1.12.5.1. Description

- (1186) The Draft Business Plan for the JV includes a synergy of EUR [...]* for production optimisation. That includes savings of EUR [...]* from the [...]*. According to the Notifying Parties, those savings could be achieved in the areas of [...]*.

9.1.12.5.2. Assessment

- (1187) The Commission considers that synergies stemming from the sharing of know-how are not merger specific if each party of a concentration could individually develop an equivalent know-how.
- (1188) In this case, the Commission notes that the Notifying Parties have failed to present any convincing explanation as to why each of INEOS and Solvay would not be in the position to develop on a stand-alone basis the know-how of the other Notifying Party.
- (1189) In addition, the Commission notes that the large majority of the production optimisation savings are due to a preliminary and superficial analysis of the Notifying Parties' respective know-how and production processes. When asked to provide more details on those savings, the Notifying Parties have stated that: (i) it is impossible to quantify the magnitude stemming from the sharing of each of the identified advantages; and (ii) the Notifying Parties have not been able so far to share

⁷⁹⁶ Notifying Parties' Reply to RFI of 28 November 2013, Page 11.

between them the information required for this assessment due to confidentiality reasons.

(1190) The Commission therefore concludes that the Notifying Parties have failed to prove the merger specificity and verifiability of production optimisation synergies.

9.1.12.6. Merger specificity and verifiability of commercial benefits

9.1.12.6.1. Description

(1191) The final category of synergies claimed by the Notifying Parties consists of [...] of “commercial” benefits, due to [...]*.

9.1.12.6.2. Assessment

(1192) The Commission considers that the evidence submitted by the Notifying Parties is sufficient to prove that they would make savings due to [...]*. The Commission therefore concludes that savings from commercial benefits can be considered as merger specific and verifiable.

9.1.12.7. Benefit to Consumers

(1193) The efficiencies claimed by the Notifying Parties consist of variable cost savings and are more likely to benefit consumers, than other forms of efficiencies, that is to say fixed cost savings.⁷⁹⁷ However, the claims made by the Notifying Parties also raise doubts as to whether and how they would benefit consumers. Those doubts relate to the timing of the expected efficiency gains and to the pass-through of some of the savings expected by the Notifying Parties.

(1194) In terms of timing, the Horizontal Merger Guidelines state that “*In general, the later the efficiencies are expected to materialise in the future, the less weight the Commission can assign to them. This implies that, in order to be considered as a counteracting factor, the efficiencies must be timely.*” The Commission considers that some of the efficiencies claimed by the Notifying Parties cannot be considered timely, since they only arise at [...]*. For the purposes of recognising some of the efficiency claims made by the Notifying Parties, and balancing them against the likely harm caused by the Transaction, the Commission considers that it would be appropriate to use as a benchmark the efficiencies expected by the Notifying Parties in the second-to-third year of the Draft Business Plan.⁷⁹⁸ The Parties have not demonstrated why a longer period would be more appropriate, other than simply noting that synergies beyond year 3 are not less certain but simply reflect a phased rolled-out. In any event, this issue can be left open for this specific case, as considering synergies beyond year 3 does not have a significant impact on the total level of efficiencies that are claimed, and even less on those efficiencies that meet the cumulative criteria set in the Horizontal Merger Guidelines.

(1195) In terms of pass-through, the Commission has reservations regarding whether some of the [product 1]* transport cost savings claimed by the Notifying Parties are likely to be passed-through to consumers, and thus qualify as efficiencies under the

⁷⁹⁷ Horizontal Merger Guidelines, Paragraph 80.

⁷⁹⁸ The efficiencies claimed by the Parties reduce to roughly [...] of S-PVC variable costs if one considers annual efficiencies obtained during year 3 of the JV.

Horizontal Merger Guidelines. A significant part of the transport cost savings are based on reallocation of output across plants owned by each of the Notifying Parties, but not on lower costs for the combined entity post-Transaction as a result of JV-specific productive synergies. Essentially the same issue arises in relation to the commercial savings that accrue to the JV as a result of [...]*

- (1196) On the other hand, transport cost savings achieved in relation to [product 2]* are of a different nature than those associated with [product 1]*, since they apply to a different product market [...]*. The nature of the economic link between [product 1]* and [product 2]* implies that lower variable cost and therefore higher gross margins for [product 2]* affect the pricing incentives for [product 1]*, simply by increasing the average netback earned on each sale of [product 1]*. The Commission accepts that the JV would face incentives to pass on to [product 1]* consumers an increase in the average [product 2]* netback. However, this line of reasoning does not apply to synergies in transport cost or commercial costs that apply directly to [product 1]*, since at the margin the incentives to pass on those cost savings to [product 1]* customers are doubtful, for reasons that are explained in detail in the rest of this Section 9.1.12.7.
- (1197) Economic literature on horizontal mergers and efficiencies shows that in a standard setting of homogenous goods competition,⁷⁹⁹ cost savings from output reallocation that would take place post-merger between firms with different costs (that is to say from the firm with higher cost to that with lower costs) should not qualify as efficiencies.⁸⁰⁰ That is because savings of this type do not improve the choice set of suppliers available to consumers relative to the pre-merger situation, since consumers could also have purchased from the firm with lower cost absent the merger. Savings due to output reallocations across merging firms therefore are not capable of offsetting the anti-competitive effects of a horizontal merger, independently of the magnitude of the increase in concentration brought about by the merger. That result remains the same whenever merging parties are not able to recombine assets to improve their joint production capability post-merger (that is to say the JV's production possibilities are no different from those of the merging parties *jointly* before the merger).⁸⁰¹
- (1198) Whilst that economic result is formally established in circumstances where there is quantity competition, the underlying reasoning for that conclusion in the case of the [product 1]* market can also be illustrated by reference to an example of localised price competition, which captures some of the essential features of the [product 1]* industry. The BCG reports submitted by the Notifying Parties to substantiate their efficiency claims use the current [...] routes served by both INEOS and Solvay as an example of [product 1]* transport cost synergies. INEOS is currently serving

⁷⁹⁹ J. Farrell and C. Shapiro, "Horizontal Mergers: An Equilibrium Analysis", *American Economic Review*, 1990, 80(1), pp. 107-126.

⁸⁰⁰ A scenario with post-merger output re-allocation (or rationalization) but not further reduction in costs is explicitly denoted in the Farrell-Shapiro article as a "merger with no synergies" (see Section II.A in particular).

⁸⁰¹ A similar line of reasoning was accepted by the General Court in *Ryanair v. Commission*, 2010 (Case T-342/07), paragraph 439. Contrary to the Notifying Parties' submissions in the Reply to the RFI of 28 November 2013 (answer to question 3.d), this finding does not depend on the fact that the merger in question would have created a monopoly situation on several markets.

those routes from its [...] plants, whilst Solvay competes from its plants in [...]*, [...]* and [...]*. According to the data used by BCG, INEOS sales are [...]* those of Solvay by virtue of its more advantageous location.

- (1199) The transport cost savings computed by BCG post-Transaction are based on the assumption that only [...]*-located INEOS plants would serve all of the [...]*-based customers, thus saving the additional transport costs currently faced by Solvay. Similarly, INEOS would save the amount of commissions to [...] commercial agents paid by Solvay pre-merger. However, the Commission does not see why INEOS would have any incentives to pass through these costs savings on to [...] customers. Post-merger the costs of INEOS' [...] plants (that is to say the cost of the asset serving customers) would not change. This implies that, disregarding any other potential efficiency benefits from the Transaction, the only effect of the JV would be the removal of the competitive constraint exercised by Solvay pre-Transaction ([...]*), without any change in the costs faced by the INEOS plants.
- (1200) That also implies that [...]*.
- (1201) Given that the JV's combined production possibilities would not improve relative to those available to the Notifying Parties jointly pre-Transaction, any cost savings due to output rationalisation within the JV will not necessarily prevent a price increase post-Transaction. According to the Commission this feature of savings due to output re-allocation means that this type of saving should not qualify as efficiency for the purposes of the merger assessment.
- (1202) Those considerations appear to be particularly clear in those countries where INEOS is the market leader by virtue of the location of its plants (for instance, United Kingdom and Sweden) and the Transaction would mainly remove the competitive constraint exercised by Solvay's plants in a more distant location.
- (1203) In the Response to the SO, the Notifying Parties have submitted some counter-arguments in response to specific questions by the Commission on the issue of pass-through of [product 1]* transport cost and commercial cost savings. In particular, the Notifying Parties have argued that the example of localised price competition set out in Recitals 1125-1126 does not provide a realistic view of how competition for [product 1]* works and that in reality [...]*.⁸⁰²
- (1204) The Commission notes in that regard that the essence of the Notifying Parties' claims on [product 1]* transport cost savings and the specific calculations submitted by BCG are based on a model of the industry where grade interchangeability constraints play a limited role and where the plant with the best location would serve the entirety of demand in a given geographic area. If this assumption does not stand, then the very nature of the cost savings that are being claimed by the Notifying Parties appears to be called into question.⁸⁰³ The example of transport cost savings achieved

⁸⁰² Reply to the RFI of 28 November 2013 (answer to question 3.d).

⁸⁰³ With specific reference to the Farrell-Shapiro article, the Notifying Parties have also noted that in this article the cost of the most efficient unit do not decrease as a result of the merger, whilst this is not the case for the S-PVC transport and commercial cost synergies that are being claimed by the Notifying Parties. However, as set out in the main text, on a local basis (for example in the United Kingdom) the cost of the most efficient plant that is assumed in the Notifying Parties' own synergies computations to

by [...] in the past which the Notifying Parties refer to in order to validate their evaluation of [product 1] transport cost savings also relies on this assumption. This implies that if the assumption of interchangeability across grades did not stand, the issue of benefit to consumers would not need to be assessed in the first place, since the criteria of merger-specificity and verifiability would not be met.

- (1205) The Notifying Parties also question the Commission's interpretation of the result contained in the Farrell and Shapiro article on the “no synergies” case.⁸⁰⁴ The Notifying Parties argue that the Commission should not interpret this result as implying that output reallocation between firms with different costs will not be passed on to consumers, and should therefore not qualify as an efficiency. The Notifying Parties support this statement by presenting a simple numerical example which shows that consumers can benefit from output reallocation after a merger, relative to a post-merger benchmark without any such output reallocation. The Notifying Parties therefore consider that efficiencies from output reallocation should be taken into account in assessing the net effects of the mergers.
- (1206) The Commission does not consider that the arguments presented by the Notifying Parties in relation to the economic nature of output reallocation synergies imply that cost savings of this nature should be treated as efficiencies (as defined under the Horizontal Merger Guidelines). The Commission notes that the Notifying Parties do not dispute the fact that, according to the Farrell and Shapiro article,⁸⁰⁵ synergies due to output reallocation can never more than outweigh the market power effects due to a horizontal merger, and can never therefore on their own lead to a net benefit to consumers as a result of a merger. The Commission considers that this fundamental feature of output reallocation synergies is sufficient to rule them out as efficiencies for the purposes of the assessment required under the Horizontal Merger Guidelines.
- (1207) The Commission accepts the argument made by the Parties that output reallocation effects can lower prices and benefit consumers relative to an alternative post-merger benchmark where such output reallocation mechanism is not allowed for, that is to say, there is an external constraint that prevents any output re-allocation from taking place. The Commission however considers that this benchmark is not the appropriate benchmark to take into account for the post-merger assessment, and not the benchmark that is typically looked at in the evaluation of horizontal mergers. This is because this benchmark artificially inflates post-merger prices by constraining the JV not to re-optimize its output within its post-merger production possibilities. The fact that output re-allocation can lower prices relative to such a post-merger benchmark does not imply that savings obtained from output re-allocation should qualify as efficiencies under the Horizontal Merger Guidelines, when assessed against the appropriate post-merger benchmark.
- (1208) The Commission also notes that the economic model proposed by the Notifying Parties to evaluate the net impact of the Transaction taking both remedies and efficiencies into account is based on an assumption of uniform costs across all plants pre- and post-Transaction. The post-Transaction benchmark without remedies and

be serving the JV's customers post-merger also do not change, in line with approach followed by Farrell and Shapiro.

⁸⁰⁴ See above footnote 802.

⁸⁰⁵ See above footnote 802.

efficiencies computed by this model therefore does not reflect any potential inefficiency from constraints on output re-allocation. This means that cost savings due to output re-allocation cannot lower prices relative to the post-merger benchmark considered in the economic model proposed by the Notifying Parties. Such cost savings should therefore not be included for the purposes of the analysis of the price effects of the merger.

- (1209) Moreover, under the economic model presented by the Notifying Parties, efficiencies are introduced as an across-the-board reduction in variable production costs. Those efficiencies are in principle able to entirely eliminate the price-effects from a merger with or without remedies. The efficiencies modelled within the formal economic framework proposed by the Notifying Parties are therefore of a fundamentally different nature relative to efficiencies due to output reallocation, since the latter by their very nature cannot eliminate the positive price effects from a horizontal merger, as the Notifying Parties accept. The Commission therefore concludes that the submissions by the Notifying Parties cannot be accepted in relation to efficiency claims based on output re-allocation (that is to say [product 1]* transport cost savings, and commercial savings).
- (1210) Based on those arguments, the Commission concludes that it is not guaranteed that savings obtained by the JV on [product 1]* transport costs and on commercial costs will benefit consumers, and therefore they should not be treated as efficiencies resulting from the Transaction.
- (1211) On the other hand, for reasons that have been explained in Recital 1123, cost savings on [product 2]* would increase the profitability of [product 2]* sales, and as such [...]*. This would lead to a reduction in [product 1]* variable costs across the board, that is to say a cost reduction not driven by output reallocation across plants. The Commission therefore considers that the cost reduction effect from savings on [product 2]* transport costs would benefit consumers.

9.1.12.8. Impact of remedies on synergies

- (1212) The Commission notes that the divestments which form part of the remedy package submitted by the Notifying Parties on 7 March 2014 and, subsequently revised on 10 and 11 March 2014, would be likely to impact negatively the level of synergies achieved by the JV, since the efficiencies claimed by the Notifying Parties are intrinsically linked to the greater scale achieved by the JV or to the combination of certain assets (for example, [...]* for [input 2]* savings).
- (1213) An assessment of the magnitude, merger specificity, verifiability, timeliness and pass-on of the synergies brought about by the JV in the presence of remedies is not straightforward. This assessment would likely involve a detailed review of the original submissions made by the Notifying Parties regarding synergies, for which the Commission is not well-equipped.
- (1214) In that respect, the Notifying Parties have stated that "*The Commitments also preserve the rationale for the Transaction as they preserve the substantial majority of the core efficiencies which are expected to be achieved through the JV.*"⁸⁰⁶ However, the Notifying Parties have submitted no evidence to show that this would

⁸⁰⁶ Form RM, Paragraph 2.3.

be the case. In particular, the Notifying Parties have not submitted any updated estimates on efficiency that take into account the divestments proposed under the Commitments, despite having been asked by the Commission to do so.⁸⁰⁷

- (1215) The Commission therefore considers that the Notifying Parties have failed to prove the magnitude, merger specificity, verifiability, timeliness and pass-on of efficiencies in a scenario involving remedies.

9.1.12.9. Conclusion

- (1216) Based on the considerations set out in Section 9.1.12., the Commission considers that the majority of the variable cost efficiencies as claimed by the Notifying Parties do not meet one or more of the three cumulative criteria set out in the Horizontal Merger Guidelines.
- (1217) The only efficiencies which appear to meet the cumulative criteria of merger specificity, verifiability and benefit to consumer are those related to [product 2]* transport costs. Those synergies amount to [...] of S-PVC variable costs.
- (1218) In any event, as discussed in Section 9.1.13.3, the Commission notes that even taking into account the full amount of synergies submitted by the Notifying Parties, the Transaction would still result in a likely price increase of a significant magnitude, in the range of [...] of S-PVC variable costs.

9.1.13. Likely effects of the Transaction in NWE

9.1.13.1. Concerns expressed by customers in the market investigation

- (1219) In the framework of the Phase I and Phase II market investigation, 56% of the customers expressed concerns regarding the Transaction and indicated that, post-Transaction, there will be insufficient alternative suppliers capable of expanding production as to make up for a hypothetical loss of competition between INEOS and Solvay⁸⁰⁸.
- (1220) Around 80% of customers also stated that they expected a price increase as a result of the Transaction.⁸⁰⁹ The following quotes provide illustrative examples of customers' feedback:

"As far as they will represent more than half the European capacity, they will decide the price. The small other players are in such a bad financial situation (Eastern producers, if they survive) that they will agree with this blessed leader. Middle size producers will also increase for different reasons: Kem One if they survive will increase also its price to be healthier and SHIN ETSU will follow the line!"⁸¹⁰

⁸⁰⁷ RFI of 20 February 2014.

⁸⁰⁸ Replies to question 82 - Phase I Questionnaire to customers (S-PVC) and to question 96 – Phase II Questionnaire to additional customers.

⁸⁰⁹ Replies to question 80 - Phase I Questionnaire to customers (S-PVC) and to question 94 – Phase II Questionnaire to additional customers.

⁸¹⁰ Reply of Grosfillex to question 80 - Phase I Questionnaire to customers (S-PVC). ID5363

*"Due to less competition the prices will increase. Depending on the market-situation an increase of 5 -10% could be possible. The remaining players beside INEOS&SOLVIN would follow this trend with pleasure"*⁸¹¹

- (1221) 72% of customers also believe that the Transaction would bring about additional consolidation that would be detrimental to the S-PVC market.⁸¹² The following quotes provide illustrative examples of customers' feedback:

*"The JV will have a dominant position within the European market and be able to exert a negative influence on prices from a buyer perspective (less competition) Others suppliers will be unable to exert sufficient restraining competitive pressure for a variety of reasons : capacity, plant location, k values available."*⁸¹³

*"Ineos should fairly admit that they were already trying to structurally increase prices to a significantly higher level over the past few years. [...] Next, Solvin is the only supplier who can supply the full product range to us at today still "in-line with market" prices. This could change (more expensive also) when they are together. All other suppliers can supply only limited part of our required products. And they will probably follow the pricing level of the big JV company. Ineos/SolVin's European customer base is already in a hard Europe crisis. Such significant change of power balance could be unhealthy for the whole European PVC chain."*⁸¹⁴

*"Target for both JV partners INEOS and SolVin is improvement of margin. In this context sales prices will be increased. Reaction on the customer side will be reallocation outside the JV as much as possible. However opportunities are restricted as never before. Remember that No1 and No2 are getting married. The rest is sick or too small to play an important roll as alternative. Some alternative could be import from Mex/USA in case that import duty would disappear."*⁸¹⁵

*"Our situation in the UK is already sensitive and we're scarred by previous deals of this nature ... Were the deal allowed to proceed you would have allowed a company to have more than 50% of the European capacity, but with sufficient capacity to supply roughly 70% of the present European requirement. This would see them in a position where they had a virtual monopoly on the market, where they would set the price wherever they saw fit to maximise earnings in their sector, knowing that none of the local players could do anything but follow their lead, and also that the importers would happily go along with whatever price has been set."*⁸¹⁶

⁸¹¹ Reply of Rehau to question 80 - Phase I Questionnaire to customers (S-PVC). ID5372

⁸¹² Replies to question 53 - Phase II New Questionnaire to customers (S-PVC) and to question 100 – Phase II Questionnaire to additional customers (S-PVC).

⁸¹³ Reply of Aliaxis to question 53 - Phase II New Questionnaire to customers (S-PVC) ID4442.

⁸¹⁴ Reply of Alkor Draka to question 53 - Phase II New Questionnaire to customers (S-PVC) ID4424.

⁸¹⁵ Reply of Bilcare to question 53 - Phase II New Questionnaire to customers (S-PVC) ID5170.

⁸¹⁶ Reply of Synseal to question 53 - Phase II New Questionnaire to customers (S-PVC) ID4224.

9.1.13.2. Inferences from the evidence on price effects from past consolidation in the NWE S-PVC market

- (1222) The evidence on the impact of past consolidation in the NWE market for commodity S-PVC shows that prices increased following the INEOS/Tessenderlo merger. INEOS sales in NWE also declined [...] following that merger. These two observations indicate that INEOS used the acquired capacity to exercise a greater degree of market power and, more generally, that the higher share of capacity conferred market power on INEOS in the NWE market for commodity S-PVC. It is likely that INEOS would have the same incentives to exercise market power after the Transaction. In addition, the Tessenderlo plants are located close to the Solvay plants and the INEOS/Tessenderlo merger was cleared only 2 and a half years before this Decision. Therefore the price effects associated with the INEOS/Tessenderlo merger are well-suited as a benchmark to infer the likely impact on prices for the Transaction.
- (1223) The Tessenderlo plants in 2011 amounted to [...] kt/y S-PVC capacity, with [...] kt/y S-PVC sales in NWE and [...] kt/y S-PVC sales overall. Through the JV, INEOS and Solvay would add, on top of INEOS' capacity and sales, [...] kt/y of S-PVC capacity and [...] kt/y of S-PVC sales in NWE,⁸¹⁷ as well as [...] kt/y of capacity and [...] kt/y of sales overall. Thus, the Transaction is [80-90]% larger than the INEOS/Tessenderlo merger in terms of capacity in NWE. This in itself indicates that the price effects from the Transaction are likely to be in excess of those identified for the INEOS/Tessenderlo merger. Moreover, that capacity increment would be added on top of overall capacity obtained by INEOS through the past acquisitions, thus leading to an even larger increase in market concentration, and stronger expected price effects.
- (1224) These considerations indicate that the upward impact on prices from a merger between INEOS and Solvay should be expected to be well in excess of the price effects identified by the quantitative assessment of the INEOS/Tessenderlo merger that is described in detail in **Annex A**. This is in line with the prediction of the economic simulation modelling described in Section 9.1.13.3. This adverse price effect would materialise in a market where INEOS already exercises some degree of market power.

9.1.13.3. Evidence of price increases inferred from the economic model submitted by the Notifying Parties

- (1225) The BE Model submitted by the Notifying Parties during the procedure also indicates that the Transaction is likely to lead to a significant impediment of effective competition through the creation of a dominant position post-Transaction. The price effects predicted by the simulation model are in the range of [5-10]% to [10-20]%, indicating that the Transaction would lead to a significant increase in the market power held by the JV. A detailed description and discussion of the BE Model is set out in **Annex B**. The Notifying Parties did not contest such evidence in their Response to the SO.

⁸¹⁷ According to the information provided in the Annexes to the Form CO.

- (1226) The BE Model is the application to the S-PVC industry of an economic model previously used by the Commission in its *Outokumpu/Inoxum* decision,⁸¹⁸ called the “Bertrand-Edgeworth” (“BE”) framework. The model applies a framework of price competition in homogeneous goods in the presence of capacity constraints, and it essentially analyses the impact of horizontal concentration of capacity. The capacity of the merging firms and capacity of their rivals, including effective spare capacity, is one of the key elements of the model determining the market power of the merging firms.⁸¹⁹ The Notifying Parties have adapted the model to the market for commodity S-PVC relying on a number of assumptions.⁸²⁰ These assumptions are discussed in **Annex B**.
- (1227) The BE Model predicts a price increase in the form of a price range rather than a single price. The Commission considers that the change in the predicted price range can provide a measure of the increase in market power resulting from a merger. The evaluation of potential effect on prices in the model framework does not provide a precise estimate of price increases, but should be seen in conjunction with other evidence, and interpreted as additional qualitative evidence that is informative of likely price increase and its order of magnitude.⁸²¹ This is consistent with the approach taken by the Notifying Parties in their submissions.⁸²²
- (1228) The Commission however considers that the BE Model does not take into account some important features of the NWE market for commodity S-PVC observed in the Commission's investigation. For example, the BE Model does not allow for multi-sourcing by customers. Multi-sourcing can be an additional restriction in the ability of customers to switch all or a significant share of their demand across suppliers because customers take into account the identity of the suppliers and a need to have a balanced supply across several suppliers. This aspect can reduce competition among rival suppliers in a way that the model does not account for.

⁸¹⁸ See Commission's decision in Case No. M.6471 *Outokumpu/Inoxum* (2012).

⁸¹⁹ **Annex B** provides a detailed explanation of the Bertrand-Edgeworth framework. Essentially, in such framework suppliers can have market power (and the prices can be above marginal costs) if (i) rivals to a given firm face fixed constraints on their production capacity and (ii) these constraints are such that these rivals cannot jointly supply the entire market at a price equal to marginal costs.

⁸²⁰ Notably on the computation of S-PVC costs by taking into account of the joint production of S-PVC and caustic soda, and the measurement of effective spare capacity for the purpose of serving the NWE market. These assumptions are discussed in more detail in **Annex B**.

⁸²¹ This approach is the same as that taken by the Commission in the *Outokumpu/Inoxum* decision, which states: “*The shift in the range should not be considered as giving a precise estimated of the likely price effect resulting from the transaction. Rather the change in the entire price range should be interpreted as qualitative evidence on the order of magnitude of the likely increase in market power.*” See the decision in Case No. M.6471 *Outokumpu/Inoxum* (2012), Annex IV Paragraphs 21-24.

⁸²² The Notifying Parties submitted the model in order to evaluate the effects of the merger between INEOS and Solvay on prices, taking into account one set of remedies submitted by the Notifying Parties in Phase I in conjunction with the efficiencies originally claimed by the Notifying Parties. In the second economic submission on the economic model (dated 23 September 2013) it is stated that “*We remain of the view that the model is informative for the purpose of gauging the effectiveness of the proposed remedies, as well as the effects of the proposed transactions*” and that: “*In previous uses of the BE model in a merger context, the Commission considered that in spite of this difficulty a shift upward in the range of prices could be seen as a predictive of a likely price increase. We agree with this pragmatic approach*”.

- (1229) Moreover, there are further limitations which are in particular important in the context of using the BE Model in order to assess the viability and effectiveness of a given remedy package, relating mainly to cost competitiveness and vertical integration of production plants.⁸²³ Those further limitations, whilst playing a role in the competitive assessment, do not as such imply that this model framework is not suitable as evidence to assess the horizontal anti-competitive effects resulting from the Transaction.
- (1230) Subject to those limitations, the Commission considers that the BE Model proposed by the Notifying Parties offers a practical tool to assess the effects of the merger in a market characterised by a broadly homogenous product and by fixed capacity constraints. Such model can therefore provide for an indication of the order to magnitude of the price effect brought about by the Transaction.
- (1231) The results from the BE Model on the likely price effects of the Transaction are set out in detail in **Annex B**, under a number of scenarios.⁸²⁴ The baseline scenario set out in **Annex B**, which is based on assumptions submitted by the Notifying Parties, indicates a price increase resulting from the Transaction of approximately [5-10]*%. The sensitivity scenarios on the baseline scenario that allow for different calibrations to pre-Transaction outcomes predict a price increase in the range of [5-10]*% to [10-20]*%. An adjusted baseline scenario also considered by the Commission to reflect higher capacity figures in NWE predicts a price increase of between [10-20]*% and [10-20]*%.
- (1232) The Notifying Party did not contest that evidence and did not contest the prediction of the price increase of the BE Model. In their Response to the SO, the Notifying Parties discussed elements of the Commission's reliance on the model that do not have a direct and material impact on its results. The Commission has addressed these criticisms in **Annex B**.

9.1.13.4. Conclusion on effects of the Transaction on the NWE market for commodity S-PVC

- (1233) As explained in Sections 9.1.1. to 9.1.3., the Transaction removes the competitive constraint between the market leader in the NWE market for commodity S-PVC market, which is likely already holding some degree of market power, and its most significant competitor, giving rise to a new player with significant market shares, which provides an important and strong first indication of the existence of a dominant market position. Those shares would also be appreciably larger than those of the next competitor post-Transaction.

⁸²³ The limitations of the model in the context of assessing the viability and effectiveness of a given remedy package are in particular the following. First, the model is not particularly well suited to assess the impact of cost differences or cost changes across suppliers other than for the largest supplier, meaning that it is unable to account for the cost competitiveness of a given set of assets factored in as a remedy. Second, the model is also not particularly well suited to capture the impact of vertical integration in the S-PVC industry on the competitiveness of a given set of assets and all its complex implications. Therefore, the model has limitations to assess the suitability of remedies, which have to be assessed in line with the criteria outlined in the Commission's Notice on remedies acceptable under Council Regulation (EC) 139/2004 and under Commission Regulation (EC) 802/2004, OJ C 267, 22.10.2008, p. 1 ("the Remedies Notice").

⁸²⁴ The definition of these scenarios is explained in **Annex B**.

- (1234) The Transaction also increases the already high concentration levels in the NWE market for commodity S-PVC and reduces the competitive pressure in this market to the benefit of the remaining players.
- (1235) Furthermore, the constraints coming from the Notifying Parties' rivals in the NWE market and those coming from other EEA rivals located outside the NWE region or from third country imports are limited, in spite of the alleged existence of spare capacity and the forthcoming shale gas revolution. It is also unlikely that customers may exercise sufficient countervailing buyer power as to constrain the behaviour of the JV post-Transaction.
- (1236) As a result, the JV will have the ability and incentive to increase prices and reduce available output on the market. The results of the Commission's assessment are confirmed by the negative reaction of the majority of customers in the market investigation and by evidence of the effects of consolidation in the industry.
- (1237) Post-Transaction, output limitations may be achieved *inter alia* by diverting sales to exports and by closing down production capacity.
- (1238) Post-Transaction, the incentives of the JV to reduce sales will increase considerably, as it will be control a much larger share of the capacity in the market and hold an unprecedented portfolio of plants. The output restrictions, translating automatically into price increases, will generate profits for the JV that would be significantly larger post-Transaction, as it will have a larger share of the market. The same is true for a possible strategy of the JV to reduce sales in NWE and divert them into export markets.
- (1239) These findings are further confirmed by the BE Model submitted by the Notifying Parties, which also take into account all the claimed efficiencies brought about by the Transaction. Even reflecting the Notifying Parties entire efficiency claims in the modelling results, which in light of the discussion in Section 9.1.12 is not justified, the Transaction would result in price effects of a significant magnitude, in the range of [5-10]*-[10-20]*% (as presented in **Annex B**).
- (1240) The Commission therefore concludes that the Transaction is likely to consolidate the degree of market power held by INEOS and lead to a significant impediment to effective competition through the creation of a dominant player that will be able and is most likely to have the incentives to increase prices and reduce output in the NWE market for commodity S-PVC.

9.2. Commodity S-PVC - Assessment of likely horizontal non-coordinated effects in NWE+

- (1241) As discussed above in Section 7.2., a possible NWE+ market for commodity S-PVC would encompass Austria, Finland, Italy and Switzerland in addition to those countries already included in NWE.
- (1242) NWE accounts for approximately 77% of the demand in NWE+ in terms of volume. Moreover, capacity in NWE+ equates capacity in NWE, given that there are no S-PVC plants in Austria, Finland, Italy and Switzerland. The market shares of the Notifying Parties and their competitors in NWE+ are also not appreciably different from NWE, as shown in **Table 13**.

**Table 13: Merchant Market Shares in Commodity S-PVC
in NWE+ by Volume in 2012**

Supplier	Sales (kt/y)	Sales (%)
INEOS	[...]*	[30-40]**%
Solvay	[...]*	[20-30]**%
Combined	[...]*	[50-60]**%
Shin-Etsu	[...]*	[10-20]**%
Kem One	[...]*	[10-20]**%
Vimmolit	[...]*	[5-10]**%
Anwil	[...]*	[0-5]**%
BorsodChem	[...]*	[0-05]**%
Ercros	[...]*	[0-05]**%
Vestolit	[...]*	[0-05]**%
Oltchim	[...]*	[0-5]**%
Fortischem	[...]*	[0-5]**%
Others	[...]*	[0-5]**%
Total market	[...]*	100%

Source: Notifying Parties' best estimates

- (1243) The Commission therefore considers that the structural impact of the Transaction on a possible NWE+ market would be comparable to the impact on the NWE market described above in Section 9.1..
- (1244) The Commission also considers that the large majority of the factors taken into account for the purposes of assessing the Transaction's impact on NWE are also valid with respect to NWE+. In particular:
- (1) As discussed in Section 9.1.2., the estimated price increase for NWE+ following the INEOS/Tessenderlo merger is very close to that one estimated for NWE. In particular, the price increase between NWE+ and EE ranges from [...] * which is comparable to the NWE-EE price increase range. Conversely, the estimated price increase is larger for NWE+ than for RoE (adjusted for the inclusion within NWE of Austria, Finland, Italy and Switzerland).⁸²⁵
 - (2) INEOS' output in NWE+ has declined in the period 2007-2012, essentially following the same trend as output in NWE. The plants belonging to INEOS pre-2007 and the plants acquired from Kerling in 2008 reduced their NWE+ sales from [...] * in 2007 to [...] * in 2012. The portfolio of Tessenderlo plants

⁸²⁵ The price increase between NWE+ and RoE ranges from [...] *, which is significantly higher than the NWE-RoE price increase.

reduced their NWE+ sales from [...] in 2011 to [...] in 2012. In the same period, from 2011 to 2012, the output of the INEOS 2007 and Kerling cohorts combined was reduced from [...] to [...] in NWE+. The same conclusions outlined in Section 9.1.2. therefore applies to NWE+.

- (3) The results referred to in points i. and ii., together with the documentary evidence listed and summarised in Section 9.1.2., provide support to the finding that INEOS currently enjoys some degree of market power in the possible NWE+ market for commodity S-PVC, in particular after the INEOS/Tessenderlo merger. The evidence indicated that starting in early/mid-2012 and continuing during the 2012-2013 period, INEOS undertook a deliberate strategy of exercising greater “pricing power” in the market in order to increase its margins through a firmer pricing policy and establish its position as price leader in the market.
- (4) Solvay's competitive constraint on INEOS in NWE+ is essentially the same as that exercised in NWE and discussed in Section 9.1.3., given that there are no S-PVC plants in Austria, Finland, Italy and Switzerland. Moreover, these countries are mostly supplied by plants located in NWE, as discussed in Section 7.2..
- (5) The remaining competitors active in NWE+ would not constitute a sufficient constraint to prevent a price increase post-Transaction, as discussed regarding NWE in Section 9.1.5.. The only appreciable difference in this respect appears to be to Kem One's strong position Italy, where it is market leader with a [20-30]*% market share. Even in that Member State, however, the Notifying Parties remain the second and third players. Moreover, as discussed in Section 9.1.5.1., Kem One is unlikely to constitute a credible competitive constraint.
- (6) The role of imports in NWE+ is as negligible as in NWE. In particular, the data gathered in Section 9.1.7. to assess the role of imports often refers to "WE" or "EU", that is to say groupings that contain NWE+. Moreover, the addition of the four countries (Austria, Finland, Italy and Switzerland) does not materially affect the reasoning detailed in Section 9.1.7.. The only notable difference lies in the addition of Italy to NWE, which has a moderately different history as far as imports are concerned. Between 2007 and 2010, imports from the United States, Colombia and Mexico increased from [...] kt to [...] kt. However, in 2013 imports decreased to [...] kt, which is still an increase of around [...] kt relative to 2007 levels. Those observations must take into account the closure of Vinyls Italia in 2010, which explains the increased reliance post-2009 on imports and, essentially, on Mexichem. However, the Notifying Parties' data, which isolates Mexichem, shows that its shipments to Italy have increased between 2008-2009 as expected, but decreased to the same level as 2008 since then. In any event, as explained regarding the United Kingdom in Section 9.1.7., Italy is not representative of NWE+ trends. Finally, the market investigation also supports the Commission's finding of limited competitive pressure by importers post-Transaction, even for NWE+.
- (7) The assessment of customer behaviour in NWE+, including multi-sourcing, switching and alleged buyer power, remains essentially the same as discussed regarding NWE in Sections 9.1.10. and 9.1.11., as there are no appreciable differences in such behaviour among those regions.

- (8) Whilst the results of the BE Model are computed for a NWE definition of the relevant geographic market, very similar results can be expected under a definition of the market as NWE+. This is because there are no S-PVC plants in Austria, Finland, Italy and Switzerland and, therefore, S-PVC capacity in NWE is the same as in NWE+. The only difference between the two scenarios would be a higher level of demand and, correspondingly, higher domestic sales by NWE S-PVC suppliers. This in itself is not sufficient to impact the conclusions that can be drawn from the BE Model.
- (9) The efficiencies resulting from the Transaction and assessed in Section 9.1.12. would not have any materially different impact on a possible NWE+ market. Accordingly, these efficiencies would still be insufficient to offset the anticompetitive impact of the Transaction.
- (1245) The Commission therefore concludes that the Transaction is likely to consolidate the degree of market power held by INEOS and lead to a significant impediment to effective competition through the creation of a dominant player that will be able to and is most likely to have the incentives to increase prices and reduce output in the NWE+ market for commodity S-PVC.

9.3. Commodity S-PVC - Assessment of likely vertical effects

- (1246) Vertical relationships exist, upstream, between S-PVC production and VCM production, between S-PVC production and S-PVC technologies and between S-PVC production and PVC additives and, downstream, between S-PVC production and compounding, which result in affected markets. For an assessment of these effects see respectively Sections 10.7., 10.11.1., 10.11.2. and 10.12..

9.4. Sodium Hypochlorite – Assessment of likely horizontal non-coordinated effects

9.4.1. Structural assessment: market shares, increment and concentration levels

- (1247) **Table 14** below presents the market shares of the Notifying Parties and their competitors in the Benelux market for sodium hypochlorite.

Table 14: Sodium Hypochlorite Market Shares for the Benelux 2012

Supplier	Volumes (tons)	Market Share
Solvay	[...]*	[30-40]*%
INEOS	[...]*	[30-40]*%
Combined	[...]*	[60-70]*%
Akzo	[...]*	[20-30]*%
Kem One	[...]*	[0-5]*%
Others	[...]*	[0-5]*%
Total market	[...]*	100%

Source: the Notifying Parties' best estimates

(1248) The Transaction would create a clear market leader with a combined market share of [60-70]*% (INEOS [30-40]*%; Solvay [30-40]*%) in the Benelux region. Those significant shares are in themselves an indication of the creation of a dominant position. The only remaining significant player, Akzo, would have a [20-30]*% market share. The remaining players would be Kem One with a market share of only [0-5]*% and other smaller suppliers ([0-05]*%). The concentration level post-merger is also very significant (HHI of [...]*, with a delta of [...]*).

9.4.2. *The JV will combine the largest and second largest in the Benelux market and will entail a loss of competition between the Notifying Parties and amongst non-merging firms*

(1249) The Transaction would combine the largest and second largest supplier in the Benelux region by volume. As a result, any competition between those two important players in the market would cease to exist. The JV would also benefit from a more balanced mix between "voluntary" (voluntarily produced sodium hypochlorite, following demand evolution) and "fatal" production (mandatory production resulting from the production of other products) than Solvay, the current market leader.⁸²⁶

(1250) In the SO, the Commission provisionally concluded that the Transaction would also lead to a reduction of competition amongst non-merging firms, which in view of the reduction of the number of players active on those markets will see the competitive pressure reduced.⁸²⁷ This applied in particular to the only sizeable competitor

⁸²⁶ Pre-transaction, Solvay on average is at [70-80]*% fatal and [30-40]*% voluntary ([...]*respectively), whereas INEOS on average is at [10-20]*% fatal and [80-90]*% voluntary ([...]* and [...]*respectively). See Notifying Parties' response to Commission's RFI of 22 October 2013.

⁸²⁷ See Horizontal Merger Guidelines, paragraph 24.

remaining active in the Benelux, Akzo, which would lack of incentives to counter price increases from the JV.

- (1251) In their response to the SO the Notifying Parties reject the Commission's assessment of Akzo's ability and incentive to constraint the JV.⁸²⁸ They point at Akzo's statement in reply to the Commission's Phase I questionnaire, according to which "*should the prices of sodium hypochlorite increase by 5-10%, AKZO would be able, and have an incentive to increase its supply to capture demand from the JV*". The Notifying Parties also refer to the minutes of a conference call with Akzo where this company indicated that "*There are plenty of suppliers, themselves included in the area, including neighbouring France and Germany, who will still be able to exert a competitive pressure on the future merged entity, since "the Benelux is not an island"*".
- (1252) Moreover, the Notifying Parties argue that the Commission ignores the fact that Akzo has the ability to increase its output given that it has significant spare capacity. As regards Akzo's incentive to counter a price increase from the JV, the Notifying Parties claim that Akzo would have a clear incentive to undercut any price increase by the JV to capture large customers in the Benelux such as [...]*, which represents [...]* kt, the equivalent of [...]* of the Parties' sales in 2012.
- (1253) In this regard the Commission considers that, irrespective of Akzo's statement and Akzo's spare capacity, its reaction in this highly concentrated, mature and homogeneous market cannot be expected to be sufficiently strong to make a price increase by the JV unprofitable. The Commission considers on the basis of the Phase I market investigation⁸²⁹ that the customers of the Notifying Parties in the Benelux use at least two suppliers of sodium hypochlorite (that is to say, they multi-source), with the notable exception of [...]*. Bearing this in mind and taking into account that only two sizeable suppliers will be available post-merger, in case of a price increase from the JV, Akzo might benefit from additional volumes without the need to fully offset such price increase.
- (1254) Even if Akzo had the incentive to further lower its prices in an attempt to gain all volumes from a certain customer, such behaviour would still be insufficient to offset a price increase from the JV. As stated, multisourcing is important for customers (with the exception of [...]*). Customers would be therefore likely to continue multi-sourcing from both the JV and Akzo despite a possible price increase from the JV. As a result, customers would be charged higher prices at the very least by the JV. The specific situation of [...]* cannot be found to sufficiently off-set the predicted adverse effects of the merger as the remaining customers would remain exposed to significantly higher prices or deteriorated conditions after the merger.
- (1255) As regards Akzo's claim concerning the existence of alternative suppliers in neighbouring areas, it is noticeable that in the reply to the Commission's Phase I questionnaires, when asked about the name of large suppliers of sodium hypochlorite

⁸²⁸ Paragraphs 9.8 to 9.12 of the response to the SO.

⁸²⁹ Replies to question 5 - Phase I Questionnaire to customers (Sodium hypochlorite).

in the Benelux, Akzo only names the Notifying Parties.⁸³⁰ The Notifying Parties arguments in this respect are further analysed in Section 9.4.3.

9.4.3. *Existing suppliers located in areas neighbouring the Benelux are not a sufficient constraint*

- (1256) In the SO, the Commission provisionally concluded that existing suppliers located in areas neighbouring the Benelux are not a sufficient constraint.
- (1257) In their Response to the SO the Notifying Parties consider that "*in general the Commission's investigation and analysis of the supply-side constraints has been selective and conclusion focused, particularly in relation to the analysis of the role of suppliers in Northern France, such as SPCH and PCL. The Commission seems satisfied to rely on the mere assertions of these competitors as to their current and future roles, and does not appear to have tested these responses against these competitors' own plans or other evidence provided by the Parties and other market participants.*"⁸³¹ Contrary to this statement of the Notified Parties, the Commission diligently investigated the role of each of the suppliers located in the bordering areas of the Benelux, as perceived by themselves and by the customers of the Notifying Parties in the Benelux.
- (1258) In the Form CO, the Notifying Parties have presented a number of suppliers active in Germany and France, that is to say in the fringes or beyond a 300 km radius of the Benelux borders. The Notifying Parties submitted that those companies would start selling, or increase their sales, into the Benelux area as a reaction to any price increase from the JV. As part of its investigation, the Commission has contacted those suppliers, with the aim of establishing whether those competitors could exercise a sufficient competitive constraint on the JV post-merger.
- (1259) As regards suppliers operating from Germany, the Notifying Parties suggested that a competitive constraint could be exerted by AKZO, BASF, CABB GmbH ("CABB", Germany) and Vinnolit. The Commission has already discussed the issues involving AKZO's role as a supplier of sodium hypochlorite in the Benelux market. This conclusion is not influenced by the specific AKZO plant from which those supplies would actually originate.
- (1260) Concerning BASF's potential as a supplier in the Benelux region, in a conference call with the Commission BASF stated that it could indeed see a business opportunity to come into the Benelux market; however this would be the case only as a result of an increase in sodium hypochlorite prices in the Benelux above 20%.⁸³² Therefore, contrary to the argument of the Notifying Parties, this means that BASF would not react to any smaller price increase which, according to the Commission's established

⁸³⁰ Reply of Akzo to Commission's Phase I Questionnaire to competitors (Sodium hypochlorite), question 15, ID 2349.

⁸³¹ Paragraph 9.13 of the Response to the SO.

⁸³² Reply of BASF to Phase I Questionnaire to competitors (Sodium hypochlorite) ID5407 and non-confidential version of the agreed minutes of conference call with BASF of 2 October 2013 ID4812.

practice,⁸³³ would be relevant to consider that such reaction would be likely to offset a price increase post-Transaction.

- (1261) The remaining two companies appear to be either too far away⁸³⁴ from the geographic area of the Benelux (CABB), or denied⁸³⁵ being present at all in sodium hypochlorite (Vinnolit).⁸³⁶ In their Response to the SO, the Notifying Parties did not contest the Commission's findings in the SO⁸³⁷ on the fact that neither BASF, nor other alleged suppliers from Germany, are likely to constitute a competitive constraint to the JV post-merger.
- (1262) With regard to French suppliers, the Notifying Parties submit that the competitive constraint could be exerted by Potasse et Produits Chimiques S.A.S ("PPC SAS", France), SPCH and Produits Chimiques de Loos ("PCL", France) and Kem One.
- (1263) In the market investigation all of those suppliers indicated that they are convinced that they would not be in the position to exercise a credible competitive constraint on the Notifying Parties in the Benelux.⁸³⁸ PPC SAS and SPCH are not active at all in the Benelux region. Either through their replies to the questionnaire, or through conference calls with the Commission, those companies have admitted that they lack the spare capacity which would allow them to enter the Benelux area as a reaction to a possible price increase from the JV.⁸³⁹
- (1264) With particular regard to SPCH, the Notifying Parties submit a series of arguments according to which (i) Brenntag lists it as one of the five main suppliers of sodium hypochlorite in Belgium, (ii) the Parties own intelligence that SPCH is now CID Lines second supplier after INEOS; (iii) SPCH's own confirmation that it may have supplied volumes outside of France and (iv) CID Lines' and Atelier Jean Reigner's confirmations that they are in negotiations with suppliers in Northern France.⁸⁴⁰
- (1265) Concerning the argument under (i), it is to be noted that this questionnaire required five companies to be named. Taking into account the reduced number of existing competitors, not all the companies named amongst the five top suppliers have necessarily the capacity to constrain the Parties. Indeed, as Brenntag itself explained in a conference call "*it would have difficulties to easily and cheaply replace the*

⁸³³ See for instance case M.5658 *Unilever/Sara Lee Body Care* (2010), where the Commission considered a slightly above 2% price increase as sufficient for the purposes of finding a significant impediment to effective competition.

⁸³⁴ Replies of CABB to questions 8, 9.1, 9.2 and 10.1 - Phase I Questionnaire to competitors (Sodium hypochlorite). ID2460.

⁸³⁵ Reply of Vinnolit to Phase I Questionnaire to competitors (Sodium hypochlorite) ID2499.

⁸³⁶ It has to be noted that Vestolit was also sent a questionnaire and denied being able to produce and commercialise sodium hypochlorite [ID2427].

⁸³⁷ SO, Paragraphs 769-771.

⁸³⁸ Replies of PPC SAS, PCL and Kem One to Phase I Questionnaire to competitors (Sodium hypochlorite) ID 3076, 2689 and 5427 respectively and non-confidential version of the agreed minutes of conference calls with SPCH, PCL and Kem One, of 7 October 2013 ID4195, 4 October 2013 ID 4155 and 2 October 2013 ID4194 respectively.

⁸³⁹ Replies of PPC SAS, PCL and Kem One to Phase I Questionnaire to competitors (Sodium hypochlorite) ID 3076, 2689 and 5427 respectively and non-confidential version of the agreed minutes of conference calls with SPCH, PCL and Kem One, of 7 October 2013 ID4195, 4 October 2013 ID 4155 and 2 October 2013 ID4194 respectively.

⁸⁴⁰ Paragraph 9.15 of the Response to the SO

volumes it jointly procures from the Parties in case of a post-merger price increase of more than 10%".⁸⁴¹

- (1266) As to (ii), the alleged intelligence of the Notifying Parties that SPCH is CID Lines second supplier has not been confirmed by SPCH,⁸⁴² or by CID Lines.⁸⁴³ Moreover, in the conference call of 3 October 2013, SPCH does not argue, as the Notifying Parties claimed, that "*it may have supplied volumes outside of France*", but that "*... it has no spare capacity of sodium hypochlorite for third parties, non-potassium buying customers. If ever such sales are made, they are low in volumes and frequency*".⁸⁴⁴
- (1267) Finally, a press release from January 2013 on SPCH's web-site, where SPCH mentions its intention to change its method of producing chlorine and caustic soda, to membrane. But, contrary to the Notifying Parties' affirmation,⁸⁴⁵ there is no mention of any expansion of capacity.⁸⁴⁶ It may be that SPCH will have to reduce its output in the short term because of that conversion.
- (1268) With regard to PCL, the Notifying Parties submitted a series of arguments to demonstrate the competitive constraint that they would represent on the JV. More precisely, the Notifying Parties claimed that the Commission relies too heavily on one minor aspect of PCL's operations that is PCL's off-take of sodium hypochlorite from the Notifying Parties which is equivalent to only 10% of the sodium hypochlorite that PCL sells. According to the Notifying Parties, this argument cannot be considered to support the Commission's conclusions that the competitive constraint posed by PCL is non-existent. The Notifying Parties also refer to PCL's expansion plans in Loos, which in their view have been neglected by the Commission. Moreover, they highlight again their belief that PCL is considered to be one of the five main suppliers in Belgium and it has been known to supply customers in the Benelux in the past.
- (1269) The Commission still considers that PCL cannot be considered to be a full competitive threat to the Notifying Parties, since PCL currently depends on volumes from INEOS (and in the future from the JV) to satisfy its own customers' needs for up to 10% of its output. In any event, PCL currently does not have sufficient spare capacity to compete with the JV post-merger. Already pre-merger, PCL does not have sufficient capacity to fully cover its supply agreements. This explains PCL's need for a back-up deal with INEOS, as well as its expansion plans in Loos.

⁸⁴¹ Non-confidential version of the agreed minutes of conference call of 3 October 2013 with Brenntag ID5022.

⁸⁴² Non-confidential version of the agreed minutes of conference call with SPCH of 7 October 2013 ID4195.

⁸⁴³ Reply of CID Lines to Phase I Questionnaire to competitors (Sodium hypochlorite), question 5 ID5394 and non-confidential version of the agreed minutes of conference call with CID Lines of 3 October 2013 ID417.5

⁸⁴⁴ Non-confidential version of the agreed minutes of conference call with SPCH of 7 October 2013, point 6 ID4195.

⁸⁴⁵ Paragraph 9.16 of the Response to the SO

⁸⁴⁶ http://www.spch-chemicals.com/electrolyse-a-membrane_ad16.html "*L'industrie du chlore alcali est l'industrie qui produit du chlore (Cl₂) et de la soude caustique, c'est-à-dire de l'hydroxyde de sodium (NaOH) ou de l'hydroxyde de potassium (KOH), par électrolyse d'une solution saline. Les principales techniques de production utilisées sont l'électrolyse à mercure, l'électrolyse à diaphragme et l'électrolyse à membrane. SPCH a l'intention comme la réglementation l'exige (directive 96/61/CE) de passer à la technologie membrane. Ce changement technologique est notre priorité.*"

- (1270) As regards in particular the expansion plans in Loos, those plans were discussed with PCL in a conference call with the Commission. During this call, PCL explained that this "*will be, at the earliest mid-2016, if at all*",⁸⁴⁷ which is more than two years away from the date of adoption of this Decision.
- (1271) Concerning the fact that PCL would have been named amongst the top five suppliers of sodium hypochlorite, it has already been explained that in view of the reduced number of suppliers the fact that PCL was included in such a list does not provide any valid indication as regards the ability of PCL to constrain the JV post-merger.
- (1272) The Notifying Parties have also argued that the JV will also continue to be under the competitive pressure of Kem One. Kem One supplies sodium hypochlorite from its plant in Lyon, France, 600 km away from the Benelux borders. The Commission contacted Kem One to verify the Notifying Parties' argument. In the conference call Kem One indicated that "*it can in no way be considered as a competitive bleach supplier in the Benelux geographical area. This is due to the distances involved*".⁸⁴⁸
- (1273) In their Response to the SO, the Notifying Parties did not contest the Commission's findings in the SO⁸⁴⁹ that Kem One is not likely to constitute a competitive constraint to the JV post-merger.
- (1274) The Commission therefore concludes that existing suppliers located in neighbouring areas to the Benelux would not constitute a sufficient constraint on the JV.

9.4.4. *There are no new suppliers entering the Benelux market*

- (1275) In both the Decision opening the proceedings and the SO, the Commission also provisionally concluded that there are no new suppliers entering the Benelux market.
- (1276) The Notifying Parties suggested in the course of the proceedings that new competitors, which are not currently active in the sodium hypochlorite market at all or in the Benelux, could enter the market as a reaction to a price increase, either by using existing electrolysis capacity or by building new one.⁸⁵⁰
- (1277) One of those competitors that according to the Notifying Parties could enter the market is Bayer. The Commission contacted Bayer in the framework of the market investigation to verify whether Bayer could make an investment and start producing sodium hypochlorite within a time-frame of two years, should a business opportunity arise.⁸⁵¹ Bayer stated that: "*the high investment and the lead times needed between the eventual decision of the board and the production of the first volumes (more than 24 months due to the administrative and regulatory requirements and construction*

⁸⁴⁷ Non-confidential version of the agreed minutes of conference call with Tessenderloo Chimie of 4 October 2013, point 5 ID4155.

⁸⁴⁸ Non-confidential versions of the agreed minutes of conference call with Kem One of 2 October 2013 ID4194.

⁸⁴⁹ SO, Paragraphs 769-771.

⁸⁵⁰ See *inter alia* Paragraph 6.84 Form CO Part F; Paragraph 7 of Notifying Parties' submission on sodium hypochlorite and Paragraphs 8.20, 8.21 and 8.25 of Notifying Parties' reply to the Decision opening the proceedings.

⁸⁵¹ See Horizontal Merger Guidelines, Paragraph 74.

time involved), make that the issue is completely outside Bayer's current medium term planning."⁸⁵²

- (1278) During Phase II, the Commission has also checked the Notifying Parties' argument that Bayer's plants in Dormagen, Leverkusen and Uerdingen, all close to the Benelux borders, have sufficient electrolysis capacity available to start producing sodium hypochlorite for the purposes of serving the customers of the Notifying Parties in Benelux. Bayer's reply was that "*[the] aforementioned plants do not have such electrolysis capacity available for such purposes*", since Bayer uses its "*electrolysis capacities in Dormagen, Leverkusen and Uerdingen to produce chlorine for other purposes, that is [...]. We don't have structural overcapacities and would therefore not be in the position to start producing sodium hypochlorite in commercial quantities for the market in Benelux.*"⁸⁵³
- (1279) The Notifying Parties argued that other companies, such as Elais-Unilever and Kapachim in Greece, Eredi Zarelli and Fater in Italy, Brenntag and Industrial Chemicals Group Limited ("ICGL") in the United Kingdom, could also build a stand-alone sodium hypochlorite plant in the Benelux, thereby exerting competitive pressure on the JV post-merger.⁸⁵⁴ The Commission sent questionnaires during the investigation in Phase II to these producers: none of whom stated that they intend to enter the Benelux market in the next two years.⁸⁵⁵
- (1280) In their Response to the SO, the Notifying Parties do not contest the Commission's findings on this issue.⁸⁵⁶
- (1281) The Commission therefore concludes that there are no new suppliers entering the Benelux market.

9.4.5. Demand side arguments of the Notifying Parties

- (1282) On the demand side, the Notifying Parties argued⁸⁵⁷ firstly that the contractual arrangements are such that customers: (i) can easily switch suppliers on a regular basis, given that the contracts are short term and are not complicated; and (ii) can multi-source sodium hypochlorite from a main and a back-up supplier, which also gives them the ability to exert strong pricing pressure on suppliers.
- (1283) In addition, the Notifying Parties submitted that due to the size of sodium hypochlorite customers and the significant volumes off-taken by them, those customers enjoy a considerable degree of buyer power.

⁸⁵² Non-confidential version of the agreed minutes of conference call with Bayer of 9 October 2013. ID4173.

⁸⁵³ Non-confidential Answers by Bayer to Phase II questions by European Commission on sodium hypochlorite, ID 4168.

⁸⁵⁴ See *inter alia* Paragraph 6.32 Form CO Part F; Paragraph 10 of Notifying Parties' submission on sodium hypochlorite and Paragraphs 8.22 to 8.24 of Notifying Parties' reply to the Decision opening the proceedings.

⁸⁵⁵ See non-confidential version of respective response, Sodium hypochlorite questions to small producers Phase II, Elais-Unilever ID4954, Kapachim ID4847, Fater ID4843, Brenntag ID5022 and ICGL ID4842 SO Paragraphs 772-775.

⁸⁵⁶ See *inter alia* Paragraphs 6.35 to 6.39; 6.74 to 6.76 and 6.85 Form CO Part F; Paragraphs 9 to 11 of Notifying Parties' submission on sodium hypochlorite and Paragraphs 8.28 to 8.31 of Notifying Parties' reply to the Decision opening the proceedings.

- (1284) The Commission notes that, further to the Transaction, the number of alternative available sources for sodium hypochlorite suppliers will be reduced drastically from three to two. The JV will become the undisputed market leader for sodium hypochlorite in the Benelux region. As discussed in Section 8.4.2, customers would only have the alternative to source from Akzo, which in turn has no ability or incentive to expand its output to the level that would offset a possible price increase from the JV.⁸⁵⁸
- (1285) In the SO, the Commission also provisionally concluded that any hypothetical buyer power that some of the Notifying Parties' large customers might have had pre-merger in those markets would disappear or at least be significantly reduced post-merger.
- (1286) In their Response to the SO, the Notifying Parties contested the Commission's findings on that issue.
- (1287) Firstly, they argued that the Commission in its assessment did not investigate all top ten customers of the Notifying Parties. The Commission sent the Phase I questionnaire to the top five customers of each of the Notifying Parties.⁸⁵⁹
- (1288) According to Annex F7 of the Form CO, this represents, for Solvay around [...] of its sales and the [...] customer is at around [...] of Solvay's sales. For INEOS, those figures are at [...] and [...] respectively. Therefore any customers not investigated are below this threshold and cannot be considered as big ones, as the Notifying Parties portrayed them to be.
- (1289) Secondly, the Notifying Parties disputed the Commission's opinion that even if only larger customers were considered to have buyer power, this could not preclude smaller customers from "*switching suppliers and obtaining a good price post-merger*".⁸⁶⁰ To support this point, the Notifying Parties repeated the arguments made in their Response to the Decision opening the proceedings, whereby smaller Solvay customers buy sodium hypochlorite at [...] than [...], Solvay's biggest customer. In the opinion of the Notifying Parties, smaller customers could be protected under the umbrella of larger customers' buyer power and this will not change following the creation of the JV.⁸⁶¹
- (1290) According to the Horizontal Merger Guidelines, countervailing power is "*the bargaining strength that the buyer has vis-à-vis the seller in commercial negotiations due to its size, its commercial significance to the seller and its ability to switch to alternative suppliers*". The guidelines suggest three ways in which countervailing buyer power may offset the negative impact of an upstream merger "*...if the buyer could immediately switch to other suppliers, credibly threaten to vertically integrate into the upstream market or to sponsor upstream expansion or entry for instance by persuading a potential entrant to enter by committing to placing large orders with this company*". Size is also seen as important in this context "*It is more likely that*

⁸⁵⁸ With the exception of [...] referred above in Section 8.4.2.

⁸⁵⁹ Notifying Parties Response to the SO, Paragraph 9.20.

⁸⁶⁰ Notifying Parties Response to the SO, Paragraph 9.21.

⁸⁶¹ Notifying Parties Response to the SO, Paragraph 9.22.

*large and sophisticated customers will possess this kind of countervailing buyer power than smaller firms in a fragmented industry*⁸⁶²

- (1291) In this case customers purchasing small quantities of sodium hypochlorite are very unlikely to exert any significant degree of countervailing buyer power. If the JV fails to negotiate successfully with a small customer, it will find it relatively easy to sell its freed-up capacity to other buyers. Even if this was not the case, the loss of a small customer would lead to only a small reduction in total profits. On the other hand even if large customers were to derive some degree of bargaining power from their large size and were able to keep it post-Transaction, the Notifying Parties have not submitted any convincing reason to consider that other smaller customers should be positively affected. The pricing data provided by the Parties does not allow any conclusions to be drawn as the prices of the different customers they refer to might be affected by many factors, including their location and the location of the plant from which they are supplied. In addition, small customers are not in a position to credibly threaten the JV with vertical integration into the upstream market or with the sponsoring of a new entrant. Finally, small customers will have a limited capacity to post-Transaction to threaten the JV with changing supplier since most of them multisource and, post-merger, essentially only Akzo and the JV will be supplying the market.
- (1292) On the basis of the elements above, the Commission considers that any hypothetical buyer power that some large customers of the Notifying Parties' customers might have had pre-merger in those markets would disappear or at least be significantly reduced post-merger and that small customers do not benefit from any buyer power.

9.4.6. Conclusion

- (1293) In light of the high market shares, increments and increase in the already high concentration levels in the Benelux market brought about by the Transaction, and taking into account that the JV will face only one credible competitor post-merger, Akzo, as well as the lack of potential competition from neighbouring markets and from new players, the Commission concludes that the Transaction will remove the competitive constraint that the Notifying Parties exert on each other in those markets, and that Akzo will also benefit from such reduction of competitive pressure.⁸⁶³ The reduction of those competitive constraints in the circumstances described in this Section 9.4. is likely to result in a significant price increase.
- (1294) Therefore, the Commission concludes that the Transaction will lead to a significant impediment to effective competition through the creation of a dominant position in the sodium hypochlorite market in Benelux.

9.5. Sodium Hypochlorite - Assessment of likely vertical effects

- (1295) Vertical relationships exist between sodium hypochlorite production and salt, between sodium hypochlorite and chlorine production technologies and between sodium hypochlorite and electrocoating, which also result in affected markets. For an assessment of these effects see respectively Sections 10.4.1., 10.4.2. and 10.4.3..

⁸⁶² Horizontal Merger Guidelines, paragraph 65.

⁸⁶³ Reply of Akzo to Phase I Questionnaire to competitors (Sodium hypochlorite) ID4169 and non-confidential version of the agreed minutes of conference call of 4 October 2013 ID4169

10. COMPETITIVE ASSESSMENT OF OTHER MARKETS WHERE THE COMMISSION DID NOT FIND CONCERNS

10.1. Ethylene

- (1296) INEOS produces ethylene at its crackers at Grangemouth (United Kingdom), Rafnes (Norway), Lavera (France) and Koln (Germany), but will not be contributing these crackers or its ethylene production to the JV. Solvay produces ethylene at the cracker at Feyzin (France), in which it has a 42.5% interest: Solvay will be contributing its participation in this ethylene cracker to the JV.
- (1297) There is, therefore, a horizontal overlap between INEOS' retained ethylene production and the ethylene production contributed to the JV by Solvay.⁸⁶⁴ However, that overlap does not result in affected markets, nor does it give rise to any competition concerns.
- (1298) According to the information submitted by the Notifying Parties, the bulk of their ethylene production is for internal use. As regards INEOS, in 2012, it produced approximately [...]kt/y of ethylene in the EEA, the majority of which was used internally and only [...]kt/y were sold on the merchant market. In turn, in 2013 Solvay produced [...]kt/y of ethylene in the EEA, of which only [...]kt/y were sold on the merchant market.
- (1299) The Notifying Parties therefore hold negligible combined market shares under both geographic market definitions (EEA, ARG+ pipeline), which are estimated to be below [0-5]*%. The market is highly fragmented and characterised by a high number of players, the largest ones holding a market share around [10-20]*%: the Transaction does not have a significant impact on such market structure.
- (1300) Taking into account also that no concerns arose during the market investigation, the Commission considers that the Transaction does not give rise to serious doubts as to its compatibility with the internal market as a result of horizontal effects in the market for ethylene.

10.2. Other products resulting from cracking of NGLs or naphtha

10.2.1. Propylene

- (1301) INEOS produces propylene at its crackers located in Grangemouth, Rafnes, Lavera and Köln. Solvay produces propylene only at the Feyzin cracker.
- (1302) As indicated in Section 3. only Solvay will be contributing a cracker to the JV. Therefore a horizontal overlap arises between INEOS' retained propylene production and the propylene production contributed to the JV by Solvay. However, that overlap does not result in affected markets, nor do they give rise to any competition concerns. A vertical relationship also exists between INEOS retained activities in propylene and Solvay activities in CAL which will be contributed to the JV. That vertical relationship gives rise to an affected market. However, any competition problem can also be excluded in this case.
- (1303) As regards the vertical relationship between propylene and CAL, see Section 10.14..

⁸⁶⁴ A vertical relationship exists between ethylene production and the production of EDC, but this does not result in affected markets.

10.2.2. *Butadiene*

- (1304) INEOS produces butadiene at its crackers located in Grangemouth, Lavera and Köln. Solvay produces butadiene only at the Feyzin cracker.
- (1305) As indicated in Section 10.1 only Solvay will be contributing a cracker to the JV. Therefore a horizontal overlap arises between INEOS' retained butadiene production and the butadiene production contributed to the JV by Solvay. That overlap results in affected markets.
- (1306) According to the information submitted by the Notifying Parties, under any possible geographic market definition (WE and EEA) the Notifying Parties' combined market shares would be above [10-20]*%. More precisely the combined market shares would amount to [20-30]*% in the EEA and [20-30]*% in WE.
- (1307) However the increment brought by Solvay would be negligible and it is estimated as not larger than [0-5]*% under both market definitions. Moreover, all of Solvay's sales of butadiene were made to a [...]*. Finally, other competitors, such as Lyondell Basel, Sabic, Versalis and Repsol, will remain in the market with unchanged market position. Therefore, no significant impact on the market structure would be brought about by the Transaction.
- (1308) The Commission therefore considers that the Transaction does not give rise to competition concerns as a result of horizontal effects in the market for butadiene.

10.2.3. *Raffinate 1*

- (1309) INEOS produces raffinate 1 at its crackers located in Grangemouth, Lavera and Köln, whilst Solvay produces raffinate 1 only at the Feyzin cracker.
- (1310) As indicated in Section 10.1, only Solvay will be contributing a cracker to the JV. Therefore a horizontal overlap arises between INEOS' retained raffinate 1 production and the raffinate 1 production contributed to the JV by Solvay. That overlap results in an affected market.
- (1311) According to the information submitted by the Notifying Parties, under the narrowest possible geographic market definition (WE) the Notifying Parties' combined market shares would be above [10-20]*%, but below [20-30]*%. More precisely the combined market shares would amount to [20-30]*%. Moreover, the increment brought by Solvay would not exceed [0-5]*%, and all Solvay's sales of raffinate 1 were made [...]*.⁸⁶⁵ Finally, other competitors, such as Lyondell Basel, Dow, Versalis and Repsol, will remain in the market with unchanged market position. Therefore, no significant impact on the market structure would be brought about by the Transaction.
- (1312) The Commission therefore considers that the Transaction does not give rise to competition concerns as a result of horizontal effects in the market for raffinate 1.

⁸⁶⁵ The duration of the contract is the lifetime of the Feyzin cracker. The Notifying Parties also submit that the Feyzin site does not have facilities (such as loading equipment) allowing Solvay to sell raffinate 1 to third parties other than Total.

10.3. Chlorine

- (1313) INEOS produces chlorine at its plants in Runcorn, Wilhelmshaven, Stenungsund, Rafnes and Tessenderlo, all of which will be contributed to the JV. Solvay produces chlorine at its plants in Martorell, Rheinberg, Tavaux, Jemeppe, Lillo, Zandvliet and Rosignano (Italy), which are being contributed to the JV, as well as three smaller chlorine plants in Bussi (Italy), Torrelavega (Spain) and Povia (Portugal), which will not be contributed to the JV, and which supply chlorine to other (non-PVC) parts of Solvay's business.
- (1314) The bulk of the Notifying Parties' chlorine production is for internal use. INEOS supplies chlorine to third parties only from its plants in Runcorn and Tessenderloo, whilst Solvay supplies chlorine from its site in Zandvliet/Lillo and from Rosignano and Torrelavega. A horizontal overlap therefore arises between the Notifying Parties' chlorine production activities contributed to the JV in Belgium. Such overlap results in an affected market. Vertical relationships exist, downstream, between chlorine production and the production of EDC and, upstream, between chlorine production and salt, between chlorine and chlorine production technologies and between chlorine and electrocoating, which also result in affected markets. However, no competition concerns arise.

10.3.1.1. Horizontal effects

- (1315) Both the Notifying Parties have production facilities and supply chlorine in Belgium.⁸⁶⁶
- (1316) In Belgium, Solvay produces chlorine at Zandvliet, Lillo and Jemeppe, but it sells chlorine only from Zandvliet and Lillo.⁸⁶⁷ Out of the [...] kt produced in 2012, [...] kt were sold to the merchant market, accounting for [80-90] % market share. [...] % of Solvay's sales to third parties ([...] kt), however, were made to [...] kt, under a [...] kt.⁸⁶⁸
- (1317) In Belgium, INEOS produced chlorine at its Tessenderlo plant. Out of the [...] kt/y produced in 2012 at Tessenderlo, only [...] kt/y were sold to [...] kt under a long-term structural contract. This chlorine is supplied via a dedicated pipeline to [...] kt and results from [...] kt. Those are the only sales of INEOS to third parties, accounting for [0-5] % market share. INEOS submits that it does not have the necessary administrative permits and infrastructure to sell chlorine to third parties other than [...] kt and that obtaining the relevant permits and setting up the needed infrastructure would require considerable investments and would require over a year.⁸⁶⁹ In turn,

⁸⁶⁶ For the rest there is no overlap between the Notifying Parties' activities, being INEOS' further sales of chlorine concentrated in the United Kingdom ([...] kt in 2012) and Solvay's further sales were made in Italy ([...] kt in 2012) and in Spain ([...] kt in 2012).

⁸⁶⁷ Jemeppe does not have the capacity to supply chlorine off site.

⁸⁶⁸ In light of these structural arrangements, the Notifying Parties submit that Solvay's sales to [...] kt should not be considered as part of the merchant market.

⁸⁶⁹ The Notifying Parties estimate that an environmental permit would be required to transport chlorine by rail and that it would take [...] kt to obtain such permit and investments up to EUR [...] kt (that is to say, including pre-basic engineering work, environmental consulting and an external safety expert), without certainty that the permit will be actually granted. Moreover, liquefaction, loading/unloading and storage facilities would have to be built, with investments of around EUR [...] kt in a time frame of around [...] kt (considering also the time needed to obtain the relevant building permit).

according to the Notifying Parties, [...] does not at present have in place the necessary infrastructure to source chlorine from third parties, although it is not contractually prevented from obtaining chlorine on the merchant market from third parties.⁸⁷⁰

- (1318) No other chlorine producer has capacity installed in Belgium. However, other players are selling chlorine in Belgium for a cumulative market share of [10-20]*%. Moreover, there are other players located within the radius of 500 km from Belgium which, according to the Notifying Parties, already have the existing capability to supply chlorine on the merchant market in Belgium, for a lower cost and at a quicker rate than INEOS: this would be in particular the case of PP Chemicals from its plant in Than (France) and AkzoNobel from its plant in Ibbenburen (and potentially Bitterfeld, both in Germany).
- (1319) Therefore, taking into account the negligible increment and the actual circumstances of the chlorine supplies made by Solvay and INEOS, no significant impact on the market structure would be brought about by the Transaction. Moreover, it should be taken into account that any overlap will be removed by the commitments offered by the Notifying Parties to remove competition concerns in the Commodity S-PVC market in so far as they provide for the divestment of INEOS Tessenderlo chlorine plant.⁸⁷¹
- (1320) Taking into account also that no concerns arose either through the market investigation, the Commission considers that the Transaction, in particular as modified by the commitments, does not give rise to competition concerns in the market for chlorine.

10.3.1.2. Vertical effects

- (1321) Regarding the vertical relationship between chlorine and salt, between chlorine and chlorine production technologies and between chlorine and electrocoating, see respectively Sections 10.4.1., 10.4.2. and 10.4.3..
- (1322) The Notifying Parties' market shares above [20-30]*% in production and sale of chlorine⁸⁷² vertically affects also the market for the production and sale of EDC. However, no competition concerns arise.
- (1323) First, the Notifying Parties' sales of chlorine are only made for non-PVC end applications. Second, the Notifying Parties' sales of chlorine are limited compared to the needs of the PVC industry. Third, with the exception of Shin-Etsu,⁸⁷³ all PVC producers are vertically integrated into chlorine. Therefore the JV will have neither the ability nor the incentive to engage into any input or customer foreclosure behaviour. Moreover, it should be taken into account that any overlap will be

⁸⁷⁰ In light of these structural arrangements, the Notifying Parties submit that INEOS' sales to [...] should not be considered as part of the merchant market.

⁸⁷¹ See Section 10.4.5. and 10.4.6.

⁸⁷² In Belgium, as indicated in Section 10.3 above, in the United Kingdom, where INEOS holds a [90-100]*% market share, and in Italy, where Solvay holds a [40-50]*% market share.

⁸⁷³ Shin-Etsu plant in the Netherland is supplied with chlorine by AkzoNobel, under a long term supply agreement. In Portugal Cires purchased approximately [...] kt/p.a of VCM from [...] under a structural contract which ended in [...]. Cires is now wholly owned by Shin-Etsu, which supplies the majority of its VCM requirements.

removed by the commitments offered by the Notifying Parties to remove competition concerns in the Commodity S-PVC market in so far as they provide for the divestment of INEOS Tessengerlo chlorine plant.⁸⁷⁴

- (1324) Taking into account also that no concerns arose either through the market investigation, the Commission considers that the Transaction, in particular as modified by the commitments, does not give rise to competition concerns with regard to the market for chlorine.

10.4. Inputs and technologies for the production of chlorine

10.4.1. Salt

- (1325) INEOS produces salt at its plant in Runcorn, whilst Solvay produces salt in Jemeppe and Tavaux. INEOS will retain its salt production activities, whilst Solvay will contribute its salt production facilities to the JV. Since 2002 only INEOS had sales of salt in the merchant market. Therefore the Transaction does not give rise to horizontal overlaps.
- (1326) A vertical relationship exists between INEOS salt production and Solvay's downstream production of chlorine, caustic soda and sodium hypochlorite, which also results in affected markets due to the market share above [20-30]*% hold by Solvay and the JV in the downstream markets. However, no competition concerns arise.
- (1327) First, INEOS supplied minor volumes of salt to clients situated in Continental Europe, accounting for less than [0-5]*% of the merchant market under any possible market definition in 2012. Second, other sizable producers are supplying salt in the market, such as ESCO, AkzoNobel, Iberpotash and GDF. Third, Solvay's share of the demand for salt for chemical transformation in the same area remains below [0-5]*%. Forth, the limited volumes of salt sold by INEOS in Continental Europe would not be able to satisfy Solvay's merchant market demand, and INEOS has no plans to redirect the totality of its sales to Continental Europe. Therefore post-Transaction the Notifying Parties will have neither the ability nor the incentive to engage into any input or customer foreclosure behaviour.
- (1328) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to the market for salt.

10.4.2. Chlorine production technologies

- (1329) Only INEOS is active from the United Kingdom in the provision of chlorine cell technology, equipment and design in relation to membrane based chlorine cellrooms primarily under the brand name BICHLOR™. This business will not be contributed to the JV. Therefore the Transaction does not give rise to horizontal overlaps.
- (1330) A vertical relationship exists between the supply by INEOS of chlorine cellroom technology and the JV's activities in the production of chlorine, sodium hypochlorite and caustic soda, which also results in affected markets due to the market share above [20-30]*% hold by Solvay and the JV in the downstream markets. However, no competition concerns arise.

⁸⁷⁴ See Section 10.4.5. and 10.4.6.

- (1331) First, INEOS is a marginal supplier of chlorine cellroom technologies, holding in 2012 a market share of [0-05]*% in the narrowest market for the supply of membrane chlorine cellroom technology⁸⁷⁵ at global level.⁸⁷⁶ Second, other sizable suppliers will remain in the market: these are Asahi Kasei from Japan ([30-40]*% market share world-wide), Beijing Machinery from China ([20-30]*% market share world-wide), CEC from Japan ([20-30]*% market share world-wide) and Uhde from Germany ([10-20]*% market share world-wide). Third, Solvay does not represent a significant customer for chlorine cellroom technology⁸⁷⁷ and there are a wide range of other chlor-alkali customers globally within and outside the vinyls industry. Therefore post-Transaction the Notifying Parties will have neither the ability nor the incentive to engage into any input or customer foreclosure behaviour.
- (1332) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to chlorine market technologies.

10.4.3. *Electrocoating*

- (1333) Only INEOS supplies electrocoatings on the merchant market. This business will not be contributed to the JV. Therefore the Transaction does not give rise to horizontal overlaps.
- (1334) A vertical relationship exists between the supply of electrocoatings for chlorine cells by INEOS and the JV's activities in the production of chlorine, sodium hypochlorite and caustic soda, which also results in affected markets due to the market share above [20-30]*% hold by Solvay and the JV in the downstream markets. However, no competition concerns arise.
- (1335) First, INEOS' market share in the electrocoatings for chlorine cells market is low ([0-5]*% worldwide and [5-10]*% EEA-wide). Second, other sizable suppliers will remain in the market, such as in particular De Nora, accounting for 80-90% of electrocoatings sales globally (at least outside China) and in the EEA. Third, Solvay's share of the demand represents around [5-10]*% of total estimated merchant market demand in the narrowest possible market (EEA). Forth, a wide range of customers will remain in the market, both at EEA and global level. Therefore post-Transaction the Notifying Parties will have neither the ability nor the incentive to engage into any input or customer foreclosure behaviour.
- (1336) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to electrocoatings.

10.5. **CSL**

- (1337) INEOS manufactures and sells in the merchant market only CSL from its plants in Tessenderlo, Wilhelmshaven, Rafnes, Stenungsund and Runcorn, all of which will be

⁸⁷⁵ INEOS has not been active in the mercury or diaphragm chlorine cellroom technology licensing markets over the past five years. In any event, the Notifying Parties submitted that, to their best knowledge, there have been no licences of mercury cell technology in the past five years and any licenses of diaphragm cell technology have been limited.

⁸⁷⁶ [...]*

⁸⁷⁷ Solvay has not acquired any licences for chlorine cellroom technology on the merchant market in 2012 (either in the EEA or on a global basis). Any use of chlorine cellroom technology made by Solvay during 2012 involved the implementation of third party licences which had been obtained in previous years.

contributed to the JV. In the EEA Solvay produces and sells both liquid and solid caustic soda from Jemeppe, Lillo, Zandvilet, Tavaux, Rheinberg, Rosignano, and Martorell, all of which will be contributed to the JV, as well as at Póvoa de Santa Iria (Portugal) Torrelavega (Spain) and Bussi sul Tirino (Italy), which will not be contributed to the JV.

- (1338) Therefore a horizontal overlap arises between the Notifying Parties' activities in CSL. Such overlap results in an affected market.⁸⁷⁸ Vertical relationships exist between CSL production and salt, between CSL and chlorine production technologies and between CSL and electrocoating, which also result in affected markets. However, no competition concerns arise.

10.5.1. Horizontal effects

- (1339) According to the information submitted by the Notifying Parties, under any possible geographic market definition (NWE and EEA) in 2012 the Notifying Parties' combined market shares were above [10-20]*%. More precisely their combined market shares would amount to [30-40]*% in the EEA and [30-40]*% in NWE, with an increment of respectively [10-20]*% and [10-20]*%.
- (1340) A large number of competitors would remain active in the market, such as AkzoNobel ([10-20]*% market share in the EEA; [10-20]*% in NWE), Dow (EEA: [10-20]*%; NWE: [10-20]*%), Bayer (EEA: [5-10]*%; NWE: [10-20]*%), Vinnolit (EEA: [5-10]*%; NWE: [5-10]*%), KEM ONE (EEA: [0-5]*%; NWE: [0-05]*%), Vestolit (EEA: [0-5]*%; NWE: [0-5]*%), Anwil (EEA: [0-5]*%; NWE: [0-5]*%), Ercros (EEA: [0-5]*%; NWE: [0-05]*%).
- (1341) In any event, CSL is an inevitable by-product of the production of PVC. As indicated in Section 6.2, PVC and CSL production and sales decisions are intertwined and based on joint profits. Given this intrinsic link, the Commission considers that any competition problem which could arise in the market for CSL would only result from the effects of the Transaction in Commodity S-PVC market. The Commission also considers that any remedy for the competition concerns identified by the Commission in the market for Commodity S-PVC would likely also have an impact on the CSL market. In that case, the combined share of the Notifying Parties in the market for CSL would drop to about [20-30]*%⁸⁷⁹ as a result of the remedies submitted for S-PVC.
- (1342) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to CSL.

⁸⁷⁸ Even assuming a single product market for both liquid and solid caustic soda, the competitive assessment, and in particular the Notifying Parties' and their competitors' market share, would not appreciably be altered given the limited size of the solid caustic soda segment accounting for less than 5% of the total caustic soda market both in the EEA and in NWE.

⁸⁷⁹ Based on the Notifying Parties' estimate in the reply to the Commission RFI of 1 April 2014, adjusted to take into account half of the market shares attributed to the Runcorn joint venture. See below Section 10.4.

10.5.2. Vertical effects

(1343) Regarding the vertical relationship between CSL and salt, between CSL and chlorine production technologies and between CSL and electrocoating, see respectively Sections 10.4.1., 10.4.2. and 10.4.3. .

10.6. EDC

(1344) INEOS produces and sells EDC from its plants at Runcorn, Rafnes, Stenungsund and Tessenderlo.⁸⁸⁰ Solvay produces and sells EDC from its plants at Jemeppe, Martorell, Tavaux and Zandvliet. All of the Notifying Parties' EDC assets will be contributed to the JV.

(1345) Therefore a horizontal overlap arises between the Notifying Parties' activities. However, that overlap does not result in an affected market, nor does it give rise to any competition concerns. A vertical relationship also exists, upstream, between EDC production and chlorine and between EDC production and EDC/VCM technologies as well as downstream between EDC production and VCM production, which results in affected markets.

(1346) Regarding the vertical relationship between EDC production and chlorine and between EDC production and EDC/VCM technologies, see respectively Sections 10.3.1.2. and 10.8.1.2. .

(1347) Regarding the vertical relationship between EDC production and VCM production, any risk of input foreclosure is excluded due to the very limited market presence of the Notifying Parties in the merchant market for EDC and the presence of other relevant suppliers.

(1348) Any risk of customer foreclosure is also excluded. This is because the Notifying Parties are not significant purchasers of EDC in the merchant market. In 2012 INEOS only purchased [...] kt/y of EDC from traders, such as [...]*, whilst Solvay purchased [...] kt/y from [...]*,⁸⁸¹ under [...]*: this would account for [10-20]*% and less than [0-05]*% of the EDC demand in respectively NWE and the EEA.

(1349) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to EDC.

10.7. VCM

(1350) INEOS produces and sells VCM from its plants in Rafnes, Wilhelmshaven, Stenungsund and Tessenderlo.⁸⁸² Solvay produces and sells VCM from its plants in Jemeppe, Tavaux, Rheinberg and Martorell. All of the Notifying Parties' VCM assets will be contributed to the JV.

(1351) Therefore a horizontal overlap arises between the Notifying Parties' activities. That overlap results in an affected market. Vertical relationships also exist, upstream, between EDC production and VCM production and between VCM production and EDC/VCM technologies and, downstream, between VCM production and the

⁸⁸⁰ INEOS shut down the chlorine cellroom at Wilhelmshaven at the beginning of 2013.

⁸⁸¹ [...]*

⁸⁸² INEOS shut down the VCM plant at Runcorn at the beginning of 2013.

production of PVC, which also result in affected markets. However, no competition concerns arise.

10.7.1.1. Horizontal effects

- (1352) According to the information submitted by the Notifying Parties, in 2012 the Notifying Parties' combined market share was above [10-20]*% and also slightly above [20-30]*% only in the EEA.⁸⁸³ More precisely the combined market shares amounted to [20-30]*% in the EEA. The increment brought by Solvay would be around [5-10]*%.
- (1353) [...] of INEOS sales in 2012 were made to [...] ([...] kt/y, for the supply of VCM to [...] plant) and [...] ([...] kt/y) pursuant to long term [...]. However, the supply contract with [...] ended in [...] and has not been renewed, which would reduce the market share of INEOS to approximately [10-20]*%. Moreover, in 2013 INEOS gave prior notification regarding the termination of the [...] contract which will expire in [...].⁸⁸⁴
- (1354) [60-70]*% of Solvay's 2012 VCM sales are attributable to [...]. This supply agreement ended in 2012 and has not been renewed, which would reduce the market share of Solvay to less than [0-5]*%.
- (1355) Moreover, the most significant supplier of VCM in the merchant market is Dow, which already held a market share of approximately [60-70]*% in 2012.
- (1356) Therefore, the Transaction does not have a significant impact on the market structure.
- (1357) Taking into account also that no concerns arose either through the market investigation, the Commission considers that the Transaction does not give rise to competition concerns in the market for VCM.

10.7.1.2. Vertical effects

- (1358) For the vertical relationship between EDC and VCM and between VCM production and EDC/VCM technologies, see respectively Sections 10.6.1.2 and 10.8.1.2.
- (1359) VCM is also vertically related to the E-PVC and S-PVC markets. The Notifying Parties' combined market shares are above [20-30]*% in those markets and therefore the Transaction results in vertically affected markets. However, no competition concerns arise.
- (1360) As indicated in Section 10.7.1.2, [...] of INEOS' sales into the merchant market related to long term contracts with [...] (for its E-PVC production at [...]) and [...], which expired or are set to expire regardless of the Transaction. Likewise, [...] of Solvay's sales into the merchant market related to a long term contract [...] which has also already expired. The rest of Solvay's sales of VCM are made to non-PVC producers. Moreover, the VCM merchant market has a very limited size and currently operates solely to meet ad hoc requirements for VCM to cover production shortfalls or outages, whilst normally PVC producers have sufficient VCM capacity

⁸⁸³ According to the Notifying Parties' estimate their combined market shares amounted to [10-20]*% in NWE.

⁸⁸⁴ Non confidential version of the minutes of the conference call with [...] of 19 November 2013 ID4859.

to address their internal demand. Finally, Dow, a large supplier of VCM will remain in the market. Therefore, any risk of input foreclosure as result of the Transaction can be ruled out.

- (1361) Moreover, Solvay does not purchase VCM from third parties and INEOS only purchases VCM in the merchant market for its S-PVC plant in Schkopau through a long-term structural contract with Dow, which has just renewed. Therefore, neither INEOS nor Solvay (nor the JV) are important VCM customers and any risk of customer foreclosure can also be excluded as result of the Transaction.
- (1362) The Commission therefore considers that the Transaction does not give rise to competition concerns as to its compatibility with the internal market with regard to VCM.

10.8. Catalysts and technologies for the production of EDC/VCM

10.8.1. EDC/VCM technology

- (1363) The Notifying Parties are both active in the licensing of EDC/VCM technology and they will both retain these activities outside the JV. Those businesses will not be contributed to the JV.⁸⁸⁵ Therefore the Transaction does not give rise to horizontal overlaps.⁸⁸⁶
- (1364) EDC/VCM technologies are vertically related to the EDC and VCM markets. The market shares above [20-30]*% in EDC/VCM technologies hold by INEOS and in VCM production by both the Notifying Parties give rise to vertically affected markets. However, no competition concerns arise.
- (1365) With regard to input foreclosure, as indicated in Section 7.8.1.1., other alternative suppliers are present in the market. Moreover, having regard to the EDC/VCM technology installed in the EEA/NWE, none of the currently installed technologies were licensed either by INEOS or Solvay. Indeed, the majority of the technologies used in the EEA/NWE are proprietary (Kem One, Vinnolit and Vestolit) while Oxyvinyls accounts for more than half of the installed non-proprietary (licensed) technology. Also globally, most of the big producers possess their own proprietary technologies. Moreover, according to the information submitted by the Notifying Parties, capacity expansion is not reliant on third party technology given that producers can increase capacity through debottlenecking and expansion of existing sites. Therefore the Transaction will not have any effect on INEOS ability and incentive to engage into any input foreclosure behaviour.
- (1366) As regards customer foreclosure, any risk is excluded since the Notifying Parties mainly use their own proprietary technologies and in any event, given that no new demand for EDC/VCM technologies is expected to grow in the EEA, where the JV be active, and capacity expansion can be achieved without a new license, the

⁸⁸⁵ All technologies businesses are carried out by INEOS Technologies and Solvay Technologies which will not be contributed to the JV.

⁸⁸⁶ EDC/VCM technology markets are upstream the production of EDC and VCM, where the JV will be active. However the Transaction will not lead to competition concerns as result of cooperative effects. This is in particular because Solvay S.A. is the owner of Solvay's technologies and manages its licensing activities outside the JV with BASF in the chlorvinyls market, SolVin. This will not change post-Transaction, especially since it will exit the JV after 3 to 6 years from its creation.

Transaction will not attribute to the JV any ability or incentive to engage into any customer foreclosure behaviour.

(1367) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to EDC/VCM technologies.

10.8.2. EDC catalysts

(1368) INEOS supplies fixed and fluid bed EDC catalysts whilst Solvay Technologies sells only fluid bed catalysts and only to its EDC/VCM technology customers. Those businesses will not be contributed to the JV. Therefore the Transaction does not give rise to horizontal overlaps.⁸⁸⁷

(1369) EDC catalysts are vertically related to the EDC production. INEOS holds a market share above [20-30]*% in fixed bed EDC catalysts which give rise to a vertically affected market. However, no competition concerns arise.

(1370) In the downstream market, the EDC market, in the EEA, where the JV will be active, the only plants which purchase fixed bed catalysts on the merchant market, Stenungsund and Zandvliet, belong to INEOS and Solvay and will be contributed to the JV. Therefore it is excluded that the JV will give rise to any risk of input foreclosure.

(1371) Moreover at both Stenungsund and Zandvliet EDC catalysts are sourced [...]*. The Zandvliet plant gets [...]* tonnes of EDC fixed bed catalysts from [...]* which corresponds to [...]*% of total merchant market volume sales of EDC fixed bed catalysts globally in 2012. Therefore, the Commission excludes that the Transaction will attribute to the JV any ability or incentive to engage in any customer foreclosure behaviour.⁸⁸⁸

(1372) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to EDC catalysts.

10.9. Hydrochloric Acid

(1373) Both Notifying Parties produce hydrochloric acid and supply it on the merchant market. The majority of those activities will be contributed by both the Notifying Parties to the JV.⁸⁸⁹

(1374) A horizontal overlap therefore arises from the Transaction, which gives rise to affected markets only in France. However, no competition concern will arise.

(1375) According to the information submitted by the Notifying Parties, in 2012 under any possible market definition the Notifying Parties' combined market shares in France would amount to [20-30]* or [20-30]*%, depending on whether the overall market

⁸⁸⁷ EDC catalysts markets are upstream the production of EDC, where the JV will be active. However the Transaction will not lead to competition concerns. Solvay S.A. is the owner of Solvay's technologies and manages its licensing activities outside the JV with BASF in the chlorvinyls market, SolVin. This will not change post-Transaction, especially since it will exit the JV after 3 to 6 years from its creation.

⁸⁸⁸ With regard to INEOS plant, Stenungsund, the Transaction does not bring about any change in terms of ability and/or incentive to engage into any customer foreclosure behaviour.

⁸⁸⁹ INEOS will contribute all its hydrochloric acid production to the JV with the exception of its Baleycourt site. Solvay will contribute to the JV all its hydrochloric acid assets with the exception of Bussi, Spinetta and Povoia.

for hydrochloric acid is considered or only the technical grade segment. The combined market shares will therefore be below [20-30]*%⁸⁹⁰ and the increment brought by INEOS will be modest under both market definitions at around [5-10]*%. Moreover, a number of other suppliers will be active in France, such as Novacid (the market leader with [30-40]*% market share in the overall market), Kem One ([10-20]*%) and Bayer ([10-20]*%).⁸⁹¹

(1376) The Commission therefore considers that the Transaction does not give rise to competition concerns in the market for hydrochloric acid.⁸⁹²

10.10. E-PVC

(1377) Solvay produces E-PVC at its production sites in Rheinberg (capacity: [...]*kt/y), and Tavaux (capacity: [...]*kt/y).⁸⁹³ INEOS produces E-PVC at its production sites in Stenungsund (capacity: [...]*kt/y) and Porsgrunn (capacity: [...]*kt/y). All those production sites will be contributed to the JV.

(1378) A horizontal overlap therefore arises between the Notifying Parties' E-PVC activities contributed to the JV. Such overlap results in an affected market. Moreover, vertical relationships exist, upstream, between E-PVC production and VCM production and between E-PVC production and PVC additives and, downstream, between E-PVC production and S-PVC compounding, which also result in affected markets. However, no competition concerns arise.

10.10.1. Horizontal non-coordinated effects

(1379) The Notifying Parties argue that the Transaction will not give rise to a significant impediment to effective competition on the market for E-PVC. That is because other sizable players with sufficient spare capacity will remain in the market, in particular Vinnolit and Vestolit, which are respectively the first and the second market players in the EEA. Moreover, according to the Notifying Parties, post-Transaction a significant competitive constraint will be exerted on the JV by imports, in particular from North American suppliers which can benefit from a more favourable cost base compared to EEA PVC producers. Finally, customers, who already multisource from different suppliers, would have little difficulties in switching, which could be undertaken on average and depending on the application at low costs (between EUR 25 000 and EUR 50 000) in one to three months.

(1380) In 2012, the Notifying Parties estimate that in the EEA the E-PVC market was worth [...]* and the demand of E-PVC was [...]* kt/y, whilst the capacity available for

⁸⁹⁰ See Horizontal Merger Guidelines, Paragraph 18.

⁸⁹¹ The Notifying Parties were not able to provide market shares for the narrowest technical grade segment.
⁸⁹² The Notifying Parties submitted that the hydrochloric acid market is relatively small and highly non-transparent. Moreover, as the Commission has recognised in the past, the majority (90%) of the hydrochloric acid produced in the EEA is technical grade, that is, it is produced as a by-product of the manufacture of other more valuable chemical products and thus decisions on volumes of technical grade hydrochloric acid to be produced are driven by decision in relation to other products (see Case M.2690 *Solvay/Montedison-Ausimont* (2002), Paragraph 144).

⁸⁹³ Solvay also jointly controls RusVinyl, a 50/50 joint venture between Solvay and Sibur, which is expected to start producing and marketing E-PVC at its site in Kstovo (Russia) during the second quarter of 2014. The RusVinyl plant will not be contributed to the JV.

producing this resin consisted of [...] kt/y.⁸⁹⁴ In that context, the Notifying Parties' and their competitors' market shares based on sales, both volume and value, and capacity, are set out in **Table 15**.

**Table 15: Notifying Parties' market shares in E-PVC
by volume in 2012 in the EEA**

	Merchant Market	Capacity
INEOS	[10-20]*%	[10-20]*%
Solvay	[10-20]*%	[10-20]*%
Combined	[30-40]*%	[20-30]*%
Vinnolit	[30-40]*%	[30-40]*%
Vestolit	[20-30]*%	[20-30]*%
KEM ONE	[10-20]*%	[10-20]*%
Shin Etsu	[0-5]*%	[0-5]*%
Novacky	[0-5]*%	[5-10]*%

Source: Notifying Parties' best estimates

- (1381) As it can be seen from Table 15, the Notifying Parties' combined market shares do not exceed [30-40]*%. In addition, there are other players with similar or greater market presence. More precisely, looking at capacity data,⁸⁹⁵ one of those players, Vinnolit, is the market leader with approximately [...] kt/y. After the JV, Vestolit would follow with [...] kt/y, and Kem One with [...] kt/y. Other players active in the market are ShinEtsu, with [...] kt/y of E-PVC capacity, and Fortischem, which took over Novacky's [...] kt/y of capacity.
- (1382) The market investigation showed that all players are operating at high capacity utilization rates. However, at the end of 2012 Vinnolit launched the expansion of its E-PVC plant Burghausen and it has announced investments in Cologne for 2014.⁸⁹⁶
- (1383) On the basis of the market investigation, the Commission considers that, given the differentiation of their E-PVC offering, INEOS and Solvay do not constitute close alternatives for the customers.⁸⁹⁷ Moreover, customers typically do not enter into long term supply contracts, but, if a formal agreement is concluded at all, the maximum duration does not exceed one year. On average, time and cost of switching appear to be similar to those indicated for commodity S-PVC; however given the higher price and degree of differentiation of E-PVC, customers seem to perceive

⁸⁹⁴ Notifying Parties' best estimates, which highly correspond to the actual figures collected by the Commission in the course of the market investigation.

⁸⁹⁵ On the importance of market shares by capacity in the PVC industry see above Section 9.1.1.4.

⁸⁹⁶ See Vinnolit press release, <http://www.vinnolit.de/vinnolit.nsf/id/e-bgh-en>, visited on 11 October 2013.

⁸⁹⁷ See responses to question 5 of Q4 – Emulsion Polyvinyl Chloride – Customers.

switching costs as relatively lower. In that context over 75% of the customers indicated that they would be ready to switch supplier in response to a SSNIP.⁸⁹⁸

- (1384) The Commission therefore considers that the proposed Transaction would not give rise to competition concerns in the market for E-PVC.⁸⁹⁹

10.10.2. *Horizontal coordinated effects*

- (1385) The Notifying Parties submit that the proposed Transaction will not lead to horizontal coordinated effects in the market for E-PVC. That is because there is no pricing transparency, since prices are negotiated bilaterally and are very different across different customers. Moreover, since E-PVC is sold in multiple grades by all E-PVC suppliers, it would be difficult to identify a focal point, namely a leading E-PVC grade whose price could be considered as a point of reference. Finally, any attempt by E-PVC suppliers to coordinate their prices would induce customers to switch to importers or to alternative products.

- (1386) In a previous case,⁹⁰⁰ the Commission assessed whether the E-PVC market was predisposed to give rise to coordinated effects and it concluded that it was not the case, given the existence of several product grades and the consequent absence of any reference point, the lack of price transparency and the existence of a group of suppliers who would not coordinate and jeopardise the outcome expected from coordination.

- (1387) In this case, the Commission considers that the market investigation is broadly consistent with such results.

- (1388) In particular, as indicated above in Section 8.10.1.3, the E-PVC market is characterised by a high degree of differentiation between the grades which present different qualities and properties which is normally reflected in the final price.⁹⁰¹

- (1389) Ethylene supply is the main element determining the price of E-PVC.⁹⁰² There are several models of customer relationship: in certain instances prices may be negotiated once a year and indexed to the cost of raw material as published in official reports (and therefore the price of E-PVC is directly linked to the price of ethylene and may change over the time depending on changes in the latter); in other instances the prices can be negotiated on a quarterly or monthly bases, taking into account the cost of ethylene, but without it being directly indexed.⁹⁰³ Volume discounts or rebates may also be negotiated.

- (1390) As a result, whilst there may be a certain convergence of prices because of the great incidence of the cost of raw material, prices greatly vary. This is evidenced in the

⁸⁹⁸ See responses to question 16 of Q4 – Emulsion Polyvinyl Chloride – Customers

⁸⁹⁹ This appears to be the case not only as regards price effects, but also with reference to product variety and more precisely to the possibility of a reduction of the grade of E-PVC available in the market as a result of a portfolio rationalisation by the joint venture. This is because it does not appear that the JV would have more ability or incentives than the Notifying Parties currently have to withdraw from the market grades of E-PVC that each of the produces with very unique properties and technical characteristics.

⁹⁰⁰ Case No COMP/M.4572 *Vinnolit / INEOS CV Specialty PVC Business*.

⁹⁰¹ See non confidential minutes of the conference call with Vinnolit dated 7 October 2013 [ID3597].

⁹⁰² See responses to question 4 of Q4 – Emulsion Polyvinyl Chloride – Customers.

⁹⁰³ See non confidential minutes of the conference call with Vinnolit dated 7 October 2013 [ID3597].

Figures 26 and 27, showing the average E-PVC sales prices of Solvay's and INEOS' top selling customers in 2012.

Figure 26: Average E-PVC sales prices of Solvay for top selling customers in 2012

[...]*

Source: Solvay.

Figure 27: Average E-PVC sales prices of INEOS for top selling customers in 2012

[...]*

Source: INEOS.

- (1391) The Commission has also found that customers always look at price opportunities and are able to and do shift their volumes in order to get better prices, provided that it can supply the required E-PVC grade.⁹⁰⁴
- (1392) Finally no concerns have been expressed in the market investigation with regard to possible coordinated effects resulting from the proposed Transaction.
- (1393) The Commission therefore considers that the proposed Transaction would not give rise to competition concerns in the market for E-PVC.

10.10.3. Vertical effects

- (1394) A Vertical relationship exists between E-PVC production and VCM production upstream, which results in an affected market. For an assessment of these effects see Section 10.7.1.2.

10.11. Additives and technologies for the production of PVC

10.11.1. S-PVC technology

- (1395) Since 2010 only INEOS is active in the supply of S-PVC technology on the merchant market. Solvay only licenses its S-PVC technology to its subsidiaries and joint venture outside the EEA and to its S-PVC plants which will be contributed to the JV. None of those businesses will be contributed to the JV. Therefore the Transaction does not give rise to horizontal overlaps. A vertical relationship exists between INEOS' licensing activities and the JV's downstream activities in relation to S-PVC production, which results into an affected market. However, no competition concern arises.
- (1396) Whilst INEOS would be the market leader globally with a market share of [40-50]*% and it has won the highest number of bids for S-PVC plant projects since 2007 at world-wide level,⁹⁰⁵ other players are active in the market and could provide an alternative at the JV competitors. These are in particular Kem One, Chisso and Uhde,⁹⁰⁶ holding market shares of respectively [30-40]*%, [20-30]*% and [5-10]*%. Moreover, having regard to the S-PVC technology installed in the EEA/NWE, where the JV will be active, none of the currently installed technologies were licensed by

⁹⁰⁴ See replies to question 15 of Q4 – Emulsion Polyvinyl Chloride – Customers. See also non confidential minutes of the conference call with Silgan White Cap Deutschland GmbH dated 7 October 2013 [ID5227].

⁹⁰⁵ According to the information provided by the Notifying Parties, no bidding process has taken place in the EEA since 2007.

⁹⁰⁶ Uhde supplies S-PVC technology licensed from Vinnolit.

INEOS. Indeed, the majority of the technologies used in the EEA/NWE are either proprietary (for example, Kem One, Vinnolit, Solvay and ShinEtsu) or supplied by Uhde. Therefore the Transaction will not have any effect on INEOS ability and incentive to engage into any input foreclosure behaviour.

- (1397) As regards customer foreclosure, any risk is ruled out since Solvay already uses its own proprietary technologies. The Transaction will not give rise to any ability or incentive of the JV to engage in any customer foreclosure behaviour.
- (1398) The Commission therefore considers that the Transaction does not give rise to competition with regard to S-PVC technology.

10.11.2. PVC additives

- (1399) Only INEOS is active in the supply of PVC additives on the merchant market.⁹⁰⁷ Solvay does not sell PVC additives to third parties but instead it purchases certain additives on the merchant market.⁹⁰⁸ Those businesses will not be contributed to the JV. Therefore the Transaction does not give rise to horizontal overlaps. A vertical relationship exists between INEOS' PVC additive activities and the JV's downstream activities in relation to S-PVC and E-PVC, which results in affected markets. However, no competition concerns arise.
- (1400) According to the information provided by the Notifying Parties, INEOS' market share of the overall market for PVC additives would be lower than [10-20]*% globally and in the EEA. When segmenting the market according to the type of additive, INEOS' market shares would be above [20-30]*% only for antifouling additives ([20-30]*%) and DOA ([20-30]*%) in the EEA. Other suppliers, such as Synthomer, Kuraray, Nippon Gohsei, 3V and AkzoNobel (the market leader for anti-fouling PVC both globally and in the EEA), will remain in the market and will be able to provide the necessary additives to the JV competitors: in fact, according to the information provided by the Notifying Parties, there is no PVC additive for the polymerisation of PVC supplied by INEOS on the merchant market which is not available also from a competitor. Therefore the Transaction will not have any effect on INEOS ability and incentive to engage in any input foreclosure behaviour with regard to the overall PVC additives market, or with regard to any specific additive.
- (1401) As regards customer foreclosure, Solvay only purchases antifouling additives and DOA and it is not a significant customer: in 2012 its share of demand accounted for [0-5]*% of the EEA market and was below [0-05]*% worldwide with regard to antifouling additives and it was below [0-5]*% under any possible geographic market for DOA. Moreover, INEOS is already a supplier or at least an accredited supplier of Solvay for these additives. The Transaction will not attribute to the JV any ability or incentive to engage into any customer foreclosure behaviour.
- (1402) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to S-PVC additives.

⁹⁰⁷ INEOS sells on the merchant market a range of PVC additives such as antifouling additives, primary and secondary suspending agents and other PVC additives (anti-foaming/stabilisers) as well as di-ethyl hexyl adipate ("DOA") which is plasticizer used in the production of PVC to increase its flexibility and durability.

⁹⁰⁸ More precisely, antifouling additives and DOA.

10.12. S-PVC compounds

- (1403) INEOS has S-PVC compounding facilities in the Aycliffe, Helsingborg (Sweden) and Sins (Switzerland) plants. Solvay also carries out some compounding of S-PVC in its compounding facilities located in Chevigny-St-Sauveur (France), Ferrara (Italy) and Barcelona (Spain). These activities will not be contributed to the JV. Therefore the Transaction does not give rise to horizontal overlaps.⁹⁰⁹
- (1404) S-PVC compounds are vertically related to Commodity S-PVC production. The Notifying Parties' market shares above [20-30]*% in Commodity S-PVC and dry blend S-PVC compounds give rise to a vertically affected market. However, no competition concerns arise.
- (1405) As regards input foreclosure, it should be noted that customers of Commodity S-PVC suppliers normally multisource and that the Notifying Parties currently sell the vast majority of their commodity S-PVC production on the merchant market to independent S-PVC compounders or S-PVC converters and only use minor volumes ([...]*% of INEOS' commodity S-PVC production and [...]*% of Solvay's production) for in-house compounding. Therefore, any loss of businesses resulting from input foreclosure or margin squeezing behaviour against independent compounders would not be compensated by a hypothetical increase in sales by the Notifying Parties' compounding businesses.
- (1406) As regards customer foreclosure, the demand which Solvay's and INEOS' S-PVC compound activities represents is around [5-10]*% and [5-10]*% compared to the total demand for S-PVC in, respectively, NWE and the EEA, whilst the overwhelming majority of the Commodity S-PVC demand stems from independent compound producers and in particular integrated S-PVC converters. Therefore the Transaction will not result in a reduction of the customer base for the competitors of the JV.
- (1407) More generally, and also taking into account that the Notifying Parties are already both active in Commodity S-PVC production and S-PVC compounding, it can be excluded that the Transaction will result in an increase of the Notifying Parties' ability and incentives to engage in foreclosure practices.
- (1408) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to S-PVC compounding. In any event, any possible effect would be removed by the remedies offered by the Notifying Parties, which address the competition concerns in the NWE market for S-PVC.

10.13. Chloromethanes and derivative products

- (1409) Solvay produces and sells chloromethanes from its plants located in Tavaux and Rosignano. INEOS produces and sells chloromethanes from its plant in Runcorn. Each of the Notifying Parties will contribute their activities relating to chloromethanes to the JV.

⁹⁰⁹ S-PVC compounding activities are downstream from the production of S-PVC and E-PVC, where the JV will be active. However the Transaction will not lead to competition concerns as result of cooperative effects. This is in particular because Solvay S.A. manages its compounding activities outside the JV with BASF in the chlorvinyls market, Solvay. This will not change post-Transaction, especially since it will exit the JV after 3 to 6 years from its creation.

10.13.1. Methylene Chloride

- (1410) The Transaction gives rise to horizontal overlaps between the Notifying Parties' activities contributed to the JV which result in an affected market. However no competition concerns arise.
- (1411) According to the information provided by the Notifying Parties, in 2012 their combined market shares amounted to [30-40]*% (INEOS: [20-30]*%; Solvay: [10-20]*%). Other strong players will remain in the market and will be able to exert a competitive pressure on the JV: these are Dow (holding a market share of [20-30]*%), AkzoNobel ([20-30]*%) and KEM ONE ([10-20]*%).
- (1412) In this context the Notifying Parties submitted that unilateral effects can be excluded since the market for methylene chloride is characterised by overcapacity and the presence of a significant number of resellers and distributors who exert competitive pressure on the producers. They also pointed out that customers typically multisource and can easily switch suppliers. The Commission considers in view of the results of the market investigation that non-coordinated effects would not arise as a result of the Transaction.
- (1413) As regards possible coordinated effects, the Notifying Parties submitted that no risk of coordination would arise post Transaction. This is because, first, the market structure resulting from the Transaction would be asymmetric, the JV becoming the largest player, followed by Dow and AkzoNobel each representing around a quarter of the sales on the market and KEM ONE being the smallest player. Second, given the differences in the production methods used by each manufacturer⁹¹⁰, their cost structure is asymmetric and implies different market strategies including pricing and volumes placed on the market. Third, pricing is not transparent and customers have the ability to disrupt coordination with their multi-sourcing and switching behaviours. The Commission considers, in view of the results of the market investigation, that no coordinated effect would arise as a result of the Transaction.
- (1414) Taking into account also that no concerns arose either during the market investigation, the Commission considers that the Transaction does not give rise to competition concerns the market for methylene chloride.

10.13.2. Chloroform

- (1415) The Transaction gives rise to horizontal overlaps between the Notifying Parties' activities contributed to the JV which result into an affected market. However no competition concerns arise.⁹¹¹
- (1416) According to the information provided by the Notifying Parties, in 2012 their combined market shares were above [10-20]*% in the EEA, where they jointly

⁹¹⁰ For example, Solvay manufactures methylene chloride using methane, whereas INEOS uses methanol.

⁹¹¹ Vertical relationships also exist between chloroform and Solvay's downstream activities in the production of hydrochlorofluorocarbon-22, which technically result into affected markets due to the market shares above [20-30]*% in chloroform held by the JV. However, for its production Solvay purchases only very limited quantities of chloroform on the merchant market when there are ad hoc shortfalls of chloroform from its in-house production facilities. Moreover, those purchases are already made from INEOS and will be simply internalised as a result of the creation of the JV. Therefore any risk of foreclosure can be excluded.

supplied [20-30]*% of the market with an increment below [0-5]*% brought by Solvay. The combined market share is therefore rather moderate, and only marginally above the [20-30]*% threshold.⁹¹² This is true regardless of whether the overall market for chloroform is considered or if narrower segments are considered.⁹¹³

- (1417) Other large players will be active in the market, that is to say Dow, AkzoNobel and KemOne with market shares of respectively [20-30]*%, [20-30]*% and [20-30]*%. Due to the marginal increment, the Transaction does not have any relevant impact on the structure and the competitive dynamics of the market, characterised, as confirmed by the market investigation, by the customers' ability to switch and react to the suppliers' behaviour and non-transparent pricing.
- (1418) Taking into account also that no concerns arose either through the market investigation, the Commission considers that the Transaction does not give rise to competition concerns in the market for chloroform.

10.13.3. Carbon tetrachloride (CTC), Perchloroethylene and HFC-365mfc

- (1419) In 2012 only INEOS was active on the supply of CTC in the merchant market.⁹¹⁴ Likewise, only Solvay is active in the production and supply of PCE and HFC-365mfc, or more generally hydrofluorocarbon polyurethane foam blowing agents. These businesses will be contributed to the JV. Therefore the Transaction does not give rise to horizontal overlaps with regard to those markets. However, vertical relationships exist between INEOS' activities in the CTC merchant market and PCE and HFC-365mfc activities carried out downstream by Solvay.
- (1420) Solvay is the only producer and seller of HFC-365mfc, together with Arkema [...]*), therefore the vertical relationship between CTC and HFC-365mfc results in an affected market.⁹¹⁵
- (1421) The Notifying Parties were not able to estimate the exact size of the merchant market for CTC and therefore to determine whether the Transaction will also result into an affected market downstream in PCE due to INEOS' market share in CTC above [20-30]*%.⁹¹⁶ Nonetheless according to the production and capacity data for 2012 provided by the Notifying Parties, which includes captive production, INEOS' market share would be above [20-30]*%.⁹¹⁷ Therefore, the Commission also

⁹¹² See Horizontal Merger Guidelines, Paragraph 18.

⁹¹³ More precisely, whilst the increment brought by Solvay under any possible market definition is not larger than [0-5]*%, the combined market shares amounts to [20-30]*% in the overall market for chloroform and in the segment for chloroform stabilised with 10-20ppm amylene (according to the Notifying Parties' estimates, accounting for [90-100]*% of the total chloroform sales in the EEA), whilst they would be around [20-30]*% in the segments for chloroform stabilised with ethanol or higher levels of amylene stabilisers. No overlap arises in the segment for chloroform stabilised with ethanol, where INEOS is not active.

⁹¹⁴ Solvay had sales in 2010 and 2011 but negligible.

⁹¹⁵ In a broader market for hydrofluorocarbon polyurethane foam blowing agents, Solvay's market share for 2012 would be well below [20-30]*%, equal to [5-10]*%.

⁹¹⁶ In 2012 Solvay's market share was [10-20]*%, being the second player after Dow which held [70-80]*% market share.

⁹¹⁷ A greater market share is therefore estimated for the merchant market.

considers that the vertical relationship between CTC and PCE would result into an affected market.

- (1422) However any risk of vertical foreclosure as result of the Transaction can be excluded.
- (1423) CTC is a highly regulated product⁹¹⁸ for which there is a very limited merchant market.⁹¹⁹ It can be sold only to be used as feedstock and it is mainly produced and used captively. According to the data provided by the Notifying Parties, in 2012 CTC was produced in the EEA by Solvay, INEOS, Akzo Nobel, Dow and KEM ONE. INEOS' only EEA customers in 2012 were Dow and Solvay.
- (1424) INEOS does not use CTC captively. Therefore, since CTC is an inevitable by-product of higher chloromethanes and it can only be destroyed through a costly process, INEOS has all the incentive to find an outlet for this material. Moreover, as regards the market for PCE, according to the data submitted by the Notifying Parties, Dow would have sufficient capacity to supply its own CTC needs if it chose to do so or it could alternatively source from Kem One or Akzo Nobel the [...]kt/y purchased from INEOS in 2011 and 2012. Solvay is the only producer of HFC-365mfc. Therefore any input foreclosure risk as a result of the Transaction can be excluded.
- (1425) Any customer foreclosure risk can also be eliminated, considering that Solvay already purchases almost half of its CTC needs fulfilled on the merchant market from INEOS and Dow would still remain in the market as customer for CTC.⁹²⁰
- (1426) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to CTC, PCE and HFC-365mfc.

10.14. Allyl chloride

- (1427) Only Solvay is active in the manufacture and sale of CAL at its production sites in Tavaux and Rheinberg. Those activities will be contributed to the JV. No horizontal overlap arises, but the Transaction gives rise to a vertical relationship between Solvay activities in CAL and INEOS' retained activities in relation to propylene, which results into an affected market.⁹²¹ That relationship results into an affected market, however no competition concern arises.
- (1428) According to the information provided by the Notifying Parties, Solvay's market share for CAL would be above [20-30]*% in the EEA ([40-50]*% in 2012). However, any risk of input foreclosure can be eliminated due to the very limited market shares of INEOS in the merchant market for propylene (less than [0-5]*% in both the EEA and WE) and the fact that the JV competitors in CAL will still have a number of other alternative suppliers of propylene, such as BPRP, Repsol, Dow, BASF, ENI, Total and Shell available to them.

⁹¹⁸ Production and marketing restrictions are imposed by Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer, OJ L286, 31.10.2009, p. 1.

⁹¹⁹ Tecnon Orbichem Chloromethanes 2010-2022 report states that “there is no traceable CTC trade [in Europe].”

⁹²⁰ PCE, the market where Dow is the leader, is the primary application of CTC. Only, limited quantities are used for the production of HFC-365mfc and HFC-245fa.

⁹²¹ No vertical relationship arises with regard to chlorine, since all the chlorine required for the production of CAL is produced by Solvay captively.

- (1429) Similarly, any risk of customer foreclosure can be eliminated since propylene is used for a variety of applications and CAL producers' purchases of propylene represent only a small share of the available sales base for propylene producers (even if only the polymer grade propylene, that is to say the one suitable for CAL production, is taken into account). More specifically, in 2012 Solvay only purchased [...]kt of propylene, below [0-5]*% the NWE merchant market demand for propylene.
- (1430) The Commission therefore considers that the Transaction does not give rise to competition concerns with regard to CAL.

11. COMMITMENTS

11.1. Analytical framework

11.1.1. Legal framework

- (1431) Where the Commission finds that a concentration raises competition concerns in that it could significantly impede effective competition, in particular as a result of the creation or strengthening of a dominant position, the parties may seek to modify the concentration in order to resolve the competition concerns and thereby gain clearance of their merger.⁹²²
- (1432) Under Regulation (EC) No 139/2004 Regulation (EC) No 139/2004, it is the responsibility of the Commission to show that a concentration would significantly impede effective competition. The Commission then communicates its competition concerns to the parties to allow them to formulate appropriate and corresponding remedies proposals.⁹²³ It is then for the parties to the concentration to submit commitments.⁹²⁴
- (1433) The Commission only has power to accept commitments that are deemed capable of rendering the concentration compatible with the internal market so that they will prevent a significant impediment of effective competition in all relevant markets where competition concerns were identified.⁹²⁵ The commitments have to eliminate the competition concerns entirely⁹²⁶ and have to be comprehensive and effective from all points of view.⁹²⁷
- (1434) In assessing whether the proposed commitments will likely eliminate the competition concerns identified, the Commission considers all relevant factors including inter alia the type, scale and scope of the proposed commitments, judged by reference to the structure and particular characteristics of the market in which the competition concerns arise, including the position of the parties and other participants on the market.⁹²⁸

⁹²² Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (the "Remedies Notice"), OJ 2008/C 267/01, Paragraph 5.

⁹²³ See Case T-209/01 *Honeywell International, Inc. v. Commission* [2005] II-5527, Paragraph 99.

⁹²⁴ Remedies Notice, Paragraph 6.

⁹²⁵ Remedies Notice, Paragraph 9.

⁹²⁶ See also Case C-202/06 P *Cementbouw Handel & Industrie v Commission* [2007] ECR 2007 I-12129, Paragraph 54.

⁹²⁷ Remedies Notice, Paragraphs 9 and 61.

⁹²⁸ Remedies Notice, Paragraph 12.

- (1435) In order for the commitments to comply with those principles, they must be capable of being implemented effectively within a short period of time.⁹²⁹ Where, however, the parties submit remedies proposals that are so extensive and complex that it is not possible for the Commission to determine with the requisite degree of certainty, at the time of its decision, that they will be fully implemented and that they are likely to maintain effective competition in the market, an authorisation decision cannot be granted.⁹³⁰
- (1436) Concerning the form of acceptable commitments, Regulation (EC) No 139/2004 gives discretion to the Commission as long as the commitments meet the requisite standard.⁹³¹ Structural commitments will meet the conditions set out above only in so far as the Commission is able to conclude with the requisite degree of certainty that it will be possible to implement them and that it will be likely that the new commercial structures resulting from them will be sufficiently workable and lasting to ensure that the significant impediment to effective competition will not materialise.⁹³²
- (1437) Divestiture commitments are generally the best way to eliminate competition concerns resulting from horizontal overlaps, although other structural commitments, such as access remedies, may be suitable to resolve concerns if those remedies are equivalent to divestitures in their effects.⁹³³

11.1.2. *Commitments capable of replicating Solvay post-Transaction*

- (1438) As discussed in Section 9.1., the Commission has concluded that prior to the Transaction INEOS exercised some degree of market power in the NWE/NWE+ market for commodity S-PVC.
- (1439) Moreover, as also explained in Section 9.1., the Commission has found that the Transaction would remove a significant competitive constraint and the most direct competitor of INEOS, Solvay.
- (1440) The Commission has therefore concluded that the Transaction is likely to consolidate the degree of market power held by INEOS and lead to a significant impediment to effective competition through the creation of a dominant player.
- (1441) In those circumstances, in order to eliminate the competition concerns entirely, a remedy package needs to be capable of replicating the position of the most direct competitor in the relevant market, whose competitive constraint would be eliminated as a result of the merger.
- (1442) Under this specific set of circumstances, a suitable remedy package would have to replicate Solvay's competitive position in the NWE/NWE+ market for commodity S-PVC.⁹³⁴ Such a position should be measured, among other things, with regard to the scope of the business to be divested in terms of capacity, but also with regard to the

⁹²⁹ Remedies Notice, Paragraph 9.

⁹³⁰ Remedies Notice, Paragraphs 13, 14 and 61 *et seq.*

⁹³¹ Case T-177/04 *easyJet v Commission* [2006] ECR II-1913, Paragraph 197.

⁹³² Remedies Notice, Paragraph 10.

⁹³³ Remedies Notice, Paragraph 19.

⁹³⁴ As indicated at Footnote XXX, remedies offered by the Notifying Parties have been assessed against both the data provided in the Annexes to the Form CO and the most recent submission, that is to say [...] * kt

overall competitiveness and viability of the plants offered, which are essentially determined by its geographic location in view of logistics and transport costs, their degree of vertical integration and access to key inputs.

- (1443) The importance of logistics and transport costs have been already discussed in detail in Section 7.2 above. In the following, the Commission will focus on the degree of vertical integration and access to key inputs.
- (1444) In that regard, the Commission has conducted an analysis of the three main business models which can be envisaged in the EEA industry, already indicated in Section 6.3., that is to say fully vertically integrated players (Model 1), partially vertically integrated players (Model 2) and stand-alone PVC plants (Model 3). The below summarises the Commission analysis of each of these models and draws a number of conclusions as to their suitability in the context of remedy discussions.

11.1.2.1. Full reliance on third party VCM constitutes a problematic business model

- (1445) Throughout the proceedings, the Notifying Parties fiercely argued that dependence on third party VCM can and does constitute a successful business model. The Notifying Parties pointed to INEOS' Schkopau as an example, which relies on Dow for a key input, that is to say VCM. More precisely, Schkopau is not vertically integrated and receives VCM from Dow through an on-site pipeline at a price based on a formula. [...]*.⁹³⁵
- (1446) In their Response to the Decision opening the proceedings, the Notifying Parties state: "*The Parties agree that non-integration into VCM can pose some difficulties for S-PVC producers in the EEA in practice as VCM is generally more difficult to source and transport than other raw materials.*"⁹³⁶ In any event, the following can be noted.
- (1447) As regards the VCM supply contract at Schkopau, in the 2012 Kerling PLC Annual Report to Bondholders INEOS describes its dependency on Dow as [...]*.⁹³⁷
- "[...]*. "⁹³⁸
- (1448) In the past, INEOS' reliance on third party VCM from Dow at Schkopau gave rise to [...]*.⁹³⁹ In another internal document, INEOS states that a "[...]*. "⁹⁴⁰ While INEOS argues that [...]* was essentially due to the market situation rather than the contract and the pricing formula, the example further demonstrates the fragility of this business model in a cyclical industry.⁹⁴¹

⁹³⁵ These are the general terms of the VCM contract between INEOS and Dow. A contract signed [...]*. Schkopau is currently supplied by Dow under a service agreement with expiry date on [...]*.

⁹³⁶ Response to the Decision opening the proceedings, Paragraph 6.7.

⁹³⁷ Kerling PLC is the INEOS' subsidiary manufacturing PVC and CS in Europe.

⁹³⁸ Kerling PLC 2012 Annual Report to Bondholders, Page 2.

⁹³⁹ INEOS' internal document, "INEOS ChlorVinyls Strategy Day" of 4 September 2012, Page 62.

⁹⁴⁰ INEOS' internal document, "INEOS ChlorVinyls Strategy Day" of 4 September 2012, Page 50 .

⁹⁴¹ INEOS submitted that the Dow contract was renegotiated in [...]* on much more favourable terms. INEOS was, however, likely able to credibly threaten Dow of closing down the plant, in order to negotiate a better position. First, INEOS already operates multiple S-PVC plants in a market which it itself describes as being in overcapacity. Second, it has already closed down two plants in the last 5 years. Third, at the time of the negotiations with Dow the plan to set up a joint venture with Solvay was

- (1449) Shin-Etsu's experience also casts doubts on VCM dependency on other players. Shin-Etsu explains that up to 2012 it had a supply contract with INEOS, but subsequently this could not be renewed on economically acceptable terms.⁹⁴² Shin-Etsu currently buys small volumes of VCM on a spot basis for its Portuguese plant in Cires; however, it points out that "*In the past, Cires imported VCM regularly, also from America, but currently [this is commercially not feasible].*"⁹⁴³
- (1450) [...] purchases VCM from [...] for its E-PVC plant in [...].⁹⁴⁴ However, [...].⁹⁴⁵
- (1451) Moreover, as acknowledged by the Notifying Parties in the Form CO, there is no fully-fledged VCM market in the EEA.⁹⁴⁶ This is also pointed out by Vinnolit, which explains that "*In Europe, a typical free market for VCM does not exist. This is due to the fact, that more than 90% of the PVC-capacities are upstream integrated into their own VCM production.*"⁹⁴⁷
- (1452) As regards imports from other areas, VCM transport costs seem to constitute a major hurdle. IHS, a global information company that provides, among other things, monthly and annual indexes, reports and news related to the vinyl industry, talks about "*prohibitive freight rates.*"⁹⁴⁸ This is not surprising, as VCM is a chemical product that is hazardous and difficult to transport, as acknowledged by the Notifying Parties.⁹⁴⁹
- (1453) North America and the Middle East are the main sources of VCM exports, although some growth in Northeast Asian volumes is also forecast. Again, the main recipient is not the EEA, but Latin America (for example Colombia), the Indian Subcontinent (for example India) and Southeast Asia (including Vietnam, Indonesia and Australia). In the longer term, the amount of worldwide VCM trade is expected to remain consistent.⁹⁵⁰
- (1454) The Commission also held numerous conference calls with - and addressed several RFIs to - the Notifying Parties' competitors to further investigate the subject matter. Kem One and Coem (formerly, Vinyls Italia) probably constitute the most illustrative examples as regards the risks associated with vertical integration based on an external supply of key raw materials.

made public, making a threat of a closure even more credible given the expected scale of the combined JV's plants.

⁹⁴² Non-confidential version of the agreed minutes of a conference call with Shin-Etsu of 2 October 2013 ID3666.

⁹⁴³ Non-confidential version of the agreed minutes of a conference call with Shin-Etsu of 2 October 2013 ID3666.

⁹⁴⁴ The Notifying Parties submission of 25 September 2013 titled "Vertical Integration in the S-PVC Industry in the EEA."

⁹⁴⁵ Non-confidential version of the agreed minutes of a conference call with [...] of 19 November 2013 ID4859.

⁹⁴⁶ Form CO, Section 6, Part K, "VCM", Paragraph 6.4(i) ("*There is no significant merchant market for VCM in the EEA – the majority of PVC producers are able to meet their entire VCM requirements through captive production (or long-term structural contracts for the supply of VCM).*") See, for instance, IHS Market Report of 31 January 2013, Page 17 ("*There has been no apparent merchant VCM business, thus extending a well-established trend.*")

⁹⁴⁷ Reply of Vinnolit to question 48 - Phase I Questionnaire competitors (S-PVC) ID2533.

⁹⁴⁸ IHS Market Report of 30 April 2013, Page 20.

⁹⁴⁹ Notifying Parties' Response to the RFI of 16 May 2013, Paragraph 24.1.

⁹⁵⁰ 2014 IHS World Analysis - Vinyls, Pages 26-27.

(1455) On 19 July 2013, the Commission contacted Kem One in order to better understand whether, at least some of its financial difficulties, derive from the dis-integration of what was in the past a fully vertically integrated player, Total first and then Arkema. With respect to VCM, Kem One explained that:

*"... VCM becomes the issue. It is very difficult to transport VCM because of its toxicity. The VCM market is controlled by a few (mainly two) companies. Logistically, the market was never built for free floating VCM ... [VCM] raises important logistic issues (pipelines, storage, port facilities) and it is very expensive ... Kem One's weakness is that its plants that need VCM are inland. In the U.S. VCM is available at lower prices, but it is sold in Europe at market prices ..."*⁹⁵¹

(1456) Kem One takes the view that *"In practice, there is no merchant market for VCM in Europe."*⁹⁵² It adds that it even tried to contact INEOS and Solvay to obtain additional VCM, but these negotiations did not lead to an agreement. As regards the impact of the shale gas revolution, Kem One explains that selling VCM at a cheaper price in Europe makes little sense for North American players, who instead will endeavour to keep the benefits of this revolution in their domestic markets.⁹⁵³

(1457) On 24 September 2013, the Commission contacted Coem, a company that in 2011 took over the activities of Vinyls Italia, a former PVC supplier. According to the original restructuring plan, Coem's business was meant to develop in two consecutive steps: (i) at the beginning, Coem was supposed to operate a stand-alone PVC business based on a VCM supply contract with Arkema; and (ii) later, Arkema would have acquired a majority shareholding in Coem. In other words, this restructuring plan was based on the idea that vertical integration would have been achieved through Arkema's participation in the project.⁹⁵⁴

(1458) That restructuring plan did not succeed. Following the acquisition by the Klesch Group of part of Arkema's activities, the newly born entity, that is Kem One, decided not to pursue the restructuring plan. Due to this alleged breach of contract, Coem decided to search for an alternative source of VCM. However, the search has proven extremely difficult and even Mitsui, one of the biggest international players in the segment, could not meet Coem's requirements:

"... the very first criterion to find a suitable VCM supplier is its reliability ... This is crucial because VCM is a far too important input for any stand-alone PVC plant. For example, a sudden force majeure event can determine the closure of a PVC plant. It is indeed a very risky dependence ..."

With respect to Mitsui, this world player was willing to supply NewCo, but unfortunately it had no suitable location in Europe. NewCo would have had to

⁹⁵¹ Non-confidential version of the agreed minutes of a conference call with Mr Gary Klesch - Kem One of 19 July 2013 ID3645.

⁹⁵² Non-confidential version of the agreed minutes of a conference call with Mr Gary Klesch - Kem One of 19 July 2013 ID3645.

⁹⁵³ Non-confidential version of the agreed minutes of a conference call with Mr Gary Klesch - Kem One of 19 July 2013 ID3645.

⁹⁵⁴ Non-confidential version of the agreed minutes of a conference call with Coem of 24 September 2013 ID5212.

store much more VCM than it could have. ... an expansion of storage capabilities was not possible, because it implied heavy investments and also the granting of additional authorizations from the relevant Italian authorities."⁹⁵⁵

(1459) In conclusion, Coem's experience shows the extreme fragility of a stand-alone PVC player. As pointed out by Coem, i) relying on an input that makes up roughly 80% of S-PVC production costs is risky; ii) VCM suppliers will want to make their own margin when selling this input to stand-alone PVC plants; and iii) the VCM market in Europe is almost non-existent.

(1460) On 10 July 2013, the Commission contacted Mexichem, an important international player which has been mentioned on several occasions by the Notifying Parties as proof that vertical integration is not at all needed to run a profitable PVC business.

(1461) First, it should be emphasised that Mexichem's business model developed in a different historical and economic setting, which is not necessarily applicable to the EEA market. Secondly, when asked about the importance of vertical integration, Mexichem indicated that dependence on a third party to cover its VCM needs is a structural weakness. Mexichem is currently involved in several projects aimed at addressing such weakness:

*"Mexichem is currently not a fully integrated player at the moment. It covers its VCM needs externally. However, Mexichem plans to address this structural issue by becoming VCM self-sufficient and is involved in different projects to this end. ... therefore, vertical integration back to VCM constitutes a key business driver for Mexichem."*⁹⁵⁶

*"... vertical integration up to VCM and possibly even more upstream is a significant competitive advantage. Recently, MexiChem has been very active in strengthening its vertical integration. ... only 100 000 tonnes of VCM will have to be sourced from the merchant market. This means that MexiChem will become VCM independent and, at the same time, it will have a major footprint at the level of ethylene."*⁹⁵⁷

(1462) The Commission therefore considers that full reliance on third party VCM is a very problematic business model featuring a wide array of difficulties (from logistics to security of supply), which call into question the feasibility and profitability of this strategy.

11.1.2.2. Full reliance on third party EDC is an untested business model in the EEA that entails risks

(1463) The Notifying Parties strongly disagree with the Commission's view in the Decision opening the proceedings according to which EDC dependence on third parties is not viable in practice. They essentially reiterate that EDC is globally traded and that

⁹⁵⁵ Non-confidential version of the agreed minutes of a conference call with Coem of 24 September 2013 ID5212.

⁹⁵⁶ Non-confidential version of the agreed minutes of a conference call with Mexichem of 10 July 2013 ID5206.

⁹⁵⁷ Non-confidential version of the agreed minutes of a conference call with Mexichem of 27 November 2013 ID5292.

*"there is no reason why such a market could not quickly develop in the case of increased demand."*⁹⁵⁸

- (1464) This position is consistent with the Notifying Parties' acknowledgment in the Form CO that there is no fully-fledged EDC market in the EEA.⁹⁵⁹ In essence, the Notifying Parties' argument suggests that the Commission should be satisfied that *"there is no reason"* to believe that an EDC market will not develop at some point. However, they have themselves cast doubts on the economic feasibility of EDC imports under the current market circumstances: *"... prevailing prices for EDC suggest a limited opportunity for S-PVC producers in the EEA to import EDC from the United States at a material cost advantage."*⁹⁶⁰ The Commission agrees that EDC is more easily transportable and traded worldwide than VCM. EDC does not require dedicated transport means and can be transported with other chemical products. The Commission is also aware that the Notifying Parties' explored the worldwide EDC market with a view to avoiding the conversion of mercury-based chlorine cellrooms.
- (1465) However, external purchases of EDC still require unloading facilities, as well as storage capacities, which may not be available to all players. In addition, the Commission understands that no supply contract enshrining full EDC reliance on a third party has been concluded to date. Quite to the contrary, S-PVC suppliers in the EEA only rely on external EDC to top-up their internal production.⁹⁶¹ Finally, no more than 3 or 4 small shipments per year are imported from the United States⁹⁶² and, as noted by Shin-Etsu,⁹⁶³ the EDC market in Europe is an *ad hoc* market, as only Dow and Evonic in Germany are producing excess EDC regularly.
- (1466) Other S-PVC suppliers in the EEA have chosen to convert their mercury-based cellrooms - despite the high cost involved - rather than relying on third party EDC.⁹⁶⁴ That is the case for Anwil and Fortischem.⁹⁶⁵ In particular, IHS market reports explain that Anwil *"has indicated that is willing to invest in the conversion from mercury to membrane technology at Spolana. [...] The option of bringing in EDC/VCM has also been considered, but the logistical hurdles appear insurmountable."*⁹⁶⁶

⁹⁵⁸ Response to the Decision opening the proceedings, Paragraph 6.9(i).

⁹⁵⁹ Form CO, Section 6, Part M, "Minor Overlap Markets", Paragraph 6.78 (*"... there is currently no significant merchant market for EDC in the EEA, as EDC is rarely traded between producers in the EEA for the purposes of producing VCM/PVC and is usually only sold or purchased for logistical balance reasons or to address unexpected shortfalls in capacity..."*).

⁹⁶⁰ Notifying Parties's Reply to the RFI of 5 June 2013, Paragraph 30.8.

⁹⁶¹ The volumes purchased by Vestolit and Vinnolit are insignificant if compared with the EDC average annual capacities of the respective producers. See IHS 2013 World Analysis - Vinyls, pages 490-495.

⁹⁶² Reply of Mitsui to question 8 - Phase I Questionnaire to competitors (EDC and VCM) ID2068

⁹⁶³ Non-confidential version of Shin-Etsu's reply to the Commission's RFI of 4 December 2013 ID5342.

⁹⁶⁴ The costs of dismantling of a mercury unit, treatment/elimination of the related waste, restoration and clean-up of the site should be included. The payback period for the investment cost to replace an existing mercury plant with membrane technology is of around 14.7 years and the investment cost for an annual capacity of 100 000 tonnes chlorine is calculated at EUR 50 million according to the paper "Conversion from Mercury to Alternative Technology in the Chlor-Alkali Industry" by UNEP Global Mercury Partnership Chlor-Alkali Area (June 2012).

⁹⁶⁵ Reply of Fortischem to question 56 - Phase I Questionnaire to competitors S-PVC ID4710.

⁹⁶⁶ IHS Market Report of 31 July 2013, Page 21.

- (1467) Although EDC exports from the United States are indeed expected to increase, the EEA will not be the main recipient of these exports. North America and the Middle East are the main exporters and will remain so over the longer term. The largest importer is, and will remain, Northeast Asia (principally China and to a lesser extent Japan).⁹⁶⁷ In any event, importing EDC from the United States requires deep sea terminals. Therefore, harbours with relatively limited jetty capabilities such as Wilhelmshaven cannot import EDC from oversea.
- (1468) The Commission also held numerous conference calls with - and addressed several RFIs to - the Notifying Parties' competitors to further investigate the subject matter. The below provides a detailed account of the most significant elements.
- (1469) According to Vestolit,⁹⁶⁸ third party EDC is more expensive than in-house EDC. There are high logistical, environmental and other costs linked to the delivery of EDC from third parties. Even if logistics were easier due to a particularly favourable location (for example, next to a harbour), this would still not solve the problems relating to the installation of the costly unloading and storage facilities, which are unnecessary when an S-PVC supplier is vertically integrated. In conclusion, Vestolit made clear that it would never source its entire EDC needs from third parties.
- (1470) Kem One believes that full reliance on third party EDC is unrealistic. Conversely, a combined system could potentially work, that is to say 30-35% of EDC needs coming from a third party and the rest covered internally.⁹⁶⁹
- (1471) Ercros currently tops up its internal production of EDC with imports and is more confident about this business model in the future because of (i) the privileged geographic location of its chemical site at the port of Tarragona and (ii) the fact that, for historical reasons, it is equipped with all the required infrastructure to import, unload and store significant quantities of EDC.⁹⁷⁰
- (1472) Vinnolit considers that full reliance on third party EDC requires a careful assessment of the contractual framework and associated costs, which are of paramount importance. Vinnolit, however, emphasises that there are risks associated with such a strategy. In particular, full reliance on third party EDC translates into total lack of control of a key production cost in the value chain.⁹⁷¹
- (1473) As regards Anwil, it relies on third party EDC (and VCM) only in case of disruptions to its own EDC/VCM chain (such as, *force majeure* events). Anwil explains that the most important aspect when considering purchasing EDC is logistics. Anwil is positive about the future development of the EDC market in the EEA and takes the view that such a market may indeed develop if demand would increase.⁹⁷²

⁹⁶⁷ 2014 IHS World Analysis - Vinyls, Page 27.

⁹⁶⁸ Non-confidential version of agreed minutes of a conference call with Vestolit of 21 November 2013 ID5215; and non-confidential version of the reply to the Commission's RFI of 29 November 2013 ID4485.

⁹⁶⁹ Non-confidential version of Kem One's reply to the Commission's RFI of 4 December 2013 ID4490

⁹⁷⁰ Non-confidential version of Ercros' reply to the Commission's RFI of 4 December 2013 ID4484.

⁹⁷¹ Non-confidential version of the reply to the Commission's RFI of 26 November 2013 ID4862

⁹⁷² Non-confidential version of agreed minutes of a conference call with Anwil of 20 November 2013 ID5218 and non-confidential version of the reply to the Commission's RFI of 29 November 2013 ID4744

- (1474) Shin-Etsu believes that it is possible to be fully reliant on third party EDC and be competitive on the market, depending on whether there is oxychlorination available to convert the return hydrochloric acid ("HCl") stream generated by EDC cracking.⁹⁷³ However, Shin-Etsu stresses that the results of this business model would strongly depend on EDC price, while transport costs and logistics may indeed be the biggest hurdle to overcome because of the large volumes involved.⁹⁷⁴
- (1475) Fortischem agrees that an EDC market could develop in the EEA if there was sufficient demand.⁹⁷⁵ However, it emphasises that full reliance on third party EDC could be problematic and risky. For instance, EDC could become scarce in case of a booming PVC market.
- (1476) Therefore, the Commission considers that some S-PVC suppliers occasionally purchase EDC to top up their needs or to address internal imbalances in case of outages for instance. On balance, most S-PVC suppliers are sceptical about full reliance on third party EDC, even if a fully-fledged EDC market were to develop.
- (1477) Therefore, full reliance on third parties for EDC is still an untested business model in the EEA. The Notifying Parties have produced evidence demonstrating that [...]*.⁹⁷⁶ However, despite [...]*, the very setting up of this JV confirms that Model 1 (full vertical integration) is still the safest business model. In fact, INEOS has committed to continue its commodity S-PVC operations via the acquisition of fully integrated vertical chains from Solvay, whereas Solvay will eventually exit the JV and, consequently, that market.
- 11.1.2.3. Notifying Parties' internal documents and independent market reports show the utmost importance of vertical integration
- (1478) In their internal documents, the Notifying Parties put [...]* emphasis on the importance of vertical integration and its effect on a company's competitiveness and profitability.
- (1479) This is the view Solvay submits in an investor presentation of April 2012, where it clearly shows that "*Fully integrated value chains, Chlorine, VCM and PVC ...Partnership with ethylene producers*" are a "key regional competitive advantage."⁹⁷⁷

⁹⁷³ Oxychlorination is to say a reaction between ethylene, HCl and oxygen to produce EDC.

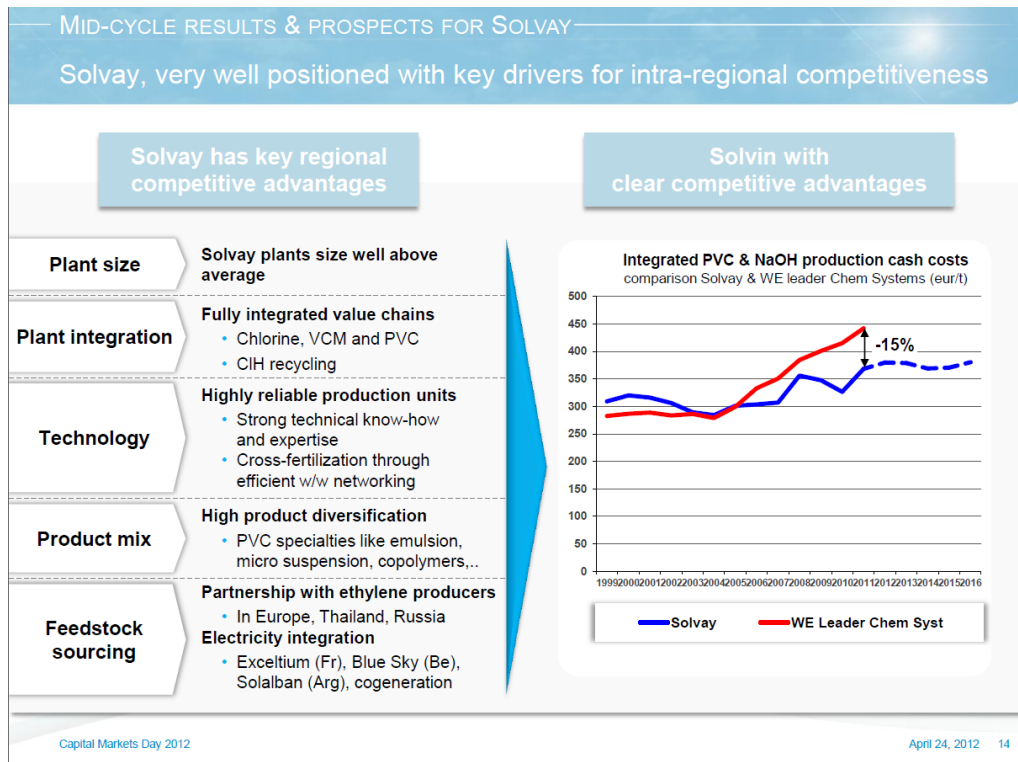
⁹⁷⁴ Non-confidential version of Shin-Etsu's reply to the Commission's RFI of 4 December 2013 ID5342

⁹⁷⁵ Non-confidential version of Fortischem's reply to the Commission's RFI of 4 December 2013 ID5093.

⁹⁷⁶ Notifying Parties' submission of 25 September 2013 titled "Vertical Integration in the S-PVC Industry in the EEA."

⁹⁷⁷ Solvay's investor presentation, [...]*.

Figure 28: Key Drivers for Intra-regional Competitiveness



Source: Solvay

(1480) INEOS' internal documents also show [...]*

Figure 29: Ideal PVC Supplier according to INEOS⁹⁷⁸

[...]*

Source: INEOS

- (1481) In their submission of 25 September 2013 entitled "Vertical Integration in the S-PVC Industry in the EEA", the Notifying Parties question the importance of that document. They explain that it could be wrongly interpreted to mean that INEOS believes that it is ideal for a PVC supplier to own all the production assets from chlorine to S-PVC. They argue that, in the context of that document, vertical integration would mean "on-site integration" regardless of the ownership of the upstream assets and would essentially reflect [...]*. The Commission agrees that, in principle, on-site vertical integration is the most efficient set-up. However, it is difficult to decouple this finding from the concept of ownership of the different on-site components. According to INEOS itself, [...]*
- (1482) Also Barclays Capital also highlights the importance of Kerling's vertical integration: "[...]*".⁹⁸⁰ In its initial rating outlook for Kerling, JP Morgan also makes the following comment about cost-advantage/vertical integration:

⁹⁷⁸ INEOS' internal document, "PVC Competitors Summary 2012", updated in January 2012, INEOS_SET4_14_11_RFL_00001038, Page 1.,

⁹⁷⁹ "INEOS ChlorVinyls Strategy Day" of 4 September 2012, Page 62. In the Form RM of 12 October 2013 the Notifying Parties also [...]*

⁹⁸⁰ INEOS' internal document, "Coventry from Production.doc" of 5 January 2010, Page 1.

"[...]":⁹⁸¹

(1483) In the Kerling PLC 2012 Annual Report to Bondholders, INEOS emphasises [...]:

"[...]":⁹⁸² (emphasis added)

(1484) In the same document INEOS refers to IHS market reports, according to which
"[...]":⁹⁸³

(1485) INEOS' internal documents also show that [...],⁹⁸⁴ "[...]":⁹⁸⁵

(1486) Similarly, the winding-up of Vinyls Italia was caused [...]:⁹⁸⁶

(1487) Finally, when referring to Tessenderlo's motivation for selling the business, INEOS remarks: "[...]":⁹⁸⁷

(1488) It is also stated in the 2014 IHS World Analysis - Vinyls that: *"Today, integration into VCM, EDC, and chlorine feedstocks has become a necessity in most global regions with only few exceptions that benefit from geographic isolation or protection through government subsidies and fixed price structures."*⁹⁸⁸ Furthermore, the same analysis remarks that: *"For EDC and VCM, the trend toward fully back-integrated units is ongoing ..."*⁹⁸⁹

11.1.2.4. Conclusion

(1489) In sum, vertical integration up to chlorine (including EDC/VCM) and favourable access to ethylene is not only a common business model in the EEA, but also an important competitive driver. This is because vertical integration has an impact on costs at all levels and may entail significant competitive advantages.

(1490) The EEA landscape can be summarized as follows:

- with the exception of INEOS, Anwil and Solvay, no EEA S-PVC producer has a foothold in ethylene;
- all S-PVC suppliers have in-house chlorine production, except for Shin-Etsu
- all S-PVC suppliers have in-house EDC production;
- all S-PVC suppliers have in-house VCM production, except for INEOS at Schkopau;
- in general, S-PVC suppliers only occasionally purchase EDC/ VCM to top up their needs or to address internal imbalances (for instance, in case of outages);

⁹⁸¹ INEOS' internal document, "Kerling 170111.pdf" of 24 January 2011, Page 4.

⁹⁸² 2012 Kerling PLC Annual Report to Bondholders, Page 24.

⁹⁸³ 2012 Kerling PLC Annual Report to Bondholders, Page 24.

⁹⁸⁴ INEOS' internal document, "Q&A Investor Day input.doc", of 12 March 2009, Page 1.

⁹⁸⁵ INEOS' internal document, "Investor Day presn.ppt.doc", of 30 January 2009, Page 8.

⁹⁸⁶ INEOS' internal document, "080529 Key Messages and QA eng-Scenario_2(2).doc", of 30 June 2008, Page 3; and INEOS' internal document, "Snia presentation English translation.ppt" of 25 April 2013, Page 12.

⁹⁸⁷ INEOS' internal document, "Draft internal q&a.doc", of 31.05.2011, page 3.

⁹⁸⁸ 2014 IHS World Analysis - Vinyls, Page 23.

⁹⁸⁹ 2014 IHS World Analysis - Vinyls, Page 26.

- most S-PVC suppliers are sceptical about full reliance on third party EDC, even if a fully-fledged EDC market were to develop;
- S-PVC suppliers who rely on third parties for their purchases of VCM have faced significant difficulties, which cast doubts on the feasibility and profitability of this strategy;
- all S-PVC suppliers agree that the degree of internal vertical integration is key for the competitiveness of an S-PVC player. That view is also shared by Mexichem, one of the main examples - if not the main example - used by the Notifying Parties to corroborate their claims.

- (1491) In their Response to the SO, the Notifying Parties contested those findings, arguing that (i) the Commission has failed to take into account that S-PVC suppliers can operate successfully without owning the full chain of production based on 'virtual integration', that is to say long term stable supply contracts, with margin sharing arrangements through the full production chain up to chlorine and stable logistical arrangements, which would effectively replicate the conditions of ownership; (ii) there are examples of very successful S-PVC suppliers in the EEA operating without owning the upstream chlorine assets (such as Shin-Etsu); (iii) the Commission did not offer a cogent body of evidence that ownership of the chlorine assets is necessary; and (iv) the Commission misinterpreted the internal documents and did not put enough weight on the fact that [...]*
- (1492) The Notifying Parties also believe that the Commission's market investigation did not clearly distinguish between, on the one hand, a non-integrated business model based on 'virtual integration' with a reliable supplier bound by a relationship of mutual dependence - which the Notifying Parties advocate - and on the other a non-integrated model based on reliance on the spot market for raw materials, which the Notifying Parties are not advocating.
- (1493) What the Notifying Parties fail to acknowledge is the fact that "virtual vertical integration" is the exception as a business model and not the general rule in the EEA. None of the existing supply contracts between Shin-Etsu and Akzo or INEOS and Dow is concluded between competitors operating on S-PVC market, as neither Akzo nor Dow are S-PVC suppliers. Establishing the right margin sharing formula is complicated, takes a profound knowledge of the industry and, even when an arrangement has been in place for a long time, there is no guarantee that it will keep yielding the right results (for example, [...])⁹⁹⁰.
- (1494) Based on the Notifying Parties own data,⁹⁹¹ a variable cost comparison between [...]*.
- (1495) Moreover, on the Notifying Parties' own measure of variable costs, [...]*. See Section 11.3.2.1 for a more detailed economic assessment of the implication of the "virtual vertical integration" for the INEOS S-PVC plant in Schkopau.
- (1496) When trying to replicate Solvay's competitive constraint, the Commission took under consideration the supplying arrangements of this company which is for most cases

⁹⁹⁰ See Recital 84 of the Decision.

⁹⁹¹ Submitted on 3 March 2014, as a reply to the Commission's RFI of 28 February 2014.

vertically integrated *on-site* and generally does not depend on third parties for the input of the key raw materials, except for ethylene.

- (1497) The Notifying Parties competitors' views regarding the deficiencies of a non-vertical integrated ownership business model and dependency on a third party for supplying the main inputs, still stand no matter they consider virtual vertical integration as seen by the Notifying Parties or the spot market.⁹⁹²
- (1498) As previously mentioned, when highlighting the importance of vertical integration and the current trends, IHS does not include virtual vertical integration as a viable alternative.⁹⁹³
- (1499) In the context of the Phase I market test for remedies, the Commission addressed the issue of virtual vertical integration, as the Schkopau plant was part of the package. The Commission asked questions related to the competitiveness of the Schkopau's set-up⁹⁹⁴, but very few participants could express an opinion. Mexichem explained that: "*A vertically integrated SPVC plant does not include third parties' or intermediaries, which will add costs and uncontrolled inefficiencies due to the inability to use synergies.*"⁹⁹⁵
- (1500) In general, market participants, including competitors, were not able to offer an insight on the efficiency of a set-up including third parties.
- (1501) INEOS itself, when considering [...]*
- (1502) In the light of the above, the Commission concludes that actual vertical integration, as opposed to full EDC/VCM reliance on third parties or "virtual" vertical integration, constitutes a very important precondition to become a competitive force in the market.

11.1.3. Conclusion

- (1503) The main criteria for the assessment of the commitments in the present case therefore are:
- (1) Scope of the remedies: the remedies have to remove the overlap between the parties and create a competitor equivalent to Solvay in terms of capacity;
 - (2) Geographic location of the plants: in view of transport costs and logistics (see Section 7.2), the divested plants shall be located at the heart of NWE to replicate Solvay's advantageous location in this region;
 - (3) Vertical integration: the divested plants shall enjoy actual vertical integration up to chlorine; and
 - (4) Access to key inputs: the divested plants shall be provided with good access to key inputs, in particular as regards ethylene.
- (1504) Those criteria have been communicated to the Notifying Parties both in Phase I and Phase II, respectively at the SoP meeting of 10 October 2013 and of 17 February 2014.

⁹⁹² See Recitals 79, 97, 102, 106- 108 of the Decision.

⁹⁹³ See Recital 123 of the Decision.

⁹⁹⁴ See question 14 and seq. of the Market test of remedies

⁹⁹⁵ Reply of Mexichem to question 15 - Phase I Market test of remedies ID3382

(1505) The Commission analysed the proposed commitments in this case against this background.

11.2. Phase I remedies

(1506) In order to remove the serious doubts arising from the Transaction, in Phase I, the Notifying Parties submitted two sets of Commitments under Article 6(2) of Regulation (EC) No 139/2004 on 14 October 2013. One set of Commitments was meant to address the Commission's serious doubts in the market for commodity S-PVC, whilst the other set related to the market for sodium hypochlorite market.

11.2.1. The Phase I Commitments for the commodity S-PVC market

(1507) The set of Commitments for commodity S-PVC consisted of the divestment to a suitable purchaser of INEOS' stand-alone S-PVC plant located in Schkopau (Germany) together with a VCM supply contract already agreed upon with Dow on-site and INEOS' vertically integrated PVC chain comprising chlorine and EDC assets at Runcorn (United Kingdom) and VCM/S-PVC operations in Wilhelmshaven (Germany) (the "Wilhelmshaven / Runcorn Phase I Package"). That package was supplemented on the same day with a second package, which the Notifying Parties qualified as "*entirely separate and not contingent on the first divestment package*" and was identical to the first one, except for the inclusion of two alternative structures for the membrane cellroom at Runcorn.

(1508) In that regard, the Commission decided only to market test the first remedy package, because at that point in the proceedings that package represented the solution with the highest chance of success. Conversely, the other alternative structures for the membrane cellroom at Runcorn required an in-depth analysis, incompatible with a clear-cut Phase I standard.⁹⁹⁶

(1509) In Phase I, commitments can only be accepted where the competition problem is readily identifiable and can easily be remedied. The competition problem therefore needs to be so straightforward and the remedies so clear-cut that it is not necessary to enter into an in-depth investigation and that the commitments are sufficient to clearly rule out serious doubts within the meaning of Article 6(1)(c) of Regulation (EC) No 139/2004. Where the assessment confirms that the proposed commitments remove the grounds for serious doubts on that basis, the Commission clears the merger in Phase I.

(1510) The Commission analysed the proposed Commitments in that context and found them inappropriate to offset the significant competition concerns stemming from the Transaction, including the risk of enhancement of the pre-existing market power in the hands of INEOS. In particular, the Commission could not firmly conclude, also

⁹⁹⁶ That choice was also reflected in the Notifying Parties' request to market test the remedy offered in Phase I. The alternative packages offered in Phase I were qualified by the Notifying Parties as "*entirely separate and not contingent on the first divestment package*." Moreover, the Notifying Parties declared that they submitted that alternative package on the basis that it would not affect the chances of Phase I clearance and indicated that "[i]f the case team consider that the market testing of this distinct divestment package risks undermining the effectiveness of any market test, the Parties are content for the Commission only to market test the first divestment package and the Parties would be prepared to withdraw the second divestment package if appropriate." See Notifying Parties, email of Aurora Luoma to Ana Garcia Castillo, dated 14 October 2013, at 22:33.

due to a generally inconclusive market test, that the size, quality, location and degree of vertical integration of the assets included in the package would be sufficient to fully address the serious doubts identified, let alone replicate the constraint exercised by Solvay's plants pre-Transaction.

- (1511) The Commission therefore considered in Phase I that, on balance, there was great uncertainty as regards the effectiveness of the remedy package and that the proposed Commitments were not sufficiently clear-cut to remove the Commission's serious doubts as to the compatibility of the Transaction with the internal market and with the EEA Agreement in the market for commodity S-PVC.⁹⁹⁷

11.2.2. *The Phase I Commitments for the sodium hypochlorite market*

- (1512) The remedies consisted of the divestment to a suitable purchaser of a business for the supply of sodium hypochlorite to customers in the Benelux (the "Sodium Hypochlorite Divestment Business"). More precisely the Sodium Hypochlorite Divestment Business will include:

- (a) a ten year business transfer agreement and a ten years operating, maintenance and supply agreement of certain volumes (between [...]* tons, [...]*, and [...]* tons) of sodium hypochlorite from the Notifying Parties' Benelux plants (mainly Solvay's). The agreements will be extendable by two year periods, unless terminated by 12 months' written notice by either party;
- (b) the Benelux sodium hypochlorite customer portfolio of the Notifying Parties (equal to [...]* tons in 2012), including the customer orders and other relevant records;
- (c) at the option of the purchaser, the benefit of all transitional arrangements which are necessary to ensure the viability and competitiveness of the Sodium Hypochlorite Divestment Business for a transitional period after divestment of the Sodium Hypochlorite Divestment Business.

- (1513) The Sodium Hypochlorite Divestment Business would not have included sodium hypochlorite production assets. The Commission therefore considered in the Decision opening the proceedings that the proposed commitments for sodium hypochlorite were not sufficiently clear-cut to remove the Commission's serious doubts as to the compatibility of the Transaction with the internal market and with the EEA Agreement.

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In the Response to the Decision opening the proceedings, Paragraph 1.12, the Notifying Parties stated with respect to commodity suspension-PVC: "*The Parties do not intend to respond in detail to the Commission's objections on the remedy package offered at Phase 1 in this Reply. The Parties consider that it is more important at this stage to deal comprehensively with the substantive issues set out by the Commission in the Decision. The Parties also put forward the Phase 1 remedy package in order to achieve a speedy clearance, but believe the scope of the appropriate package needs to be revisited after more detailed substantive assessment as the same remedy may not be appropriate at Phase 2.*" Accordingly, the Commission will not elaborate in this Decision on the commitments proposed in Phase I.

- (1514) Both in their Response to the SO and in their Response to the Decision opening the proceedings,⁹⁹⁸ the Notifying Parties refer to the Commission's rejection of the remedies they submitted for sodium hypochlorite, during the Phase I proceedings.
- (1515) The Notifying Parties' argumentation mainly focusses on (i) the allegedly negative and selective interpretation by the Commission of the results of the market test which in the opinion of Notifying Parties could be more generally described as positive with a proportion of uncertainty, and (ii) the fact that a similar remedy had been accepted in the past, therefore setting a precedent.⁹⁹⁹
- (1516) As already indicated in the Decision opening the proceedings and in the SO and as acknowledged by the Notifying Parties in their Responses, the market test in Phase I was not conclusive in many aspects. However, it clearly supported that a sodium hypochlorite contract manufacturing agreement for ten years between the JV and a potential purchaser, that would become both a customer and a competitor of the JV's, was not suitable to ensure effective competition and remove in a sufficiently clear-cut manner the Commission's serious doubts in the three possible relevant markets identified.
- (1517) The Commission also notes that divestitures are the benchmark for other remedies in terms of effectiveness and efficiency. The Commission therefore may accept other types of commitments, but only in circumstances where the other remedy proposed is at least equivalent in its effects to a divestiture.¹⁰⁰⁰
- (1518) In that respect, the Commission notes that the remedy proposed by the Notifying Parties in Phase I would not lead to the establishment of a business that can operate on a stand-alone-basis, which means independently of the merging parties as regards the supply of input materials or other forms of cooperation other than during a transitory period.¹⁰⁰¹ On the contrary, the potential purchaser would be highly dependent on the JV, and would therefore lack the required independence to become a full-fledged new entrant in sodium hypochlorite.
- (1519) Moreover, the Commission notes that where the parties submit remedies proposals that are so extensive and complex that it is not possible for the Commission to determine with the requisite degree of certainty, at the time of its decision, that they will be fully implemented and that they are likely to maintain effective competition in the market, an authorisation decision cannot be granted.¹⁰⁰²
- (1520) As pointed out in the Decision opening the proceedings, a number of conditions such as price would appear to be important for a correct implementation of the remedy. The Commission considers that an effective monitoring of those conditions and of the concrete day-to-day implementation of the remedy proposed by the parties would be challenging, if not impossible.
- (1521) In view of those elements and taking into account the results of the market test which are specific to this case, the Commission continues to consider that the commitments

⁹⁹⁸ Response to the SO, Paragraphs 9.26 to 9.30; and Response to the SO, Paragraphs 8.39 to 8.48.

⁹⁹⁹ Case No M.4730 *Yara/Kemira Growth* (2007).

¹⁰⁰⁰ Commission's Remedies Notice, Paragraph 61.

¹⁰⁰¹ Commission's Remedies Notice, Paragraph 32.

¹⁰⁰² Commission's Remedies Notice, Paragraph 14.

offered by the Notifying Parties in Phase I are not suitable to remove the competition problem as regards sodium hypochlorite.

11.3. The Commitments of 27 February 2014 for Commodity S-PVC

(1522) In the course of the Phase II proceedings, in order to address the competition concerns identified by the Commission in the SO, the Notifying Parties initially submitted a first set of commitments on 27 February 2014 (the "Commitments of 27 February 2014"). On the basis of the evidence in the file, the Commission found that these commitments were insufficient to maintain effective competition in the relevant market and decided not to market test them.

(1523) The Commitments of 27 February 2014 are described in greater detail in Section 11.3.1. Section 11.3.2. contains the Commission' assessment of that remedy package.

11.3.1. Description of the Commitments of 27 February 2014

(1524) The Commitments of 27 February 2014 consisted of the divestment of:

(a) INEOS' stand-alone S-PVC plant located in Schkopau (Germany) together with a VCM supply contract already agreed upon with Dow on-site (the "Schkopau Package"). Under the terms of the Commitments of 27 February 2014, Schkopau would have benefitted from a [...] VCM supply contract with Dow [...].

(b) INEOS' vertically integrated PVC chain comprising: (i) the membrane electrolysis cellroom, the EDC/VCM plant and related production assets (including sodium hypochlorite production assets) in Tessengerlo, excluding the on-site mercury electrolysis cellroom and the associated caustic potash production assets; and (ii) the S-PVC plants in Mazingarbe and Beek Geleen (the "LVM Package"). Since the LVM Package will be located on a shared site with the mercury cellroom and caustic potash business retained by the JV as well as the [...] business owned [...] and the [...] business run by a third party, [...], the disposal of the LVM package will be subject to the following:

- the JV and the Purchaser of LVM Package would enter into an appropriate agreement for the Purchaser to operate the mercury electrolysis cellroom and caustic potash production assets on a toll manufacturing basis on behalf of the JV;
- the JV and the Purchaser of LVM Package would enter into a toll manufacturing agreement for the production and supply by the LVM Purchaser of EDC to the JV, using as feedstock the chlorine (from the mercury electrolysis cellroom) and ethylene provided by the JV;
- the transfer to the Purchaser of LVM Package of the arrangements under which INEOS is currently operating on a toll manufacturing basis certain businesses at Tessengerlo.

Moreover, under the terms of the Commitments of 27 February 2014, the LVM Package would have included the following:

- a supply agreement with a third party, [...], for the supply of hydrochloric acid to the Tessengerlo plant;
- a supply agreement with the JV on commercial terms for the supply of hydrogen and sodium hypochlorite which is produced in the JV mercury electrolysis cellroom at Tessengerlo.

- (1525) The Notifying Parties committed to defer implementation of the JV until a final binding sale and purchase agreement for the sale of both the Schkopau and the LVM Packages was signed with a [...] purchaser approved by the Commission, [...].
- (1526) The Commitments of 27 February 2014 also included: (i) all tangible and intangible assets (including intellectual property rights, but excluding the right to use the NORVINYL brand under which the divestment businesses and other INEOS sites sell S-PVC products), which contribute to the current operation or are necessary to ensure the viability and competitiveness of the divestment businesses; (ii) all licences, permits and authorisations issued by any governmental organisation for the benefit of the divestment businesses; (iii) all contracts, leases, commitments, customer, customer orders, credit and other records of the divestment businesses; (iv) the personnel currently employed. Moreover, for a transitional period of up to two years and on terms and conditions equivalent to those at present afforded to the divestment businesses, the divestment businesses will benefit from all current arrangements under which the Notifying Parties or affiliated undertakings supply products or services to the divestment businesses, unless otherwise agreed with the purchaser.

11.3.2. *Commission's assessment of the Commitments of 27 February 2014*

- (1527) The Commitments of 27 February 2014 differ from the remedies offered in Phase I because Schkopau would be complemented by the LVM Package, instead of the Wilhelmshaven / Runcorn combination. In this Section, the Commission will however only focus on the assessment of the suitability of Schkopau as part of overall remedy package. Due to the shortcomings of the Schkopau plant, the Commission concludes that the overall remedy package is not sufficient to address the significant competition concerns brought about by the Transaction.

11.3.2.1. Suitability to remove competition concerns

- (1528) The Commitments of 27 February 2014 would remove [80-90]% of the overlap between INEOS and Solvay in terms of S-PVC installed capacity in NWE, according to the information provided in the response to the RFI of 19 September 2013, but [90-100]% according to the information provided in the Annexes to the Form CO. The Schkopau Package, however, represents approximately [40-50]% of the total capacity of the Divestment Business. The competitiveness of the Schkopau Package, therefore, is a key determinant of the competitiveness of the Divestment Business as a whole, and of its suitability to remove the competition concerns identified by the Commission.
- (1529) As mentioned in Section 11.2., the Commission had already found in the Decision opening the Proceedings that the Schkopau Package, together with the Wilhelmshaven / Runcorn Phase I Package, was unsuitable to remove the serious doubts found by the Commission during its Phase I investigation.
- (1530) Specifically, the Commission found through its Phase I market test that the Schkopau Package suffers from severe shortcomings.

- (1531) First, Schkopau's geographic location in Eastern Germany, and therefore at the outskirts of NWE, is not ideal to replicate the constraint exercised by Solvay's plants pre-Transaction, all of which are located at the heart of NWE.¹⁰⁰³
- (1532) Second, many players pointed at the risks of Schkopau's reliance on Dow for its VCM requirements. Mexichem, for example, explained that a "*vertically integrated SPVC plant does not include third parties' or intermediaries, which will add costs and uncontrolled inefficiencies due to the inability to use synergies.*"¹⁰⁰⁴ Moreover, when asked about the ability of the buyer to hold a strong position in negotiations with Dow in the future, 75% of the S-PVC suppliers replying to that question express doubts due to the strong position of Dow.¹⁰⁰⁵ This majority includes Vinnolit, which underlined that "*Dow is in a strong position for negotiation.*"¹⁰⁰⁶
- (1533) In addition, Mitsui stated that "*Having the dependence of VCM supply solely on Dow, means that the purchaser's long term future and viability completely depends upon Dow's plans. Dow is known as being an extremely strong and tough negotiator. I do not therefore see this as a solid base for long term viability of the S-PVC production as a stand-alone company.*"¹⁰⁰⁷ Moreover it indicated that "*there is no way that PVC based on a "market price" of C2 has any chance of competing in those circumstances.*"¹⁰⁰⁸
- (1534) The Commission notes that those comments have been submitted in a context where, for confidentiality reasons, the market participants were unaware of the details of the VCM pricing formula agreed by INEOS and Dow and the overall cost structure of Schkopau.
- (1535) Similar opinions, however, have been expressed by some companies which participated in the bidding process organised by INEOS for the sale of Schkopau, in parallel with the Commission's review of the Transaction.
- (1536) [...]*, in particular, explained that:
 "[...]".¹⁰⁰⁹
- (1537) In order to further investigate the issues raised by those market players, and to assess the suitability of the Commitments of 27 February 2014 to remove the competition concerns, the Commission has reviewed the cost structure of Schkopau and the terms of the VCM supply contract between Schkopau and Dow. The purpose of the review of production costs was to establish whether the Schkopau Package would be able to replicate the competitive constrain exercised pre-Transaction by Solvay and to be a viable competitor.

¹⁰⁰³ See replies to question 9 – Phase I market test of remedies submitted on 14 October 2013 (customers) and Phase I market test of remedies submitted on 14 October 2013 (competitors).

¹⁰⁰⁴ Reply of Mexichem to question 15 – Phase I market test of remedies submitted on 14 October 2013 ID3382.

¹⁰⁰⁵ See replies to question 16 - Phase I market test of remedies submitted on 14 October 2013.

¹⁰⁰⁶ Reply of Vinnolit to question 16 – Phase I market test of remedies submitted on 14 October 2013 ID3473.

¹⁰⁰⁷ Reply of Mitsui to question 14 – Phase I market test of remedies submitted on 14 October 2013 ID3511.

¹⁰⁰⁸ Reply of Mitsui to question 15 – Phase I market test of remedies submitted on 14 October 2013 ID3511.

¹⁰⁰⁹ Notifying Parties' reply to RFI of 28 February 2014, Annex 9.

- (1538) In order to verify the competitiveness of the Schkopau Package the Commission considered in particular the variable manufacturing S-PVC costs of the divested assets. The existence of high variable manufacturing S-PVC costs against a given benchmark constitutes an indication of lack of competitiveness. Variable costs are a relevant measure to consider since when S-PVC suppliers decide to undercut prices of other S-PVC competitors, the variable cost is the level below which a company would not be willing to set its price. Thus the lower the variable costs the higher the ability to rival other competing S-PVC suppliers by undercutting competitors' prices and gaining customers. Figure 3.4 in the Response to the SO confirms this by showing [...]*
- (1539) In order to verify the viability of a production asset, the Commission further considered the level of total costs, EBITDA and EBIDTA margin figures. Lack of viability is consistent with the inability to cover fixed costs in the medium and long run and thus low EBIDTA and EBITDA margins, and consistently high total costs (relative to a suitable benchmark).
- (1540) Given that the Schkopau Package lacks vertical integration upstream and thus must purchase VCM from Dow, the production costs of the Schkopau Package are primarily determined by the VCM supply contract between INEOS and Dow. It is therefore important to understand how the price of VCM is established to assess the level and nature of Schkopau's variable costs.
- (1541) The price at which VCM is purchased by INEOS is determined by a pricing formula in the VCM supply contract. [...]***¹⁰¹⁰ [...]***.¹⁰¹¹
- (1542) The Notifying Parties explain that the VCM formula is designed to replicate the cost structure of a vertical integrated chain. As explained in Section 11.1.2., vertical integration is crucial because it effectively and efficiently allows the S-PVC to enjoy the economies brought about by the margins of co-products and by-products, in this case primarily caustic soda. The caustic net-back substantially reduces the costs of chlorine which is an essential input for the production of S-PVC.
- (1543) The Notifying Parties argue that the formula fully replicates the cost structure of a vertically integrated chain and thus the pricing incentive an integrated vertical S-PVC supplier.
- (1544) The Commission disagrees with that statement. As a result of the formula, the Commission considers that [...]***.
- (1545) An analysis of the VCM formula shows that [...]***.
- (1546) The Commission is concerned that [...]***.
- (1547) Based on the Reply to the RFI of 28 February 2014 and 6 March 2014, the variable costs of the Schkopau Package (including caustic netback) amount to [...]***and EUR [...]*** of S-PVC respectively for 2012 and 2013. The average variable costs of the

¹⁰¹⁰ These are the costs incurred only at the S-PVC part of the value chain, and therefore exclude VCM costs.

¹⁰¹¹ As explained by INEOS in the Reply to the RFI of 6 March 2014 (in Annex 1 and Annex 2), in general [...]***.

INEOS portfolio of plants, excluding Schkopau, were [...] and [...] of S-PVC respectively for 2012 and 2013. This amounts to [...].

- (1548) [...] Based on the data provided by the Notifying Parties, applying the terms of this new contract retrospectively to 2012 and 2013 would result in variable costs for Schkopau of EUR [...] and EUR [...] of S-PVC respectively. [...].
- (1549) Recent changes in variable cost at Schkopau and other INEOS' plants also show that [...]. Between 2012 and 2013, [...].¹⁰¹² This shows [...].
- (1550) The Commission considers [...].
- (1551) [...].
- (1552) Furthermore, [...].¹⁰¹³ [...].
- (1553) The Commission therefore concludes that the Schkopau Package cannot replace the competitive constraint exercised by Solvay pre-Transaction.

11.3.2.2. Viability of the divested business

- (1554) Schkopau's dependence on Dow for its VCM needs implies that Dow is in a strong bargaining position regarding the negotiation of the terms for the VCM contract, even if, as pointed by the Notifying Parties, there is a mutual dependence between Dow and Schkopau insofar as the latter is the natural outlet for Dow's VCM. Indeed, it is doubtful whether a purchaser could negotiate a contract which ensures access to VCM at competitive conditions. [...].
- (1555) The current contract for the supply of VCM that would be transferred as part of the Schkopau Package is [...]. As discussed in the previous Section, [...].
- (1556) In addition, the purchaser of the Schkopau Package would have to renegotiate the VCM supply contract upon expiry. The Commission considers it unlikely that any purchaser would have sufficient bargaining power to secure competitive terms. In that respect it is to be noted that at the time of renegotiating the current supply contract, INEOS was particularly well placed to credibly threaten Dow with the closure of Schkopau if the price proposed was not sufficiently competitive. This is due to the fact that INEOS has a large portfolio of plants and that, in addition, it was about to significantly enlarge its portfolio with the addition of Solvay's plants. Those unique circumstances are difficult, if not impossible for the purchaser to replicate. The purchaser's inability to renegotiate a supply contract at competitive prices endangers the viability of the divestment business and may even force the purchaser to consider closure.
- (1557) The future market positioning and viability of the Schkopau Package heavily depends on Dow. At present, Dow is in the process of disposing of its United States chlor-vinyl activities.¹⁰¹⁴ As regards its European activities, Dow clarified in the

¹⁰¹² Reply to the RFI of 28 February 2014 and 6 March 2014.

¹⁰¹³ For instance, [...].

¹⁰¹⁴ Dow CEO & CFO Analyze 2nd Quarter Earnings, Second Quarter 2013 Earnings, 25.7.2013, Dow's website: <http://www.dow.com/investors/earnings/2013/13q2sum.htm>, visited on 28.03.2014.

context of a conference call with the Commission that it does not intend at this stage to divest its chlor-alkali assets in Europe.¹⁰¹⁵

- (1558) Regardless of Dow's current intentions, the very fact that the viability of the Schkopau Package depends on a third party highlights the vulnerability of that package. Even if Dow has stated that for the moment it is not interested in moving out of that business in Europe, such a strategy cannot be excluded in the future. This would likely have very serious implications for any purchaser and for the existing VCM supply, which may even lead to consider closure.
- (1559) The Commission therefore concludes that the Schkopau Package's heavy dependence on Dow threatens the viability of the Divestment Business. Therefore, the viability of the Schkopau Package has not been established.

11.3.2.3. Conclusion

- (1560) The Commission concludes that the Schkopau Package cannot replace the competitive constraint exercised by Solvay pre-Transaction.
- (1561) The Commission also notes that the Schkopau Package has already been subject to market testing in the context of the Phase I remedies, which had already highlighted some problematic aspects of the package at that stage.
- (1562) Moreover, the Commission notes that its assessment of the competitiveness of the Schkopau Package was based on cost data and the terms of the VCM Contract. Both of these have been considered confidential by the Notifying Parties and could not have been therefore disclosed to third parties in the context of a market test.
- (1563) The Commission therefore considers that a second market test of the Schkopau Package would not have brought to its attention any additional elements that would be useful for its assessment. The Commission has therefore decided to reject the Commitments of 27 February 2014 as a whole, without carrying out any additional market test.

11.4. The Commitments of 11 March 2014 for Commodity S-PVC

- (1564) A revised set of commitments was submitted by the Notifying Parties on 7 March 2014 and subsequently revised on 10 and 11 March 2014 (the "Commitments of 11 March 2014"). Those commitments consisted of three alternative remedy packages. On 12 March 2014, the Commission launched the market test for two of these packages for the reasons explained in Section 11.4.2.
- (1565) Sections 11.4.1, 11.4.3 and 11.4.5 describe in greater detail respectively Package 1, Package 2 and Package 3, whilst Sections 11.4.2, 11.4.4 and 11.4.6 contain the Commission' assessment of each of those remedy packages.

11.4.1. Description of Package 1

- (1566) Package 1 consisted of an amended version of the Commitments of 27 February 2014 described in Section 11.3.1. In particular, Package 1 includes the LVM Package and an amended version of the Schkopau Package (the "Amended Schkopau Package"). More precisely, in order to remove the Commission's concerns with

¹⁰¹⁵ See minutes of the conference call with Dow of 4 December 2014 ID4714.

respect to the variable cost structure of Schkopau, the Notifying Parties commit to amend the pricing formula contained in the VCM supply contract with Dow to [...]*

(1567) The new pricing formula would have the following structure[...]*.

(1568) For all other elements, Package 1 fully replicates the Commitments of 27 February 2014.

11.4.2. Commission's assessment of Package 1

(1569) This Section contains only the assessment of the amended pricing formula for the VCM contract with Dow. The assessment of all the other elements is contained in Section 11.3.2.

(1570) Package 1 essentially consists of a commitment to reach an agreement with [...] to renegotiate the pricing formula contained in the VCM supply contract. The Commission considers that Package 1 would still suffer from several shortcomings.

(1571) First, the adjustments to the formula provided in the context of Package 1 [...]*

(1572) However, the amendments in the formula [...]*

(1573) Consistently, with the explanation in Recital (1547), the average of the variable costs of the INEOS portfolio of plants excluding the Schkopau Package were equal to EUR [...] and EUR [...] of S-PVC respectively for 2012 and 2013. This implies a [...]*. Under the new remedy proposal, Package 1 variable cost would have [...] between 2012 and 2013, thus leading to [...]*. This casts serious doubts on the competitiveness of the remedy on a forward looking perspective.

(1574) Second, the new pricing formula proposed by the Notifying Parties is unprecedented, being an *ad hoc* solution proposed by the Notifying Parties to dispel the Commission's concerns. If anything, therefore, the need to implement such arrangement shows that [...]*. This raises further doubts as to the suitability of such a divestment to address the competition concerns raised by the Transaction.

(1575) Third, even if the amendments proposed by the Notifying Parties would partially enhance Schkopau's competitiveness, these amendments would also change the risk allocation between the operator of the S-PVC plant and Dow. The new formula will change the structure of the payment with the effect of changing the risk faced by Dow and a potential purchaser. In particular, as a result of the revised formula, both the purchaser and Dow would bear more risks [...]*

(1576) The change of risk allocation in the new pricing formula, together with the fact that such formula has never been tested in practice, implies that it may be preferable for the purchaser and Dow to revert back to the old and more established contract ([...]*). Both Dow and the purchaser are third parties for the purposes of these proceedings, who have not committed to maintaining the new pricing formula. Therefore, there would be no legal means for the Commission to enforce the commitments against those third parties, in circumstances where Dow and the purchaser agreed to restore the old formula.

(1577) There is therefore substantial uncertainty as to whether Package 1 would remove the competition concerns identified by the Commission.

(1578) Those shortcomings add to the aforementioned weaknesses referred to in Section 11.3.2.2, such as the purchaser's dependence on Dow and the less advantageous location of the plant in NWE.

(1579) In light of (i) the elements above, (ii) the fact that the Commission had sufficient information to assess the effectiveness of Schkopau as a remedy in view of the information gathered in Phase II and the results of the Phase I market test, and (iii) the Commission's inability to market test the new pricing formula due to its confidential nature, the Commission concluded that Package 1 does not constitute a suitable remedy, and has therefore decided to reject it without carrying out a market test.

11.4.3. *Description of Package 2*

(1580) Package 2 consisted in the divestment of:

- (a) The LVM Package as described in Section 11.3.1., including all toll manufacture and supply agreements.
- (b) INEOS' VCM/S-PVC plant at Wilhelmshaven (Germany). Since the Wilhelmshaven site lacks full vertical integration up to chlorine and therefore requires an EDC supply, the Notifying Parties proposed the following:
 - a commitment by the JV to pay the cost of debottlenecking the membrane chlorine electrolysis cellroom at Tessenderlo by [...] kt;
 - at the option of the purchaser, a 10-year EDC supply contract with the JV on terms which will reflect the cost of producing EDC and which include the credit from selling the corresponding quantity of caustic soda. According to the Notifying Parties, the EDC supplied to Wilhelmshaven VCM/S-PVC plant would be sufficient to operate Wilhelmshaven at full capacity (all together the "Wilhelmshaven Package").

(1581) The Notifying Parties committed to defer implementation of the JV until a final binding sale and purchase agreement for the sale of both the LVM and the Wilhelmshaven Packages was signed with a [...] purchaser approved by the Commission, [...].

(1582) Package 2 included: (i) all tangible and intangible assets (including intellectual property rights, but excluding the right to use the NORVINYL brand under which the divestment businesses and other INEOS sites sell S-PVC products), which contribute to the current operation or are necessary to ensure the viability and competitiveness of the divestment businesses; (ii) all licences, permits and authorisations issued by any governmental organisation for the benefit of the divestment businesses; (iii) all contracts, leases, commitments, customer, customer orders, credit and other records of the divestment businesses; (iv) the personnel currently employed.

(1583) Moreover, for a transitional period of up to two years and on terms and conditions equivalent to those at present afforded to the divestment businesses, the divestment businesses will benefit from all current arrangements under which the Notifying Parties or affiliated undertakings supply products or services to the divestment businesses, unless otherwise agreed with the purchaser.

11.4.4. *Commission's assessment of Package 2*

(1584) Package 2 and Package 3 are very similar and essentially differ on the inclusion of Runcorn in Package 3, which is replaced in Package 2 by the commitment to pay the cost of debottlenecking the membrane cellroom at Tessenderlo and, at the option of the purchaser, a 10-year EDC supply contract with the JV. For this reason, the

Commission will focus in this Section on the assessment of the suitability of the commitments specific to Package 2 to remove the competition concerns brought about by the Transaction. The LVM Package and the Wilhelmshaven plant will be assessed in Section 11.4.6.

- (1585) Package 2 would remove approximately [90-100]*% of the overlap between INEOS and Solvay in terms of S-PVC installed capacity in NWE, according to the information provided in the response to the RFI of 19 September 2013, but [90-100]*% according to the information provided in the Annexes to the Form CO.¹⁰¹⁶
- (1586) The Commission notes that Wilhelmshaven is not fully vertically integrated on-site, and would therefore require EDC supplies to feed its VCM and S-PVC production assets. The Notifying Parties propose to address such shortcoming by (i) paying the cost of debottlenecking for the membrane chlorine electrolysis cellroom at Tessenderlo, which would allow the purchaser to feed [40-50]*% of Wilhelmshaven's EDC requirements from Tessenderlo; and (ii) offering a 10-year EDC supply contract with the JV to cover, at the option of the purchaser, the remaining [50-60]*% of Wilhelmshaven needs.
- (1587) The Commission considers that in spite of those arrangements, Wilhelmshaven's lack of vertical integration generates significant risks for the competitiveness and viability of the Divestment Business.
- (1588) According to the Notifying Parties, Wilhelmshaven would need to source [70-80]*% of its EDC requirements from the JV or third parties. The debottlenecking at Tessenderlo would - in any event - only add [...] kt/y of additional chlorine capacity to Tessenderlo and, therefore, lower the Divestment Business' dependence on external EDC by [10-20]* percentage points, down to [50-60]*%. In addition implementation of the debottlenecking would take [...] years
- (1589) The Commission has doubts as to whether a purchaser would be able to fulfill Wilhelmshaven's EDC requirements from Tessenderlo. In that regard, the Commission notes that in order to supply Wilhelmshaven from Tessenderlo, the purchaser would need to overcome at least two obstacles.
- (1590) First, at present there is no EDC supply relationship between Tessenderlo and Wilhelmshaven. Therefore, it is unclear whether such an unprecedented logistic set-up could be introduced, whether it would be cost-competitive and under what time frame that could take place. Moreover, the Notifying Parties have not provided any estimates of the new cost structure of Wilhelmshaven under this hypothetical new arrangement. It is therefore unclear whether a cost-competitive set-up could be organized, and within which time period.
- (1591) Second, INEOS seems to have run tests in the past to verify the feasibility of establishing an EDC supply relationship between Tessenderlo and Wilhelmshaven. The internal documents on this point [...]*.

¹⁰¹⁶ According to the Notifying Parties, with some additional limited investment Package 2 would remove approximately up to [90-100]*% of the overlap, according to the information provided in the response to the RFI of 19 September 2013, and above the overlap, according to the information provided in the Annexes to the Form CO.

- (1592) As regards the sourcing of the large volumes of EDC required to feed Wilhelmshaven from third parties, this solution also appears to be challenging. As discussed above in Section 11.1.2.2, the development of an EDC market in the EEA has been extremely limited up to date.
- (1593) [...]*.¹⁰¹⁷
- (1594) Even assuming that a purchaser was able to source EDC from third parties (for example, EDC shipped from the United States to the EEA), there are serious risks that the purchaser may not be able to reach an agreement that would ensure Wilhelmshaven's competitiveness. In particular, the purchaser may not be able to capture a sufficiently high share of the caustic soda netback, and more generally would suffer from the shortcomings associated with "virtual" vertical integration. There is a risk that the outcome would be, in practice, a situation similar to the one faced by Schkopau at present. Therefore, there is a significant risk that the purchaser would be not sufficiently competitive for, at least, [50-60]*% of Wilhelmshaven's EDC requirements.
- (1595) It appears more likely, therefore, that a purchaser would need to exercise the option included in the commitments to enter into a long-term agreement with the JV for the purchase of EDC for a large part, if not for the totality, of Wilhelmshaven's EDC requirements.
- (1596) In that respect, the Commission notes that the presence of a long-term contractual relationship between the purchaser and the JV for the supply of a key input, EDC, would not only suffer from the shortcomings associated to virtual vertical integration but it would also create a structural link between the purchaser and the JV.¹⁰¹⁸ Such structural link would lead the JV to acquire control over a large proportion of the EDC's requirements of the Divestment Business. As such, the JV may be able to influence the competitive behaviour of the purchaser on the market.
- (1597) The Commission also considers that the results of the market test confirm the assessment above. Over 85% of competitors stated that they are not in a position to assess the content of Package 2,¹⁰¹⁹ which in itself suggests the complexity of the arrangement proposed by the Notifying Parties.
- (1598) Among the competitors who have provided an answer, Kem One stated: "*The external EDC, whether from the JV or other sources, should be at or close to the cost of a cost leader's captive EDC in order to survive. This will be hard to realize in a market with very few European sources whereof the JV and Dow are the only significant ones. The EDC market is very volatile and heavily influenced by global (mainly Asian) imbalances.*"¹⁰²⁰
- (1599) BorsodChem stated that "*[a]lthough [Tessengerlo's] distance to Wilhelmshaven is shorter than from Runcorn, so the transportation cost of EDC should be more favourable, the coverage of remaining portion of EDC consumption might be an*

¹⁰¹⁷ Response to the RFI of 13 March 2014.

¹⁰¹⁸ See in this regard Paragraph 28 of the Commission's Remedies Notice.

¹⁰¹⁹ Replies to question 24 - Phase II market test of remedies submitted on 11 March 2014 (competitors).

¹⁰²⁰ Reply of Kem One to question 25 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6663.

obstacle. We are not fully aware how competitive conditions can be negotiated for EDC supply in [Western Europe]."¹⁰²¹

- (1600) In addition, Shell explained that "[t]he post purchase set up requirements are highly complex and detailed and would likely be a significant barrier to entry to a purchaser in order to establish a going concern".¹⁰²²
- (1601) Lastly, Vinnolit stated that "Such an implementation could be a significant hurdle for a possible Purchaser as many questions cannot be answered and will need to be assessed based upon estimation and cannot be based upon experience, that is to say high risk."¹⁰²³
- (1602) The Commission notes that even the competitors who express favourable views of Package 2 point to the vulnerabilities of the package. For instance, Vestolit stated that Package 2 is "Principally viable, but depending on the commercial conditions."¹⁰²⁴
- (1603) The Commission also notes that Dow appears to be the only player that in the market test has supported Package 2 without any caveats, by stating that "Many producers purchase EDC and are successful. This especially is the case in Asia where imports are done from the US, Europe, Middle East. In Europe many producers also buy EDC when they need it. Currently producers in Egypt also operate based on imports on a large base."¹⁰²⁵ The Commission notes in this regard that Dow appears to be the only suitable alternative option to the JV for EDC purchases in the EEA.¹⁰²⁶ As such, Dow would likely be in the position to profit from the potentially vulnerable position of the purchaser. The Commission therefore considers that Dow's statements in this context have to be taken with care and cannot be accepted at face value.
- (1604) The Commission therefore concludes that Package 2 is not suitable to remove the competition concerns identified in this Decision, and has serious shortcomings in terms of viability.

11.4.5. Description of Package 3

- (1605) Package 3 differs from Package 2 as regards the supply of feedstock to Wilhelmshaven. In particular, Package 3 includes the membrane cellroom and EDC production facilities at Runcorn, instead of a commitment to debottleneck Tessenderlo along with the optional EDC supply contract with the JV. More precisely, Package 3 consists of the divestment of:

¹⁰²¹ Reply of BorsodChem to question 25 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6645.

¹⁰²² Reply of Shell to question 26 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6780.

¹⁰²³ Reply of Vinnolit to question 26 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6618.

¹⁰²⁴ Reply of Vestolit to question 25 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6775.

¹⁰²⁵ Reply of Dow to question 12 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6685.

¹⁰²⁶ According to the data provided by the Notifying Parties in the Form CO, Section 6, Part M, Table M6.7, Dow is the third player as for EDC capacity available discounted the captive demand, following INEOS and Solvay. Moreover, the Notifying Parties submit that Dow is the largest regular EDC supplier on the merchant market, see Form CO, Section 6, Part M, Paragraph 6.81.

- (a) The LVM Package as described in Section 11.3.1., including all toll manufacture and supply agreements.
- (b) INEOS' VCM/S-PVC plants at Wilhelmshaven.
- (c) INEOS' chlorine/EDC plants and assets located at Runcorn (United Kingdom). Since the Runcorn assets will be located on a shared site, of which the purchaser will be the owner, the disposal of Runcorn assets shall be subject to the following:
- the JV and the purchaser would enter into a perpetual chlorine (and associated by-products) supply agreement in favour of the JV from the membrane cellroom at Runcorn. According to the Notifying Parties, the chlorine capacity remaining to the purchaser will be sufficient to operate Wilhelmshaven at full capacity;
 - the JV and the purchaser would enter into appropriate access agreements for the lifetime of the Runcorn site for assets which form part of the divestment, but which contribute to or are necessary for the JV's other operations at Runcorn, on terms which are normal in the PVC industry;
 - the JV and the purchaser would enter into appropriate access agreements for the lifetime of the Runcorn site for shared assets which are located outside the perimeter of the membrane chlorine and the EDC plants at Runcorn (and are therefore not transferred with divestment), but which contribute to or are necessary for the production of chlorine and/or EDC, on terms which are normal in the PVC industry.
- (1606) Moreover, under the terms of the Commitments of 13 March 2014, at the option of the purchaser, the divestment business would include the following:
- the benefit of a [...] * brine supply agreement with INEOS Enterprises, [...] *;
 - the benefit of a [...] * ethylene supply agreement with INEOS Olefins, [...] *.
- (1607) The Wilhelmshaven and Runcorn plants together will constitute a fully vertically integrated chain (the " Wilhelmshaven / Runcorn Package").
- (1608) Finally, the Notifying Parties made clear that, if there is any asset or personnel which is not covered by Package 3, but which is both used (exclusively or not) and necessary for the continued viability and competitiveness of this remedy package, that asset or adequate substitute will be offered to the purchaser.
- (1609) The Notifying Parties committed to defer implementation of the JV until a final binding sale and purchase agreement for the sale of both the LVM and the Wilhelmshaven / Runcorn Packages was signed with a [...] * purchaser [...] * approved by the Commission, [...] *.
- (1610) Package 3 also includes: (i) all tangible and intangible assets (including intellectual property rights, but excluding the right to use the NORVINYL brand under which the divestment businesses and other INEOS sites sell S-PVC products), which contribute to the current operation or are necessary to ensure the viability and competitiveness of the divestment businesses; (ii) all licences, permits and authorisations issued by any governmental organisation for the benefit of the divestment businesses; (iii) all contracts, leases, commitments, customer, customer

orders, credit and other records of the divestment businesses; (iv) the personnel currently employed.

(1611) Moreover, for a transitional period of up to two years and on terms and conditions equivalent to those at present afforded to the divestment businesses, the divestment businesses will benefit from all current arrangements under which the Notifying Parties or affiliated undertakings supply products or services to the divestment businesses, unless otherwise agreed with the purchaser.

(1612) On 13 April 2014, the Notifying Parties submitted a revised commitment text which included the following improvements to the Package 3 as originally proposed and market tested.

(1613) As regards the LVM Package:

- At the option of the purchaser, Package 3 would include [...]*
- At the option of the purchaser, Package 3 would also include a [...] kV electrical substation at Tessengerlo, which is the site's single point of access to the Belgian national grid. In this case, the purchaser will run the substation for the benefit of all electricity consumers on the Tessengerlo site and the relevant electricity supply contracts would transfer to LVM.

(1614) As regards the Wilhelmshaven / Runcorn Package

- The divestment of INEOS' chlorine plants and assets located at Runcorn will be structured as a 50/50 joint venture between the JV and the purchaser for the production of chlorine (and associated by-products).¹⁰²⁷
- Finally, with regard to the optional [...] brine supply agreement with INEOS Enterprises, the Notifying Parties made a commitment to supply the Purchaser [...]*.¹⁰²⁸

11.4.6. Commission's assessment of Package 3

(1615) Package 3 consists of the divestment of INEOS' S-PVC plants in Wilhelmshaven, Mazingarbe and Beek Geleen, upstream chlorine and EDC production assets in Tessengerlo and EDC production assets in Runcorn. In addition, Package 3 includes a commitment to enter into a joint venture with the purchaser for the joint ownership and operation of the chlorine assets at Runcorn.

(1616) Package 3 would remove approximately [90-100]% of the overlap between INEOS and Solvay in terms of S-PVC installed capacity in NWE, according to the information provided in the response to the RFI of 19 September 2013, but [90-100]*% according to the information provided in the Annexes to the Form CO.¹⁰²⁹

¹⁰²⁷ The respective joint venture agreement will include, among other things, the following principal terms: (i) joint legal (50/50) ownership of all assets which are used exclusively by the chlorine site at Runcorn; (ii) the right to off-take up to 50% of the chlorine produced annually; (iii) [...]*; (iv) [...]*; (v) [...]*; (vi) [...]*; (vii) [...]* (viii) [...]*.

¹⁰²⁸ Costs will be assessed taking into account capital expenditure requirements on the relevant brine assets.

¹⁰²⁹ According to the Notifying Parties, with some additional limited investment Package 2 would remove approximately up to [90-100]*% of the overlap, according to the information provided in the response to the RFI of 19 September 2013, and above the overlap, according to the information provided in the Annexes to the Form CO.

(1617) Package 3 comprises two industrial clusters: Mazingarbe and Beek Geleen, receiving feedstock from Tessenderlo (the LVM Package); and Wilhelmshaven, receiving feedstock from Runcorn (the Wilhelmshaven / Runcorn Package). The main features of those two packages will be discussed in the next Section separately.

11.4.6.1. Removal of competition concerns

(1618) The Commission considers that Package 3 is suitable for removing the competition concerns raised by the Transaction.

(1619) The Commitments would result in the almost entire elimination of the overlap between the Notifying Parties. In addition, the plants included in the Divestment Business are similar to INEOS' average plant in terms of efficiency, and have an ideal location at the heart of NWE.

(1620) In their replies to the market test, some customers have casted doubts on the ability of Package 3 to replicate the competitive constraint exerted by Solvay pre-Transaction. In that regard, the Commission notes that the views of players active in the chemical sector were positive. Moreover, based on the assessment of the Notifying Parties' submissions, the economic and financial analysis of Package 3 and the improvements tabled on 13 April 2014, the Commission considers that Package 3 is in principle capable of replicating the competitive constraint exerted by Solvay pre-Transaction.

(1621) The Commission therefore concludes that the combination of the LVM Package and the Wilhelmshaven / Runcorn Package in the form of Package 3 removes the significant competition concerns raised by the Transaction. As discussed in the next Section, however, that is subject to the fulfilment of specific purchaser requirements that would ensure the viability of the Divestment Business.

11.4.6.2. Viability of the LVM Package

(1622) The Commission notes that the LVM Package is a standalone, vertically integrated industrial cluster, which is self-sufficient with respect to its input requirements up to chlorine. Its divestment would essentially imply the unwinding of INEOS' acquisition of Tessenderlo in 2011.

(1623) In the context of the market test., some respondents raised concerns regarding the viability of the LVM Package. The trader Mitsui, for instance, stated: "*[t]he former LVM assets (referred to as the LVM cluster), taken over by Ineos some years ago, were believed by the industry to be losing significant money at the point of take over. This was presumably one reason that LVM decided to dispose of them. It is likely Ineos will have worked to improve the efficiency - but to what extent it is impossible for Mitsui to know.*"¹⁰³⁰

(1624) One player, Kem One, has also cast doubts on one specific component of the package, that is to say Beek Geleen. In particular, Kem One stated: "[...]".

(1625) On the basis of the data provided by the Notifying Parties, the Commission considers that the S-PVC plants included in the LVM Package are efficient and in line with the

¹⁰³⁰ Reply of Mitsui to question 4 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6688.

average costs of INEOS' plants.¹⁰³¹ Moreover, the geographic position of the LVM Package is ideal to reach customers in NWE. The Commission also notes that the inclusion in the package, at the option of the purchaser, of the [...] kV electrical substation at Tessenderlo - which is the site's single point of access to the Belgian national grid - would also allow the purchaser to benefit from the current electricity prices enjoyed by Tessenderlo.

- (1626) With specific regard to Beek Geleen, the Commission notes that, on the basis of the Notifying Parties' submission, the cost of implementing closed reactor technology [...] would be around [...]. In any event, the reactors at Beek Geleen do not require updating until [...].
- (1627) As regards access to ethylene, Tessenderlo is located on the ARG pipeline. The LVM Package currently sources [...] % of its ethylene requirements from [...]. However, in [...].
- (1628) In that regard, the Commission considers it likely that in the future LVM will be able to secure ethylene supplies at competitive conditions. It is true that some players in the market test, as well as representatives of INEOS' employees, have pointed to INEOS' current advantages in sourcing ethylene because of its large volumes of purchases and the ownership of the Antwerp tank. However, no competitor has raised any significant concerns relating to sourcing ethylene on the ARG network.
- (1629) In any event, INEOS has committed to [...].
- (1630) Some market players have raised concerns in the course of the market test as regards the reverse carve-out of the mercury cellroom from Tessenderlo, together with the caustic potash business.
- (1631) According to some market participants, such a carve-out would lead the purchaser to lose an important source of revenues and would *de facto* result in a chlorine deficit, thereby weakening the purchaser and the overall effectiveness of the remedy.¹⁰³²
- (1632) The Commission notes in this regard that the Transaction would give rise to no competition concerns with respect to caustic potash. While the reverse carve-out of the mercury cellroom and caustic potash business would cause a loss of revenues for the purchaser of the LVM Package, the EBITDA of the LVM Package would remain positive.
- (1633) Moreover, Tessenderlo's mercury cellroom will have to be converted or closed down by 2017 due to pre-existing environmental commitments. The reverse carve-out of the cellroom ensures that the purchaser will not have to bear the costs of this conversion, which amounts to more than EUR [...]. Both the profits stemming from the mercury cellroom and the costs and liabilities associated with the conversion would remain with the JV.

¹⁰³¹ See Table 2 of Parties' Response to the European Commission's RFI dated 6 March 2014 where the variable costs of Mazingarbe and Beek are respectively EUR [...] of S-PVC and EUR [...] of S-PVC for year 2012 and year 2013 and EUR [...] of S-PVC and EUR [...] of S-PVC for year 2012 and year 2013 and the average costs of the remaining INEOS plants excluding also Schkopau are [...] of S-PVC and [...] of S-PVC for year 2012 and year 2013.

¹⁰³² See amongst others email of Tessenderlo Chemie of 31 March 2014 ID6974, and letter from INEOS' employees representatives of 2 April 2014 ID6957.

- (1634) The validity of that approach has been confirmed in the market test by market participants such as BASF, which explained: *"According to the latest regulation in Belgium the mercury based technology will have to be shut-down by end of 2017. Hence it is regarded as appropriate not to base the acquired business on assets which can be operated only short to mid term."*¹⁰³³
- (1635) Mitsui has also expressed a similar position, stating: *"Caustic Potash is a high margin product (compared to normal Caustic Soda). The JV will by doing this, have taken this high value product out of the LVM cluster, reducing the overall values [sic] of the output products. However - equally, the Mercury unit will have to close or be converted to Membrane technology by the end of 2017, due to regulation. Therefore the JV will also end up with the liability of this cost as well."*¹⁰³⁴
- (1636) In addition, the reverse carve-out would be carried out in a way which appears to minimise the possible disruption of the purchaser's operations. This is because the purchaser itself will operate the mercury cellroom on behalf of INEOS, and be compensated with a tolling fee. In other words, no physical carve-out would take place at Tessenderlo, while the JV and the purchaser would have no knowledge of each other's' costs.
- (1637) Another concern raised in particular by INEOS' employees representatives relate to the agreement that would be transferred together with the Divestment Business according to which the purchaser would have to buy hydrogen chloride from [...] at a fixed price (the "HCl Agreement").
- (1638) In particular, according to the Notifying Parties' proposal, the LVM Package will include an existing long term supply contract with [...]*, for the supply of hydrochloric acid gas. Tessenderlo uses this hydrochloric acid (containing the equivalent of [...]*kt of chlorine) to produce additional EDC/VCM. S-PVC produced by using hydrochloric acid instead of VCM from chlorine produced at the membrane cellroom is about [...]*.
- (1639) The Commission notes that the HCl Agreement corresponds to just [...]*% of the chlorine required by the Tessenderlo S-PVC capacity. Moreover, the actual marginal costs of producing S-PVC at Tessenderlo do not increase as a result of the HCl Agreement. This hydrogen chloride tonnage has to be purchased by the purchaser, so from the perspective of the purchaser the cost of this hydrogen chloride is a fixed cost (that is to say it does not vary according to Tessenderlo's output). Thus the marginal cost of S-PVC that determines the LVM Package's actual level of output and whether it produces an additional tonne of S-PVC is solely based on the lower cost of VCM produced using chlorine from the membrane cellroom. The HCl Agreement does not, therefore, affect the competitiveness of Tessenderlo and the LVM Package as a whole.
- (1640) The Commission, however, notes that the arrangements related to the carve-out of the mercury cellroom and caustic potash business at Tessenderlo and the inclusion in the LVM Package of the HCl Agreement reduces the financial attractiveness and

¹⁰³³ Reply of BASF to question 5 – Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6654.

¹⁰³⁴ Reply of Mitsui to question 5 – Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6688.

increases the complexity of Package 3. Those arrangements could therefore lead to substantial implementation risks. This would be particularly the case if the Divestment Business was acquired by a player without proven expertise in the industry. These considerations will be discussed more in detail in Section 11.4.6.4.

11.4.6.3. Viability of the Wilhelmshaven / Runcorn Package

- (1641) Wilhelmshaven is the largest among INEOS' plants. Wilhelmshaven's variable costs are broadly in line with the rest of INEOS' portfolio.¹⁰³⁵
- (1642) The Commission notes that Wilhelmshaven is not vertically integrated on-site. However, the inclusion of Runcorn in the package would address the issues discussed in Section 11.4.4. A purchaser would be able to supply Wilhelmshaven with Runcorn's EDC output.
- (1643) The Commission notes in this regard that INEOS launched this arrangement in the first quarter of 2013, that is to say pre-Transaction. In particular, INEOS made a strategic decision to avoid converting the mercury cellroom at Wilhelmshaven and reconfigure Runcorn to produce EDC for supplying Wilhelmshaven. Therefore, the combination of these two assets gives rise to a fully vertically integrated chain, from chlorine to S-PVC.
- (1644) [...]*
- (1645) In spite of that, certain players raised concerns in the course of the market test that the Wilhelmshaven plant would not be a cost competitive and efficient asset. In particular, Kem One stated that *"The plant is not integrated, the logistical costs for the intake of EDC from any source are only justified if a long term agreement for low cost EDC can be made."*¹⁰³⁶ Moreover, Mitsui stated: *"I would have some [sic] concern that this unit is that it is no longer vertically integrated on site with feedstocks [sic] (EDC). All EDC has to be imported - either from another site of the owner (like today, Runcorn) or in the future as purchases on the market. This likely makes the EDC more costly than a producer where the units are all co-located."*¹⁰³⁷
- (1646) The concerns expressed by these players refer to either a scenario where the purchaser must rely on third party EDC or to the Runcorn / Wilhelmshaven set-up.
- (1647) With regard to the first scenario the Commission notes that, under Package 3 the purchaser would be able to fulfil all of Wilhelmshaven's EDC requirements from Runcorn, as INEOS has been doing since Q1 2013.
- (1648) With regard to the concerns submitted regarding the Runcorn / Wilhelmshaven set-up, the Commission notes that INEOS has itself decided to avoid converting the mercury cellroom at Wilhelmshaven and reconfigure Runcorn to produce EDC for supplying Wilhelmshaven. As discussed above, the cost structure of this set-up is comparable to that of an average S-PVC plant operated by INEOS.

¹⁰³⁵ See Table 2 of Parties' Response to the European Commission's RFI dated 6 March 2014 where [...]*

¹⁰³⁶ Reply of Kem One to question 11 – Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6663.

¹⁰³⁷ Reply of Mitsui to question 11 – Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6688.

- (1649) As regards ethylene access, Runcorn will have the option to (i) either source ethylene from INEOS' Olefins site in Grangemouth for [...] at competitive conditions or (ii) to source ethylene from other ethylene suppliers on the British network (namely, Shell and SABIC). This was confirmed by the market test.
- (1650) In this context, the Commission recalls that ethylene is a key input for S-PVC suppliers, accounting for more than 50% of S-PVC production costs and around 85% of S-PVC variable costs (including caustic netback).¹⁰³⁸
- (1651) According to the Remedies Notice "[...] *on-going relationships of the divested business may be necessary to maintain the full economic viability and competitiveness of the divested business for a transitional basis. The Commission will only accept such arrangements if they do not affect the independence of the divested business from the parties.*"¹⁰³⁹
- (1652) The current set-up of Package 3 is unlikely to make a purchaser dependent on INEOS for ethylene and expose it to any anti-competitive behaviour in the future for the following reasons:
- The ethylene supply agreement is at the option of the purchaser. As such, that agreement will not automatically be part of Package 3. Therefore, INEOS may not eventually be in a position to unilaterally influence the behaviour of the purchaser. The purchaser may in fact decide to use the optional ethylene supply agreement to obtain better contractual terms from SABIC or Shell in lieu of establishing a relationship with INEOS Olefins.
 - Even if a purchaser exercised the option to enter into this agreement, this latter would have a transitional nature - lasting for a maximum of [...]*. Following this time period, a purchaser will be free to choose its ethylene supplier. Moreover, this agreement will be linked to a public index, that is to say ICIS index, and INEOS Olefins will offer the purchaser [...]*, which is *prima facie* competitive.¹⁰⁴⁰
 - Finally, the Commission also takes note that INEOS announced on 28 March 2014 that it is set to invest GBP 300 million in its cracker at Grangemouth, which will force INEOS Olefins to look - and compete - for a stable seller-buyer relationship, the purchaser of Package 3 being the most natural solution.¹⁰⁴¹
- (1653) Based on this specific set of circumstances, the Commission concludes that the [...]* relationship between INEOS and the purchaser will not negatively affect the Divestment Business.
- (1654) The [...]* supply agreement with INEOS Enterprises for the sourcing of brine would also not create a long-term dependence. The purchaser will in fact be in a position to replace brine with white salt, should it be willing to do so. While this switch may

¹⁰³⁸ Response to the RFI of 4 April 2014.

¹⁰³⁹ Remedies Notice, Paragraph 28.

¹⁰⁴⁰ Based on the Notifying Parties' response to the RFI of 2 April 2014, [...]*.

¹⁰⁴¹ See INEOS' website: <http://www.ineos.com/Sites/Grangemouth/At-a-crossroads/> and <http://www.ineos.com/News/INEOS-Group/Grangemouth-milestones/>, both retrieved on 11 April 2014.

trigger some additional costs, these costs will not be of such an extent as to call into question the competitiveness and viability of the purchaser. Moreover, the main key inputs for a fully vertically integrated player are ethylene and electricity (which accounts for around 15-20% of production costs), but not salt.

- (1655) The Commission notes that the joint venture that the purchaser and the JV will have to set up for the joint ownership and operation of the chlorine plant at Runcorn adds a further layer of complexity to the implementation of the remedies. That joint venture agreement would in fact establish a link between the purchaser and INEOS.
- (1656) However, the Commission considers that the joint venture structure proposed by the Notifying Parties would lead the purchaser and the JV to share the profits and risks deriving from the operation of the business. As such, that structure is likely to minimise the risk that INEOS would use its position as owner of the Runcorn site to the detriment of the chlorine and EDC assets.
- (1657) The Commission also notes that some players, such as Kem One and Vinnolit, have stated that the terms of a site sharing agreement between the purchaser and the JV will be key for the viability of the Divestment Business, and that the purchaser should have access to sufficient information before concluding the agreement.
- (1658) The Commission therefore considers that the need for the purchaser to conclude a joint venture agreement with the JV increases the complexity of Package 3 and could lead to substantial implementation risks. That would particularly be the case if the Divestment Business was acquired by a player without proven expertise in the industry. Those considerations will be discussed more in detail in Section 11.4.6.4.

11.4.6.4. Viability of Package 3 as a whole

- (1659) The Commission notes that, according to data submitted by the Notifying Parties, Package 3 comprises viable businesses. In particular, they explain that under Package 3 the LVM Package would have had an EBIDTA of EUR [...]*,¹⁰⁴² while the Wilhelmshaven / Runcorn Package would have had an EBITDA of EUR [...]*.¹⁰⁴³
- (1660) Unlike Packages 1 and 2, Package 3 is not based on an artificial set-up prepared by the Notifying Parties for the sole purpose of the remedy submission. Package 3 is composed of part of a pre-existing fully vertically integrated cluster, that is to say the LVM Package, and of a business model designed and launched by INEOS irrespective of the Transaction, that is to say the Wilhelmshaven / Runcorn Package. The Commission' own analysis of the Notifying Parties' submission, as well as of INEOS' internal documents, shows that the assets included in Package^o3 and their financial results are viable and can become a competitive force in the market in the hands of suitable buyer.¹⁰⁴⁴

¹⁰⁴² In the Form RM, the Notifying Parties provided a 2013 EBITDA figure of EUR [...]* for the LVM Package. In a subsequent submission, this figure was reduced to EUR [...]*. The Commission considers that the latter figure provides a better proxy to gauge the viability of that business, as it factors in both the removal of the caustic potash business and the future impact of the HCl contract. See Response to RFI of 20 March 2014, Paragraph 2.2 et seq.

¹⁰⁴³ Actual EBITDA for the Wilhelmshaven / Runcorn Package was EUR [...]*. [...]*.

¹⁰⁴⁴ In particular with regard to "Project Bio", see above Recital 1571.

- (1661) The Commission, however, notes that as discussed in Sections 11.4.6.2. and 11.4.6.3. the purchaser would enter or would have the option to enter into a number of agreements with the Notifying Parties. These agreements consist of: (i) as regards LVM, a toll manufacturing agreement for the operation of the mercury electrolysis cellroom and caustic potash business, a toll manufacturing agreement for the production and supply of EDC to the JV, and a supply agreement for the supply of hydrogen and sodium hypochlorite which is produced in the JV mercury electrolysis cellroom; and (ii) as regards Runcorn, a joint venture agreement for the joint operation of the chlorine plants, access agreements for assets necessary for the JV's or the purchaser's operations at Runcorn, but in the ownership of the other party, and, at option of the purchaser, a brine supply agreement and an ethylene supply agreement.
- (1662) In addition, the inclusion in Package 3 of the HCl Agreement and the reverse carve out of the caustic potash business, further increases the complexity of acquiring and managing the Divestment Business [...]*.¹⁰⁴⁵
- (1663) The complexity of those arrangements, and the potential challenges associated with reaching competitive terms with INEOS, could lead to substantial implementation risks, thereby hampering the purchaser's ability to replicate the competitive constraint exerted by Solvay pre-Transaction. This would be particularly the case if the Divestment Business was acquired by a player without proven expertise in the industry. In that regard, the Commission notes that a majority of the respondents to the market test stated that it is important or very important that the purchaser has experience in the petrochemical industry. Competitors have for instance stated that *"The PVC business is a minefield. Even with decent assets and cost prices it is a constant uphill battle"*¹⁰⁴⁶; or that *"Both packages are complex and need both technical and market knowledge to succeed."*¹⁰⁴⁷
- (1664) Moreover, the expertise of the buyer appears crucial for the implementation of adjustments that would be [...]*, such as the implementation of Project BIO referred to in Recital 1571.
- (1665) [...]*.
- (1666) [...]*.
- (1667) The Commission also notes in that regard that the upfront buyer clause included in the Commitments ensures that the Notifying Parties will not close the Transaction before having reached a binding agreement with a buyer approved by the Commission. The risk of implementation, therefore, lies with the Notifying Parties.

¹⁰⁴⁵ In that regard see submission of Tessenderlo Chemie, former owner of LVM, of 31 March 2014 ID6974 and non-confidential version of the minutes of the conference call with Tessenderlo Chemie or 4 April 2014 ID7021, as well as the open letter sent by the Comité d'Entreprise INEOS ChlorVinyls France to the Commissioner Almunia on 2 April 2014 ID6957.

¹⁰⁴⁶ Reply of Kem One to question 38 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6663.

¹⁰⁴⁷ Reply of Shin-Etsu to question 38 - Phase II market test of remedies submitted on 11 March 2014 (competitors) ID6496.

(1668) [...]*,¹⁰⁴⁸ [...]*

(1669) Therefore, the Commission concludes that, based on the overall body of evidence in the file, Package 3 constitutes a viable remedy package, which is in principle capable of replicating the competitive constraint exerted by Solvay pre-Transaction. While the market test has identified a number of potential structural weaknesses and technical complexities, the Commission consider that those do not call into question the viability of Package 3.

(1670) The Notifying Parties have submitted pre-Transaction documents and forecasts, as well as forward-looking estimates, indicating that Package 3 will produce positive financial results (as measured by EBITDA). According to the Notifying Parties, the LVM Package will achieve EBITDA of EUR [...]* in 2014, EUR [...]* in 2015 and EUR [...]* in 2016. The Wilhelmshaven / Runcorn Package as a standalone entity will achieve EBITDA of EUR [...]* in 2014, EUR [...]* in 2015 and EUR [...]* in 2016. INEOS forecasts that the overall Package 3 as a combined business will achieve EBITDA of EUR [...]* in 2014, EUR [...]* in 2015 and EUR [...]* in 2016. According to the Notifying Parties, this improvement will stem from several factors such as the repatriation of sales previously allocated to exports and a moderate recovery of the market for commodity S-PVC. The Commission recognises that the EBITDA of the divested plants and of Package 3 as a whole is likely to increase in the future as a result of a re-orientation of sales from lower-price export markets to higher-price NWE customers, and also due to the expected recovery of the market for commodity S-PVC. These factors are therefore likely to lead to higher profitability figures relative to the notional 2013 figures quoted above at Recital 1586.

(1671) Moreover, the Commission also acknowledges that the Notifying Parties have also made a commitment to sell Package 3 to a [...]* upfront [...]* purchaser [...]*. This provides additional guarantees that Package 3 will be run viably in the long term so as to create a sufficient competitive force in the market, before any harm to competition occurs.

11.4.6.5. Attractiveness of Package 3

(1672) The Commission considers that the inclusion in Package 3 of the HCl Agreement and the reverse carve out of the caustic potash business, may affect the attractiveness of the Divestment business, [...]*. Such inclusion may therefore make it more difficult for the JV to find a suitable purchaser.

(1673) In addition, some of the features of Package 3 discussed in detail in Sections 11.4.6.1 and 11.4.6.2. increase the complexity of the Divestment Business, also potentially affecting its attractiveness.

(1674) [...]*

(1675) [...]*. In those circumstances, an up-front buyer clause can allow the Commission to conclude with the requisite degree of certainty that the commitments will be

¹⁰⁴⁸ This is also recognised by the Notifying Parties in their analysis of the efficiencies brought about by the Transaction.

implemented, as that commitment creates greater incentives for the parties to close the divestiture in order to be able to complete their own concentration.¹⁰⁴⁹

- (1676) The Commission considers that in this case the presence of an upfront buyer clause in the Commitments is sufficient to address the implementation risk, as it shifts such risk on the Notifying Parties, and prevents that any harm to competition occurs before the Divestment Business is sold to a suitable [...] purchaser [...]*.

11.5. Conclusion

- (1677) Therefore, the Commission considers that Package 3 is suitable to remove the competition concerns identified in this Decision. Those Commitments shall be therefore attached to this Decision and made binding on the Notifying Parties. The Commission will take into account the elements discussed in Section 11.4. in the course of the implementation of the Commitments, and at the stage of buyer approval.

- (1678) As regards sodium hypochlorite, all the remedy alternatives submitted by the Notifying Parties will remove all competition concerns, since the divestment of the LVM Package preserves the competitive landscape by removing 100% of the overlap. This is also consistent with the results of the market test.

12. CONDITIONS AND OBLIGATIONS

- (1679) Pursuant to the second subparagraph of Article 8(2) of Regulation (EC) No 139/2004, the Commission may attach to its decision conditions and obligations intended to ensure that the undertakings concerned comply with the commitments they have entered into vis-à-vis the Commission with a view to rendering the concentration compatible with the internal market.

- (1680) The fulfilment of the commitments that give rise to the structural change of the market is a condition, whereas the implementing steps which are necessary to achieve this result are generally obligations on the undertakings concerned. Where a condition is not fulfilled, the Commission's decision declaring the concentration compatible with the internal market is no longer applicable. Where the undertakings concerned commit a breach of an obligation, the Commission may revoke the clearance decision in accordance with Article 8(6) of Regulation (EC) No 139/2004. In addition, the undertakings concerned may also be subject to fines and periodic penalty payments under Articles 14(2) and 15(1) of Regulation (EC) No 139/2004.

- (1681) In accordance with the basic distinction as regards conditions and obligations, this Decision should be made conditional on the full compliance by the Notifying Parties with Section B paragraphs 2,3,4,6 and Section D paragraphs 24 and 25 and all other Sections should be obligations within the meaning of Article 8(2) of Regulation (EC) No 139/2004. The full text of the commitments is attached as Annex C to this Decision and forms an integral part thereof.

¹⁰⁴⁹ See Commission's Notice on Remedies, Paragraph 54.

HAS ADOPTED THIS DECISION:

Article 1

The notified concentration whereby INEOS AG and Solvay SA acquire joint control of a newly established joint venture within the meaning of Article 3(1)(b) and Article 3(4) of Regulation (EC) No 139/2004 is hereby declared compatible with the internal market and the EEA Agreement

Article 2

Article 1 is subject to full compliance by INEOS AG and Solvay SA with the conditions set out in Section B paragraph(s) 2, 3, 4, 6 and Section D paragraphs 24 and 25 of Annex C.

Article 3

Article 1 is subject to full compliance by INEOS AG and Solvay SA with the obligations set out in the remaining Sections and paragraphs of Annex C not referred to in Article 2.

Article 4

This Decision is addressed to

Solvay SA
Rue de Ransbeek, 310
1120 Brussels
Belgium

INEOS AG
Avenue des Uttins, 3
1180 Rolle
Vaud
Switzerland

Done at Brussels, 8.5.2014

*For the Commission
(Signed)
Joaquín ALMUNIA
Vice-President*



ANNEX A

Empirical evaluation of INEOS and Solvay's transaction data, including evidence on the impact of past consolidation in the European S-PVC industry

- (1) This Annex provides an empirical evaluation of the detailed transactions data provided by both Notifying Parties. The purpose of the Annex is to investigate the existence of INEOS' market power pre-merger, and to contribute to the analysis of geographic market definition.
- (2) The empirical evidence presented in this Annex indicates that INEOS pre-merger has a position which, although short of or below dominance, allows it to exercise some degree of market power, as shown in particular by [...]*. Moreover, the results also support the NWE geographic market definition. The main conclusions of this analysis are also contained in the main body of the Decision in sections 9.1.2.8 and 7.2.2.
- (3) Both the evidence on geographic market definition and on pre-existing market power set out in this Annex should be read in conjunction with the qualitative evidence and the evidence on volume changes in NWE contained in the main body of the Decision, in particular in sections 9.1.2.1 to 9.1.2.6 and in sections 9.1.2.9 to 9.1.2.10.
- (4) In Sections 1 and 2 of this Annex three issues are discussed. First, regional sales trends for both Notifying Parties are presented, together with information on annual average prices. NWE quantity and price trends are compared to the corresponding trends in other European countries ("Rest of Europe", or "RoE"¹), and other non-European markets ("Rest of the World", or "RoW"). Second, the price trends of INEOS and Solvay are analysed further by looking at the evolution of the price differential of NWE relative to RoE, Eastern Europe ("EE"²) and RoW. It is shown that from 2007 to 2012 INEOS [...]*. Thirdly, the transportation costs and the evolution of margins over the 2007-2012 period are analysed.
- (6) Overall the descriptive evidence suggests that in the period between 2007 to 2012 [...]*. The descriptive analysis thus indicates that [...]*.
- (7) Sections 3-5 consider the elements presented in Sections 1 and 2 in a rigorous econometric framework in order to draw robust conclusions about geographic market definition and the price effects of the past transactions involving INEOS (i.e. the acquisition of Kerling in 2008 and of Tessenderlo in 2011).

¹ RoE consists of Austria, Finland, Switzerland, Italy, Greece, Portugal, Spain, Malta, Cyprus, Estonia, Latvia, Lithuania, Poland, the Czech Republic, Hungary, Romania, Slovakia, Slovenia, Bulgaria and Croatia.

² EE consists of Estonia, Latvia, Lithuania, Poland, the Czech Republic, Hungary, Romania, Slovakia, Slovenia, Bulgaria and Croatia.

- (8) First, in Section 3, the cumulative price increase in NWE relative to other regions is estimated for Solvay and INEOS jointly, as a proxy for the market price. It is shown that the EEA is not a homogenous market in terms of price formation, because NWE prices have significantly diverged from those in other EEA regions in the period since 2007. The regional differences are even stronger if one looks only at INEOS's pricing behaviour.
- (9) Second, in Section 4, difference-in-differences methods are employed to estimate the price effects of the two past acquisitions by INEOS in NWE. The key finding from this part of the analysis is that [...]*
- (10) Finally, Section 5 addresses the key elements of the critique presented by the Notifying Parties in their Response to the Statement of Objections and in an additional economic memorandum on the Commission's empirical analyses submitted after the Response on 17 March 2014. The issues discussed in Section 5 relate to the use of placebo tests, the suitability of deterministic linear trends, and sensitivity of the results to modifications of the control sample. Other comments of the Notifying Parties are answered at the relevant parts of Section 4 of this Annex.

1. DESCRIPTION OF THE DATA

- (11) The following data was made available by the Notifying Parties:
 - a) Transaction-level sales data of both Notifying Parties for 01.2007-04.2013; containing information on invoice values, sold quantity, costs (for Solvay), INCO-terms, customer name and location, plant name, K-value and date of the transaction.
 - b) Transaction-level sales data of Vinyls Italia for 2007 and 2008; containing information on invoice values, sold quantity, customer name and country, plant name, K-value and date of the transaction.
 - c) Cost data for INEOS by month and plant.
 - d) Full-chain margin data by month and plant of both Notifying Parties, sourced from the INEOS management accounts and Solvay's transaction-level sales data.
- (12) The Solvay transaction-level sales data is not consistent for the full sample period: there is one subset that is consistent for the 01.2007-12.2012 period and one that is consistent for the 01.2010-04.2013 period. The longer 01.2007-12.2012 dataset was used in the analysis, because it covers both past mergers.
- (13) The Vinyls Italia data was not used in the ex-post evaluation exercise, because it does not contain cost and detailed customer location information.
- (14) For the purposes of the analysis in this Annex the transaction, cost and full-chain margin data of the Notifying parties was combined in a joint dataset. Transactions were aggregated to monthly level, so that the variables month, merging party, customer name, customer location, plant and K-value define the unit of observation in the dataset. This dataset was shared with the Notifying Parties on 06.12.2013, before the issuance of the Statement of Objections.

2. DESCRIPTION OF THE S-PVC MARKET TRENDS

1) *Yearly quantities and prices*

- (15) Table 1 below shows the annual sales volumes and prices for different cohorts of plants, by region during the period 2007-2012.³ Splitting the current INEOS' portfolio by cohort is necessary in order to evaluate the impact of INEOS' acquisition of each of these assets. The different plant cohorts include the plants of Solvay located in NWE (Jemeppe, Rheinberg and Tavaux), the cohort of plants owned by INEOS in 2007 (Barry, Runcorn, Schkopau and Wilhelmshaven), the Kerling plants acquired by INEOS in 2008 (Aycliffe, Porsgrunn, Stenungsund), and the Tessenderlo plants acquired in 2011 (Beek and Mazingarbe). For all of these cohorts except for the Tessenderlo plants, data is available throughout the 2007-2012 period. For the Tessenderlo plants, data is available for 2011 and 2012.

³ This table, along with all the figures presented in the Annex, is based on the merchant market sales data of the Notifying Parties and reflects also additional data cleaning that reduces the total volumes used in the econometric analysis. In contrast in the main body of the Decision uses total merchant market and internal sales volumes to analyse overall volume trends. Trends are very similar across the two measures of volumes.

Table 1 Sales volumes (kt) and delivered prices (€/tonne) by region

		2007	2008	2009	2010	2011	2012
Solvay NWE cohort							
<i>NWE</i>	<i>Price</i>	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	<i>Volume</i>	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Rest of Europe	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
RoW	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Total	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Ineos 2007 cohort							
<i>NWE</i>	<i>Price</i>	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	<i>Volume</i>	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Rest of Europe	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
RoW	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Total	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Kerling cohort							
<i>NWE</i>	<i>Price</i>	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	<i>Volume</i>	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Rest of Europe	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
RoW	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Total	Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Volume	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessengerlo cohort							
<i>NWE</i>	<i>Price</i>					[...]*	[...]*
	<i>Volume</i>					[...]*	[...]*
Rest of Europe	Price					[...]*	[...]*
	Volume					[...]*	[...]*
RoW	Price					[...]*	[...]*
	Volume					[...]*	[...]*
Total	Price					[...]*	[...]*
	Volume					[...]*	[...]*

Source: Notifying Parties' data

- (16) The descriptive data on annual volumes shown in Table 1 indicates that for each cohort [...]*.

- (17) [...]*
- (18) By contrast, over the 2007-2012 period [...]*. Since Solvay faced the same reduction in demand in NWE, the demand shock of the crisis cannot on its own explain why [...]*
- (19) Moreover, the yearly price trends reveal that [...]* in NWE between 2007 and 2012, while in RoE and RoW [...]*. If the demand shock would have been the strongest in NWE then, assuming constant supply conditions, the largest price decreases should have been observed in NWE as well.
- (20) The evidence on differences in relative patterns of NWE sales and exports, and the implications for the assessment of pre-existing market power by INEOS, is presented more extensively in sections 9.1.2.9 to 9.1.2.10 of the Decision.

2) *Monthly price differences across regions*

- (21) To explore relative price differences further, this section compares INEOS and Solvay's delivered prices in NWE to delivered prices in RoE, RoW and EE. Although EE is contained in RoE, the industry often considers it as a separate region, therefore it is added as a separate comparison group as well.⁴ Moreover, for the purposes of the econometric estimations that are presented below, EE is a relevant candidate control group to consider.
- (22) Figure 1 shows the monthly evolution of INEOS' prices in all four regions from 2007 to 2012. The vertical axis shows prices per tonne in euros and the two vertical lines show the merger events INEOS/Kerling and INEOS/Tessenderlo.⁵

Figure 1: Delivered prices for INEOS, by region (€/tonne)

[...]* *Source: Notifying Parties' data*

- (23) [...]*
- (24) Figure 2 transforms the series in Figure 1 into regional differences and shows the monthly evolution of INEOS' price differences between NWE and other regions from 2007 to 2012. The vertical axis shows price differences per tonne in euros. Table 2 summarises how these regional differences changed after the merger events and over the entire period.

Figure 2 INEOS' prices in NWE relative to other regions (€/tonne)

[...]*

Table 2: Cumulative change of INEOS' prices in NWE relative to other regions

Price change after:	Benchmark region		
	RoE	RoW	EE
INEOS/Kerling	[...]*	[...]*	[...]*
INEOS/Tessenderlo	[...]*	[...]*	[...]*

Source: Notifying Parties' data

⁴ See for instance the IHS Chemical World Analysis - Vinyls for 2013 and 2014.

⁵ The clearance decision of the Commission for Kerling was granted on January 2008 and for Tessenderlo on July 2011.

- (25) Differences between INEOS' prices in NWE and the other three regions demonstrate the trend shown from the annual price data in an even clearer fashion. Depending on the region chosen for comparison INEOS' prices in NWE [...] and [...] (reaching a cumulative change of [...] relative to ROE, and of [...] relative to EE).⁶
- (26) Moreover, the data indicates a marked difference between the RoE/EE and RoW price comparisons. On average NWE prices were [...] than RoW prices throughout the sample period. This difference started to increase most notably after mid-2011. In addition, NWE-RoW differences are much more volatile, suggesting significant differences across these two markets.
- (27) Figure 3 and Figure 4 show the monthly regional price evolution and the regional price difference evolution for Solvay. Similarly, Table 3 summarises for Solvay the change in the regional price differences after the two mergers.

Figure 3 Delivered prices for Solvay, by region (€/tonne)

[...]*

Source: Notifying Parties' data

Figure 4 Solvay prices in NWE relative to other regions (€/tonne)

[...]*

Source: Notifying Parties' data

Table 3: Cumulative change of Solvay prices in NWE relative to other regions

Price change after:	Benchmark region		
	RoE	RoW	EE
INEOS/Kerling	[...]*	[...]*	[...]*
INEOS/Tessenderlo	[...]*	[...]*	[...]*

Source: Notifying Parties' data

- (28) The Solvay price trends summarised in the figures above suggest some clear differences compared to INEOS. [...]*.
- (29) [...]*.
- (30) As shown in paragraphs (16) and (17), [...]*. In order to see whether INEOS [...] in NWE relative to other regions more than Solvay, the difference of the regional price differences across the two Notifying Parties has to be calculated. The advantage of such a comparison is that any demand trend in NWE and the comparison region is differenced away and thus controlled for. Nonetheless, such a regional-firm difference should be zero in a truly homogenous good market. Therefore any non-

⁶ In this section percentage price changes after the INEOS/Kerling merger are calculated by dividing the price increase in the period between the two mergers with the average price before the INEOS/Kerling merger. The percentage change after the INEOS/Tessenderlo merger was calculated by dividing the price increase in the period after the merger with the average price of the period between the two mergers.

zero difference is an indication of horizontal differentiation between competitors. Given the features of the S-PVC market as described in the main body of the Decision and in particular in the Section dealing with geographic market definition, the most likely source of horizontal differentiation in the S-PVC market is due to locational differences across suppliers' plants.

- (31) As explained Figure 5 below plots the difference of the regional differences across the two Notifying Parties, i.e. the price differences of INEOS in NWE relative to two comparison groups (ROE and ROW) and further subtracting the same price differences for Solvay.

Figure 5 INEOS-Solvay price difference in NWE relative to other regions (€/tonne)

[...]*

Source: Notifying Parties' data

- (32) Comparing INEOS' and Solvay's price increases in NWE relative to other regions reveals that INEOS prices [...]*. This mirrors and is consistent with the finding about the evolution of relative quantities, which shows that [...]*. The evidence on relative prices indicates that the output behaviour can be associated with [...]*, and the exercise of market power. This issue is assessed in more details in the econometric analysis presented in Sections 3-5 of this Annex.
- (33) In conclusion, the descriptive evidence on prices and quantities based on the Notifying Parties' detailed transaction data shows that after the two past transactions involving capacity in NWE [...]*.
- (34) Homogenous conditions of competition in a given geographic area should result in similar prices prevailing within that area. Evidence of diverging relative regional prices between different areas therefore provides a strong indication of heterogeneous conditions of competition (due to different demand and/or supply conditions) and thus separate relevant geographic markets. The evidence presented above therefore suggests that NWE is a separate relevant geographic market from the rest of Europe.⁷

3) Transportation costs and Margins

- (35) This last descriptive section of the Annex briefly presents the information on transportation costs and on margins that is contained in the transactions data provided by the Notifying Parties. This helps to inform two aspects of the Commission's assessment contained in the main text of the Decision (Sections 7.2.4-7.2.5 and Section 9.1.2.11).

Transportation costs

- (36) Transportation costs by distance are shown in

⁷ Market Definition Notice, Paragraph 7.

- (37) Table 4 for the International Commercial Terms categories CFR, CIF, CIP, CPT, DAP, DDP, DDU.⁸ 99% of all deliveries in the EEA are transported up to 1100km. Transportation cost data is available for INEOS on a consistent basis only for the period 2010-2012.
- (38) The transportation cost data shows that these costs are significant:
- a) Transportation costs increase with distance and reach a maximum of [...] * EUR/tonnes for INEOS and [...] * EUR/tonnes for Solvay. These figures are equivalent to approximately [...] *% of the average S-PVC price and [...] *% (INEOS) to [...] *% (Solvay) of the average full chain margin in the same year.
 - b) Transportation costs are on average higher for shipments to RoE than to NWE.
 - c) INEOS has on average [...] * transportation cost in respect of the same distance.

⁸ In line with the comments made by the Notifying Parties in their Response to the Commission's Statement of Objections the calculation of the transportation cost variable was changed.

Table 4 Transportation costs

	RoE	NWE
	2010-2012	
km	Ineos	
100		[...]*
300	[...]*	[...]*
500	[...]*	[...]*
700	[...]*	[...]*
900	[...]*	[...]*
1100	[...]*	[...]*
	[...]*	[...]*
Average	[...]*	[...]*

km	Solvay	
100	[...]*	[...]*
300	[...]*	[...]*
500	[...]*	[...]*
700	[...]*	[...]*
900	[...]*	[...]*
1100	[...]*	[...]*
	[...]*	[...]*
Average	[...]*	[...]*

Source: Notifying Parties' data

Margins

- (39) In order to assess profitability the S-PVC margins have to be looked at in conjunction with the caustic soda margins, because these products are effectively produced together and the two products are part of the same value chain.⁹ Caustic soda margins are treated as a negative cost element in the subsequent analysis and are assumed to reduce uniformly the cost of each tonne of S-PVC sold in a given month. Variable manufacturing costs of S-PVC on the contrary are plant specific.
- (40) Margins for INEOS during the 2007-2009 period are likely to have been [...]* than the figures presented below. This is because there is a break in the transportation cost series in 2010 for the Barry, Runcorn, Schkopau and Wilhelmshaven plants: [...]*.¹⁰
- (41) Table 5 shows the yearly S-PVC, NaOH and full chain margin per tonne of S-PVC as well as the S-PVC price for both Notifying Parties by regions. Regional margins are calculated for S-PVC by subtracting plant specific manufacturing costs and

⁹ See Section 6.2 of the Decision.

¹⁰ The Notifying Parties have confirmed to the Commission that transportation costs in the INEOS dataset underestimate actual transportation costs for 2007-2009 (see Reply to RFI of 14 November 2013; email to Notifying Party's economic advisors on 03.12.2013; and emails from Notifying Party's economic advisors on 12.12.2013 and 08.01.2014).

customer specific transportation costs from delivered prices for each observation in the sample and calculating the weighted average of this margin for each region using the S-PVC volume of the observations as the weight. Solvay's S-PVC margin contains all the chlorine and EDC margins.¹¹ Monthly NaOH margins are calculated globally for each Notifying Party.

- (42) The Commission's yearly regional margin calculations reflect how prices and costs are aggregated in the regression estimation. These differences were shared and discussed with the Notifying Parties.¹² In line with the comments made by the Notifying Parties in their Response to the Commission's Statement of Objections no caustic margins are allocated for sales made by Schkopau. This implies that the vertically integrated part of INEOS has higher margins (in 2012 the difference was approximately [...] * EUR/tonne in NWE and [...] * EUR/tonne in RoE) than the margins presented in Table 5.

¹¹ The definition of these intermediate margins and their contribution to the full chain margin was provided in the 06.08.2013 submission of the Notifying Parties.

¹² Email to CRA 03.12.2013 and 05.12.2013; email from CRA 06.12.2013; email from CRA 13.12.2013;

Table 5 Margins of S-PVC for INEOS and Solvay by region (€ per tonne)

		2007	2008	2009	2010	2011	2012
RoW							
INEOS	SPVC margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	NaOH margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Full chain margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	SPVC Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
		[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Solvay	SPVC margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	NaOH margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Full chain margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	SPVC Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Rest of Europe							
INEOS	SPVC margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	NaOH margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Full chain margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	SPVC Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
		[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Solvay	SPVC margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	NaOH margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Full chain margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	SPVC Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
NWE							
INEOS	SPVC margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	NaOH margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Full chain margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	SPVC Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
		[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Solvay	SPVC margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	NaOH margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Full chain margin	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	SPVC Price	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Source: Notifying Parties' data

- (43) In NWE the full chain margin [...]*. This trend is largely due to the caustic soda margin evolution, because [...]*. Solvay's margins [...]*. In 2012 the full chain margin was [...]*% of the S-PVC price for INEOS and [...]*% for Solvay.¹³ Margins are discussed in detail in section 9.1.2.11 of the main text of the Decision.

¹³ One cannot compare the level of margins across the Notifying Parties directly because their fixed cost allocation might differ significantly.

3. EVIDENCE ON GEOGRAPHIC MARKET DEFINITION

- (44) This section employs regression analysis to confirm the diverging price trends between NWE and other regions that were identified by the descriptive statistics. The average price increase of the Notifying Parties is estimated for the 2007-2012 period. Both INEOS and Solvay price data is used for these estimations in order to approximate the market trend. As shown price divergence is even stronger if one looks at [...]*
- (45) The advantages of the regression-based estimation compared to a simple price comparison are the following:
- the estimation focuses on price changes within homogenous units and therefore does not confuse composition effects with increasing prices at the customer level;
 - the estimation controls for changes in costs and transportation mode;
 - clustered standard errors allow for robust statistical inference.
- (46) For RoW it is not possible to carry out reliably the same rigorous comparison as for the regions within the EEA. Therefore the results for RoW should be interpreted cautiously. The reasons for the unreliability of the estimation for RoW are the following:
- there are relatively fewer observations for RoW;
 - the customer pool changes rapidly in RoW. Therefore, the fixed effects that control for composition effects will also capture the general time trends in prices;
 - the identifiers are not of the same quality for RoW and the EEA regions.
- (47) The regression specification is the following:

$$\begin{aligned} price_{it} = & \alpha + \beta_1 NWE_{it} \times postKerling_{it} + \beta_2 NWE_{it} \times postTessenderlo_{it} + \\ & + \gamma_1 costs_{it} + \sum_j \gamma_{2j} INCO_{jit} + d_t + u_i + e_{it} \end{aligned} \tag{1}$$

- (48) In specification (1) i indexes the cross-section units defined by customer name, customer location, K-value and plant, while t indexes months between January 2007 and December 2012. The $price_{it}$ is calculated as the net invoice value divided by the sold volume; $costs_{it}$ is the variable manufacturing cost minus the caustic soda margin per tonne of S-PVC and the $INCO_{jit}$ -s are the indicator variables for the different INCO-term categories (taking the value of 1 for a given INCO-term and 0 otherwise). The $NWE_{it} \times postTessenderlo_{it}$ variable shows how differently prices changed from 2007 to the post Tessenderlo period in NWE compared to the reference region. This variable takes the value of 1 for the observations in NWE for the period after the INEOS/Tessenderlo clearance (July 2011) and 0 otherwise. The $NWE_{it} \times postKerling_{it}$ variable captures the same divergence comparing the post-

Kerling (clearance in January 2008) but pre-Tessenderlo period to 2007. Since the cumulative divergence for the full period is of interest only the $NWE_{it} \times postTessenderlo_{it}$ estimates are reported. The d_t -s are the monthly time effects and the u_i -s are the customer, location, K-value and plant specific fixed effects, while e_{it} is an *i.i.d.* disturbance term. Other parameters that are estimated by the regression are: α a general constant; γ_1 that captures the differential effect of a plant specific cost change on top of the average monthly cost shock; and γ_2 that captures the price difference due to the difference in the delivery mode.¹⁴

- (49) Table 6 reports the results of the estimation of (1) for NWE. Prices in this region are compared to three other regions: RoE, EE and RoW. The estimated parameters express the cumulative price divergence in euros.
- (50) Table 7 reports the estimation of (1) for the broader definition of NWE assessed in the Decision ("NWE+"), which includes also Austria, Finland, Italy and Switzerland. In this table RoE is defined differently than in the NWE regression reported in Table 6, because these four countries are effectively moved from the original definition of ROE to the revised definition of NWE (i.e. a "RoE-"definition is adopted).
- (51) The results from these regressions indicate that relative to the 2007 average NWE prices [...] in NWE by [...] to [...] compared to RoE and EE. The results for NWE+ show an [...] to [...] for the same period compared to the average NWE+ price in 2007.
- (52) Results for NWE confirm the conclusions of the descriptive analysis and show that from 2007 to 2012 prices in NWE [...] compared to other EEA regions.
- (53) This price divergence is consistent with the fact that there is no price arbitrage across NWE and the Rest of Europe or Eastern Europe. As described above in paragraph (34) this indicates a lack of homogeneity conditions between these regions. The regressions are repeated for INEOS prices only as well in Table 8 and these results show [...].¹⁵
- (54) In conclusion, the quantitative evidence suggests that these markets should be considered as separate geographic markets and in particular NWE should be considered as a separate relevant geographic market.
- (55) Results are less conclusive for the RoW, because i) prices relative to NWE are more volatile; ii) the changing customer pool is less suited for the fixed effects-based comparison; and iii) differential demand trends are not controlled for, making it difficult to draw inferences from the lack of significant price divergences.

¹⁴ The regressions in the SO included a term for the Tessenderlo plants in order to correct for the average price difference between these plants and other INEOS plants. This term is dropped in the specification shown in this Annex, because the fixed effects achieve the same correction in a more parsimonious way.

¹⁵ The Notifying Parties in their Response question the difference-in-difference results that inform about the price divergence for INEOS. While the Commission maintains the difference-in-differences results, the simple price divergence estimates are presented for the INEOS data for the sake of completeness.

- (56) Finally, the estimated price increases for NWE+ are very close to the NWE estimates when the control region is EE. Conversely, the estimated price increase is larger for NWE+ when control region is RoE. These two results indicate that in terms of price developments Italy, Switzerland, Austria and Finland are more similar to NWE rather than to RoE. When the regressions are repeated for INEOS prices only, [...]*
- as Table 9 shows.

Table 6 Cumulative price increase in NWE compared to other regions, EUR, Solvay and INEOS prices

	(1)	(2)	(3)	(4)	(5)	(6)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city	customer, city
Control group	RoE	EE	RoW	RoE	EE	RoW
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Price increase from 2007 to post-Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Table 7 Cumulative price increase in NWE+ compared to other regions, EUR, Solvay and INEOS prices

	(1)	(2)	(3)	(4)	(5)	(6)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city	customer, city
Control group	RoE	EE	RoW	RoE	EE	RoW
Price increase from 2007 to post-Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Table 8 Cumulative price increase in NWE compared to other regions, EUR, INEOS prices

	(1)	(2)	(3)	(4)	(5)	(6)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city	customer, city
Control group	RoE	EE	RoW	RoE	EE	RoW
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Price increase from 2007 to post-Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Table 9 Cumulative price increase in NWE+ compared to other regions, EUR, INEOS prices

	(1)	(2)	(3)	(4)	(5)	(6)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city	customer, city
Control group	RoE	EE	RoW	RoE	EE	RoW
Price increase from 2007 to post-Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW	Inco terms, time effects	Inco terms, time effects	Inco terms, time effects, seasonal effects for RoW
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

4. EVIDENCE ON INCREASED MARKET POWER AFTER PAST CONSOLIDATIONS

4.1. Ex-post assessment of the previous transactions

- (57) This section of the Annex assesses whether prices increased after the previous two mergers of INEOS. The outcome variable of interest in the empirical analysis is the delivered price of INEOS. Prices are derived from invoices by dividing the net invoice value with the delivered volume of S-PVC. Prices are observed monthly for a given customer purchasing a given k-value S-PVC resin from a given plant of either Solvay or INEOS. Customers are identified by their name and location.
- (58) Sections 1 and 2 showed that the mergers were followed by [...]*. Moreover, [...]*. In addition, the qualitative evidence presented in the main body of the Decision shows that INEOS [...]*. In order to provide further evidence on the causal link between the mergers and [...]*, the econometric analysis extends the descriptive analysis of price changes following the past mergers. In particular it controls for the evolution of costs, delivery mode, composition effects, construction market trends, asymmetric effects of the financial crisis and assesses the uncertainty of the findings by estimating standard errors.
- (59) The ex-post price changes are assessed using a standard difference-in-differences methodology that compares price changes of the merging firms relative to a benchmark before and after the merger. After a merger prices can change for various reasons and not only because INEOS may be exercising some degree of market power. One influencing factor could be the adverse demand shock due to the economic crisis. Therefore ex-post price changes of INEOS have to be evaluated relative to a benchmark that was affected by the same influencing factors except for the mergers. In the analysis presented below, first INEOS's prices outside NWE are used as a benchmark against which to evaluate potential price effects in NWE. Next, in order to further control for differential demand trends across different regions, INEOS's relative price changes in NWE are benchmarked against Solvay's relative price changes.
- (60) The Notifying Parties responded in detail to the Commission's Annex A of the Statement of Objections in Annex 01 of their Response to the Commission's Statement of Objections (hereafter Response). The Notifying Parties submitted an additional economic memorandum on the Commission's empirical analyses after the Response on 17.03.2014 (hereafter Memo).¹⁰⁶⁵
- (61) The Notifying Parties put forward six arguments in the Response and in the Memo supporting their conclusion that "the Commission's difference-in-difference analyses are not robust, they are not informative about what effect, if any, the Tessengerlo merger had on INEOS's prices in NWE". The parties claim that

¹⁰⁶⁵ In the context of the Memo, the Notifying Parties attribute to the Commission a number of statements that would have been made by the case team during the meeting of 03.03.2014. For the sake of clarity, those statements - as reported by the Notifying Parties - are either factually incorrect or incomplete and do not represent the Commission's position, which was exclusively detailed in the context of the SO (along with its Annexes) and has not changed since then, except for taking into consideration the arguments made the Notifying Parties in their Response to the SO and following submissions.

- a) The Commission's empirical method fails standard "placebo tests", therefore the fundamental assumption of the Commission's empirical method does not hold.
 - b) Adding parametric time trends reduces estimated price effects, implying that the Commission's empirical method cannot distinguish the effect of the mergers from other reasons for price divergence.
 - c) The estimated Tessengerlo effect changes with the exclusion of one Greek customer and therefore the difference-in-differences is sensitive to small changes in the control group.
 - d) Eastern Europe is the more appropriate control group and even the Commission's most robust ('financial crisis') specification fails the tests if this control group is used.
 - e) The fact that the Kerling effect cannot be differentiated conceptually from a possible financial crisis effect shows that the Commission's empirical method is sensitive to other events that occurred during the sample period.
 - f) The Commission's 'triple diff' method is sensitive to the choice of weights and price effects are substantially reduced if no weights are used.
- (62) Arguments (1) to (3) of the Notifying Parties are addressed in Section 5 of this Annex, while arguments (4) to (6) are addressed at the relevant parts of this section.

4.2. The difference-in-differences method: treatment and control groups

- (63) The difference-in-differences method compares transactions that were affected by the past mergers with transactions that were not affected by them. The affected transactions form the treatment group, while non-affected ones form the control group. The difference-in-differences method estimates merger effects by calculating how the average price difference of the treatment and control groups changed after the merger. Therefore the difference-in-differences method looks at changes in relative prices similarly to the relative price comparisons of Sections 1 and 2 of this Annex.
- (64) The advantage of the difference-in-differences method is that it allows for correlation between the treatment status and the outcome variable (the price) as long as this correlation depends only on non-time varying factors and a common trend between the treatment and the control group. For mergers this is crucial, because treatment status (whether a firm is involved in a merger) clearly depends on prices. The difference-in-differences methodology is used extensively in ex-post merger evaluation.¹⁰⁶⁶
- (65) The treatment group is defined on a geographic basis as INEOS transactions in NWE, because both the INEOS/Kerling and the INEOS/Tessengerlo mergers

¹⁰⁶⁶ Examples include: Hastings, J. (2004), Vertical Relationships and Competition in Retail Gasoline Markets: Empirical Evidence from Contract Changes in Southern California, *American Economic Review* 94, pp. 317-328., Taylor, C. and Hosken, D. (2007), The Economic Effects of the Marathon-Ashland Joint Venture: The Importance of Industry Supply Shocks and Vertical Market Structure, *Journal of Industrial Economics* 55, pp. 419-451. Ashenfelter, O. and Hosken, D. (2008), The Effect of Mergers on Consumer Prices: Evidence From Five Selected Case Studies, NBER Working Paper No. 13859., Hunter, G., Leonard, G. and Olley, S. (2008): Merger Retrospective Studies: A Review, *Antitrust*. 23, pp. 34-41.

involved parties with plants located in NWE and there is evidence on the importance of location.¹⁰⁶⁷

- (66) In order to test the sensitivity of the treatment group assumption also a "NWE+" definition is used that contains Austria, Finland, Italy and Switzerland in addition to the NWE countries.
- (67) The control group is assumed to represent how the treatment group would have behaved had the merger not happened. Comparison to this benchmark leads to valid causal inference if the control group follows the same trend as the treatment group and the characteristics of the two groups are similar.
- (68) The control group is also defined on a geographic basis: INEOS transactions in RoE (all countries in the EEA outside NWE plus Switzerland). Therefore the difference-in-differences estimator makes a regional relative price comparison: it shows how much INEOS's prices increased in NWE compared to RoE after the merger. The estimates can be interpreted as merger effects if RoE is a valid control group.¹⁰⁶⁸ RoE is a potentially suitable control group candidate in the sense that RoE and NWE are part of the same economic area and share broadly the same macro cycle and economic shocks from the crisis.
- (69) The RoE control group might also be affected by the mergers to some extent. This is particularly the case since all observations are transactions of INEOS (i.e. the acquiring party in both the Kerling and Tessengerlo transactions). However, as long as RoE and NWE were affected by the past mergers in the same way, this will only bias the results towards zero. This means that comparison based on RoE will most likely underestimate the merger effects.
- (70) In order to test the sensitivity of the results to the control group definition, EE is used as an alternative control group. The aim of this sensitivity is to see whether changes to the control group produce significantly different results.
- (71) Suitable control groups have to satisfy the common trend assumption. For the regional treatment and control group definition this requirement implies that NWE, RoE and EE should follow the same trends. In order to check the suitability of RoE and EE as a control group Figures 6 to 9 illustrate the demand evolution of the EEA regions in absolute and relative terms, based on demand data provided by the Notifying Parties.¹⁰⁶⁹ These yearly demand trends confirm that RoE is a suitable control group, because its demand trend is essentially parallel to that of NWE.¹⁰⁷⁰ Since changing demand is the main unobserved factor in the estimation, the parallel demand trends indicate that the parallel unobserved trend assumption of the difference-in-differences methodology is reasonable. The relative demand reduction

¹⁰⁶⁷ See Section 7.2 in the main body of the Decision on geographic market definition.

¹⁰⁶⁸ As noted above, in the sensitivity analysis that considers the NWE+ treatment group, ROE is defined as excluding Austria, Finland, Italy and Switzerland (this is denoted as ROE-).

¹⁰⁶⁹ Data used in the INEOS presentation "ChlorVinyls Latest View 2013 & Budget Proposal 2014", and provided by the Notifying Parties to the Commission (Response to RFI of 11 December 2013).

¹⁰⁷⁰ The Notifying Parties in their Response criticise the use of demand trends on the basis that they provide only indirect evidence on the common trend assumption. The Notifying Parties suggest to test the common trend assumption on prices directly. The Commission considers that demand trends can be informative about the validity of the common trend assumption for both the pre- and post-merger periods. Tests based on the prices directly can only be implemented for the pre-merger period and therefore can inform the validity of the common trend assumption only for this period.

in NWE+ during the 2007-2012 period is actually sharper than the one observed in RoE-.¹⁰⁷¹

- (72) The demand figures also show that the demand trend in EE differs from that of RoE and NWE: demand declined less in EE. This has two implications. First, it suggests that EE might not be representative of the broader RoE control group. Second, it indicates that the common trend assumption might not hold for EE.¹⁰⁷² Therefore the Commission does not base causal inference on the EE results. The Commission uses EE only to test the sensitivity of the RoE estimates to changes in the control group definition.

Figure 6 Absolute demand trends in NWE, RoE and EE, kilotonnes

[...]*

Source: Notifying Parties' data

Figure 7 Relative demand trends in NWE, RoE and EE, 2007=100%

[...]*

Source: Notifying Parties' data

Figure 8 Absolute demand trends in NWE+, RoE- and EE, kilotonnes

[...]*

Source: Notifying Parties' data

Figure 9 Relative demand trends in NWE+, RoE- and EE, 2007=100%

[...]*

Source: Notifying Parties' data

- (73) The Notifying Parties suggest in their Response and Memo that RoE is not an appropriate control group for two reasons. First, the Notifying Parties claim that RoE is heterogenous, subject to different shocks and therefore cannot be an appropriate control group. Second, the Notifying Parties claim that since EE seems to follow a different macro trend than NWE and is not a suitable control group to draw causal inference, RoE cannot be an appropriate control group either (as it encompasses EE).
- (74) The Commission notes that the identifying assumption of the difference-in-differences method is the common trend assumption. This requires that the treatment and control groups should be similar enough to draw causal inferences. More, precisely the treatment and control groups should follow the same trend. Homogeneity within the control group is not an identifying assumption of the difference-in-differences. The fact that the control group is heterogeneous does not imply that it is more likely to follow a differential trend compared to the treatment group. Therefore, the Commission does not find the first claim of the Notifying Parties to be well founded.

¹⁰⁷¹ RoE- consists of Greece, Portugal, Spain, Malta, Cyprus, Estonia, Latvia, Lithuania, Poland, the Czech Republic, Hungary, Romania, Slovakia, Slovenia, Bulgaria and Croatia.

¹⁰⁷² The placebo tests performed by the Notifying Parties for EE in Section 6 provide additional support for the possible failure of the common trend assumption for EE.

- (75) The Commission also notes that RoE can be a valid control group even if EE follows a different macro trend than NWE. EE is not a random sample from RoE. As a consequence, it represents one specific part of the RoE price distribution and is not representative of the RoE sample as a whole. Moreover, there are examples in the economic literature when valid control groups are created from control groups that violate the common trend assumption.¹⁰⁷³ Therefore, the Commission rejects the second claim of the Notifying Parties.

4.3. The triple differences methodology

- (76) In general, relying on geographically-defined control groups may be sensitive to the existence of potentially separate unobserved trends in the treatment and control regions. Differential trends violate the difference-in-differences' common trend assumption and therefore could lead to inconsistent estimates. Although the demand trends in NWE and RoE, described in paragraph (69), provide evidence that demand trends are the same across the treatment and control regions, also a second comparison strategy is employed to address this issue.
- (77) A "triple differences" method is employed: on top of taking the price difference of INEOS across regions, Solvay price trends are also subtracted from INEOS prices in each region to control for differential demand trends. This method eliminates all region specific common changes from the price effects. Therefore, the triple differences method will likely remove any additional differential trend and decrease substantially the risk of violating the common trend assumption.¹⁰⁷⁴
- (78) The simple difference-in-differences estimator and the triple differences estimator differ in the following aspects:
- a) The outcome variable. The difference-in-differences estimator uses the price of INEOS in NWE, while triple difference estimator uses the INEOS price premium over Solvay in NWE.
 - b) The benchmark used for the outcome variable in the absence of the merger. The difference-in-differences estimator uses the price of INEOS in RoE as a benchmark, while triple difference estimator uses the INEOS price premium over Solvay in RoE.
- (79) The triple differences method, however, is likely to underestimate the true merger effect significantly, because the mergers' overall effect on prices in the affected S-PVC market is also differenced away. In particular, any upward impact on Solvay's prices due to the exercise of market power by INEOS post-merger would be removed from the measured merger effects. In this sense this method relies on INEOS' excess market power compared to Solvay, which is likely to be the result of geographic product differentiation (that is, customers that are close to the assets affected by each transaction suffer from a bigger loss of competition and a resulting price increase

¹⁰⁷³ Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. "Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program." *Journal of the American Statistical Association* 105.490 (2010).

¹⁰⁷⁴ Examples for the use of the triple difference estimator in the economic literature include Gruber, Jonathan. The incidence of mandated maternity benefits. *The American Economic Review* (1994): 622-641 and David S. Kaplan, Eduardo Piedra, Enrique Seira, Entry regulation and business start-ups: Evidence from Mexico, *Journal of Public Economics*, Volume 95, Issues 11–12, December 2011, Pages 1501-1515.

than customers that are further away from these assets).¹⁰⁷⁵ Therefore, this estimator is conservative in terms of the size of the price effect: it gives a lower bound that can be well below the actual effect. The advantage of this estimator is that it produces particularly strong evidence for the existence of the price effect of the merger.

4.4. Regression framework for the difference-in-differences

- (80) The difference-in-differences methodology is implemented in a regression framework, with price as the dependent variable. Since repeated observations are recorded for the same customer a two-way fixed effect panel model is chosen. Fixed effects are assigned to the units defined by the customer name, customer location, plant and k-value and time effects are defined for each month. In this specification the estimated coefficient of the interaction of the control group identifier (1 for control group transactions and zero otherwise) and the merger date indicator (1 for the months after the merger clearance date and zero before) is the difference-in-differences estimate.
- (81) The fixed effect panel regression has the following advantages:
- (a) The customer, customer location, k-value and plant fixed effects define homogenous units. Merger effects are estimated from the price changes within these units. Therefore the methodology and consequently the evaluation of the merger price effect are clean of composition effects. For example if the customer pool of INEOS changes after a merger the price change related to this change in composition is not included in the merger effect. The same is true for k-values and plants. Only price changes within the same homogenous units are used to identify price effects of the merger. Controlling for compositional effects is especially important in the present case since the transaction-level invoice panel dataset is heavily unbalanced.
 - (b) Any time invariant customer-specific demand effect and plant-specific supply effect is controlled for and thus also removed from the estimated price effects.
 - (c) Controls for time-varying costs and delivery mode (INCO-terms) variables are included. Therefore any cost or delivery mode change is accounted for and thus also removed from the estimated price effects.
- (82) The specification for the simple difference-in-differences, with the INEOS-NWE treatment group and INEOS-RoE control group is the following:¹⁰⁷⁶

¹⁰⁷⁵ Solvay's prices should be expected to also have been positively influenced by the exercise of some degree of market power by INEOS. This is because in an oligopolistic market, a price increase and an output reduction by a given competitor (e.g. following a merger) should be expected to result in an increase in both price and output by its rivals. In economic terms, this effect is typically described as "strategic complementarity", and it characterises price competition with horizontally differentiated goods. In the specific context of the S-PVC commodity market, geographical differentiation between different competitors (i.e. different plant locations) adds an element of horizontal differentiation, which can account for the evidence of strategic complementarity in prices. This effect is described at Paragraph 24 of the Horizontal Merger Guidelines, that states that "*Non-merging firms in the same market can also benefit from the reduction of competitive pressure that result from the merger, since the merging firms' price increases may switch demand to the rival firms, which, in turn, may find it profitable to increase their prices*". The evidence on Solvay's output behaviour in the recent past (relative to INEOS) also confirms this effect.

¹⁰⁷⁶ For simplicity, equations are only presented for the simplest specifications throughout this section.

$$\begin{aligned}
price_{it} = & \alpha + \beta_1 NWE_{it} \times Kerling_{it} + \beta_2 NWE_{it} \times Tessengerlo_{it} + \\
& + \gamma_1 costs_{it} + \sum_j \gamma_{2j} INCO_{jit} + d_t + u_i + e_{it}
\end{aligned}
\tag{2}$$

In specification (2) i indexes the cross-section units defined by customer name, customer location, k-value and plant, while t indexes months between January 2007 and December 2012. The $price_{it}$ is calculated as the invoice value divided by the sold volume; $costs_{it}$ is the variable manufacturing cost minus the caustic soda margin per tonne of S-PVC and the $INCO_{jit}$ -s are the indicator variables for the different INCO-term categories (taking the value of 1 for a given INCO-term and 0 otherwise). The $NWE_{it} \times Kerling_{it}$ and $NWE_{it} \times Tessengerlo_{it}$ variables capture the merger effects and take the value of 1 for the observations in NWE (treatment group) after the INEOS/Kerling clearance (January 2008) and the INEOS/Tessengerlo clearance (July 2011) respectively; these variables take the value of 0 otherwise.¹⁰⁷⁷ The d_t -s are the monthly time effects and the u_i -s are the customer, location, k-value and plant specific fixed effects, while e_{it} is an *i.i.d.* disturbance term. The u_i -s, capture any price difference across the cross sectional units that is not time varying, for example customer specific demand or plant specific cost differences as well as the control-treatment differences. The d_t -s capture all common price effects in a given month, for example ethylene cost shocks as well as the before-after differences. As a result, the parameters β_1 and β_2 yield the difference-in-differences estimates of the merger effects. Other parameters that are estimated by the regression are: α a general constant; γ_1 that captures the differential effect of a plant specific cost change on top of the average monthly cost shock; and γ_2 that captures the price difference due to the difference in the delivery mode.¹⁰⁷⁸

- (83) Compared to specification (2) the triple differences specification (3) that uses Solvay observations to control for differential trends across regions include four additional variables to estimate the merger effects:

$$\begin{aligned}
price_{it} = & \alpha' + \beta'_1 NWE_{it} \times Kerling_{it} + \beta'_2 NWE_{it} \times Tessengerlo_{it} + \\
& + \beta'_3 INEOS_{it} \times Kerling_{it} + \beta'_4 INEOS_{it} \times Tessengerlo_{it} +
\end{aligned}$$

¹⁰⁷⁷ Any additional effect from the plant closure that followed the merger with Kerling (i.e. the closure of Barry in 2010) is part of the estimated INEOS/Kerling merger's price effect and therefore its effect is captured by the $NWE_{it} \times Kerling_{it}$ variable.

¹⁰⁷⁸ The regressions in the SO included a term for the Tessengerlo plants in order to correct for the average price difference between these plants and other INEOS plants. This term was dropped, because the fixed effects achieve the same correction in a more parsimonious way.

$$\begin{aligned}
& +\beta'_5 NWE_{it} \times INEOS_{it} \times Kerling_{it} + \beta'_6 NWE_{it} \times INEOS_{it} \times Tessenderlo_{it} \\
& + \gamma'_1 costs_{it} + \sum_j \gamma'_{2j} INCO_{jit} + d'_t + u'_i + e'_{it}
\end{aligned}
\tag{3}$$

- (84) In specification (3) β'_5 and β'_6 provide the triple differences estimates. The corresponding variables $NWE_{it} \times INEOS_{it} \times Kerling_{it}$ and $NWE_{it} \times INEOS_{it} \times Tessenderlo_{it}$ take the value of 1 for INEOS transactions in NWE after the respective clearance dates. Similarly to (2) β'_1 and β'_2 will estimate the simple difference in-differences effect for Solvay in this specification. The $INEOS_{it} \times Kerling_{it}$ and $INEOS_{it} \times Tessenderlo_{it}$ variables capture the INEOS-Solvay price difference after the two mergers by taking the value of 1 for INEOS after the respective clearance dates.
- (85) The Notifying Parties put forward the critique that specifications (2) and (3) do not contain any region specific control variables. Moreover, the Notifying Parties also submit that construction indices suggest that there are differential trends across the treatment and control groups.
- (86) In order to address these concerns the Commission presents the results where the Eurostat construction index is added as a control variable to specification (2). This is a construction production volume index (sts_copr_m), which is available at country level and monthly frequency. It is normalised to 100 in 2010.¹⁰⁷⁹ Adding the construction index controls for potential differential construction trends in the treatment and control groups.
- (87) A common concern with panel data is the possibility that the disturbance, e_{it} , can suffer from autocorrelation. This can bias the difference-in-differences estimates as well as shown by Bertrand, Duflo, and Mullainathan (2004).¹⁰⁸⁰ While the large set of fixed effects also implies some correction for this problem, in addition standard errors are clustered by the panel identifier in order to allow an arbitrary form of covariance matrix within these clusters.

4.5. Weighting with volumes

- (88) An essential feature of any invoice value data set is that the transactions, and the computed prices, represent different quantities. While it is intuitive to account for the different volumes in order to take each tonne sold into account in the same way, simple weighting with the invoice volume will induce an endogeneity bias, because quantities and prices are not independent.¹⁰⁸¹ To overcome this problem, the total

¹⁰⁷⁹ There is no construction index available from the same Eurostat source for Cyprus, Estonia, Greece, Ireland, Latvia, Lithuania, Malta, Norway, Romania in 2007 and Switzerland. For these countries the regional (NWE or RoE) average construction indices were used.

¹⁰⁸⁰ Marianne Bertrand & Esther Duflo & Sendhil Mullainathan, 2004. "How Much Should We Trust Differences-in-Differences Estimates?," *The Quarterly Journal of Economics*, MIT Press, vol. 119(1), pages 249-275, February.

¹⁰⁸¹ The Notifying Parties recognise in their Response, weighting with volumes is not possible in the fixed effects regression framework described by regressions (2) and (3).

volume sold to each cross-sectional unit is used as a weight instead of the actual sales volume for each transaction.

- (89) The Notifying Parties in their Response and in their Memo claim that the Commission has not provided clear explanation why it is appropriate to use weights and did not give a clear justification for the weights used. Therefore the Notifying Parties conclude that unweighted regressions are just as well justified as weighted ones.
- (90) The Commission rejects the claim of the Notifying Parties that the Commission did not explain the use of its weights. Annex A of the Statement of Objections stated (in the same way that is stated here) that the reason for weighting is the use of invoice data. Invoice data can be problematic, because invoices can represent very different volumes. Similarly, the choice for the specific weights was justified by the endogeneity problem. The exact calculation of the weights used by the Commission in the regressions contained in the Statement of Objections was included in the econometric code that the Commission shared with the Notifying Parties together with the Statement of Objections.
- (91) The Commission also rejects the conclusion that unweighted regressions have the same merit as weighted ones. The frequency of invoices is connected to accounting practices that are arbitrary, can be very different across companies and are unrelated to the pricing decisions in the market. Therefore using invoices as the units of observation can yield both inflated observation numbers and arbitrary average prices. Since the difference-in-differences method is essentially a comparison of average prices¹⁰⁸², using the average prices based on the invoice frequency can produce misleading results.
- (92) The severity of the problem is compounded when data from both Notifying Parties is used. Comparing the number of observations, the volumes sold and the volume-based weights for both INEOS and Solvay in the period between the two mergers illustrates the problem of relying on invoice frequency. In this period, Solvay had around [...] observations than INEOS based on the invoice frequency, while Solvay in fact sold approximately [...] than INEOS in terms of volumes. Calculating average prices based on the invoice frequency inverts the relative weight of the two companies and yields figures that are not representative. Therefore unweighted results can be misleading, especially in the triple difference specifications when data for both firms are used. The weights used by the Commission replicate the actual volume ratios of the two companies much better as they result in 17% less weight given to Solvay transactions than those of INEOS. Using these total volume weights therefore does not yield the same distortion as weights based on invoice frequency (which is effectively equivalent to using unweighted regressions).
- (93) The Notifying Parties also implicitly endorse volume weighting, because average price figures that they have provided in their submissions are typically volume-weighted averages (for example when they calculate prices for regions or plants).¹⁰⁸³

¹⁰⁸² The difference-in-difference regressions compare average prices conditional on the covariates.

¹⁰⁸³ In these computations (e.g. when showing the per tonne sales value of Beek Geleen by K-value in the Form RM), the Notifying Parties divide the total net invoice value by the total volume to calculate average prices, which is equivalent to using volume-weighted averages.

This practice reflects the fact that tonnes rather than invoices are the natural measure for the observations.

- (94) The specific choice of the weights used by the Commission is shaped by the concern about endogeneity and the constraints posed by the fixed effects specifications. Both issues require a time invariant choice of volume-based weights.¹⁰⁸⁴ This implies that monthly volume weights cannot be used, because they vary with time. The total purchase volume of each cross section unit is used as the weight for the regressions. These weights have also an intuitive interpretation: these are the weights that would be used to calculate the average price in the full sample from the average prices of the cross section units.¹⁰⁸⁵ Using these weights implies that the weighted conditional average price in a given month is calculated using the same weights as the ones used to calculate the average price in the full sample.
- (95) The total purchase volume weights take both volumes and the invoice frequency into account and therefore can be regarded as an adequate compromise between volume and invoice frequency weighting. The Notifying Parties in their Memo criticise the use of total purchase volume weights, because it gives more importance to customers who split their purchases over time. However, relying on invoice weights (i.e. using unweighted regressions) are even more prone to this problem. Using average volumes per cross-sectional unit (that is, using as weights the ratio of total quantity over the sample and the number of transactions) eliminates the reliance on invoice frequencies altogether. Additional regression estimates using these alternative average volume weights are presented as part of the results. These show that results are not sensitive to the specific choice of weights, because average and total volume weight estimates are essentially the same.

4.6. Results I: INEOS's relative price changes in NWE

- (96) Before turning to the difference-in-differences estimates, first the estimated monthly treatment-control differences are presented. These are the estimated monthly differences between NWE and RoE prices of INEOS. The treatment-control difference estimates are a useful diagnostic tool, because they:
- a) can confirm the common trend assumption if the treatment-control differences are stable in the pre-merger period.
 - b) summarise effectively the underlying data from which the difference-in-differences estimates are calculated. Therefore they can aid specification choices.
- (97) The monthly treatment-control differences are estimated using a modified version of equation (2):

¹⁰⁸⁴ The Notifying Parties in their Memo criticise total purchase volume weights, because small purchases are also weighted by the total volume. Therefore small purchase observations will be overrepresented in principle. This is, however, a feature of any time constant weight not only of the total volume weights. Time constant weights are unavoidable in the fixed effects specifications as pointed out by the Notifying Parties in their Response.

¹⁰⁸⁵ The average price in the full sample is the total net invoice value divided by the total purchase volume for all observations. The average price of a cross section unit is the total net invoice value divided by the total purchase volume for a given cross section unit.

$$\begin{aligned}
price_{it} = & \alpha + \sum_k \beta_{k1} NWE_{it} \times month_{kt} + \\
& + \gamma_1 costs_{it} + \sum_j \gamma_{2j} INCO_{jit} + d_t + u_i + e_{it}
\end{aligned}
\tag{4}$$

where β_{k1} and β_{12} are the monthly estimated treatment-control differences. The before-after differences of the merger events are derived from these treatment-control differences by averaging them out before and after the merger and taking the difference of these averages.

- (98) The estimated treatment-control differences for RoE are shown in Figure 10. Time is on the horizontal axis while the vertical axis measures the control treatment differences in € per tonne. The solid line shows the estimated parameter values, while the dashed lines show the 95% confidence band for these estimates. The vertical lines indicate the clearance date of the two mergers. Figure 11 repeats the graph for EE as a control group.

Figure 10 Estimated price difference of INEOS between NWE and RoE, EUR, 2007JAN=0

[...]*

Figure 11 Estimated price difference of INEOS between NWE and EE, EUR, 2007JAN=0

[...]*

- (99) For the RoE control group the treatment-control differences are [...]*, confirms the common trend assumption for RoE and NWE, in line with the evidence of the demand trends. The estimated treatment-control differences are in line with the simple regional price differences for NWE and RoE presented in the descriptive section.
- (100) For the EE control group the treatment-control differences follow closely those for RoE except for the pre-merger period (from 01.2009 to 06.2011) of the INEOS/Tessenderlo merger. In this period one can observe [...]*. Coupled with the evidence on diverging demand trends between EE and NWE, the treatment-control graphs indicate that EE should not be used for causal inference, because the common trend assumption might be violated for this control group.
- (101) The treatment-control graphs also provide another important insight: the price shift after the Kerling merger appears with a lag. This lagged shift poses both a specification and an identification concern. The specification concern is the following: if the Kerling merger effect is specified in the standard way (the merger effect is assumed to take place immediately after the month of the clearance) the Kerling merger effect can be underestimated, because the post-merger effect period includes months when the merger had not yet changed the behaviour of the company. This also implies that the Tessenderlo merger effect will be overestimated, because it will pick up the part of the price shift that is not captured by the Kerling merger effect. The identification concern originates from the observation that the lagged price shift after the Kerling merger coincides with the Lehman-shock of the financial crisis. Therefore the Kerling merger effect might be difficult to separate from an

asymmetric shock due to the financial crisis. The difference-in-differences specifications presented below are designed with these concerns in mind.

- (102) There are seven difference-in-differences specifications presented in Table 10. The first three address the specification issue arising from the lagged price shift. The fourth specification is a check for the fixed effects definition, the fifth provides results with the alternative average volume weights and the sixth specification includes country specific construction indices. The seventh specification checks the sensitivity of the merger effect estimates to changes in the control group, by using EE as a control. As explained in paragraphs (70) and (98), the results from this last specification are not used for causal inference, but are used to check the sensitivity of the estimates of price effects to the choice of control group. The estimations are based on 22,000 observations that define approximately 1,300 cross-sectional units.
- (103) The first specification in the first column of Table 10 is the simplest one. It assumes that each merger has an immediate effect. Compared to the 2007 average NWE price of the INEOS 2007 cohort, the INEOS/Kerling merger [...]*. Similarly compared to the 2011 average NWE price of the INEOS 2007 and INEOS/Kerling cohorts the INEOS/Tessenderlo merger [...]*.¹⁰⁸⁶ The result for the INEOS/Tessenderlo merger is much more precise than the corresponding effect for the INEOS/Kerling merger: it is significantly different from zero at 1% while the INEOS/Kerling estimate is only significant at 10%. Differential cost changes across plants do not have an economically significant impact on prices; their estimated parameter is very close to zero.¹⁰⁸⁷
- (104) The specification in the second column of Table 10 addresses the uncertainty of the timing of the behavioural change following the merger clearance. It assumes that the merger affects the firm's behaviour with half a year lag. The results for the merger effects are practically the same [...]*% (INEOS/Kerling) and [...]*% (INEOS/Tessenderlo).
- (105) The specification in the third column of Table 10 allows for a permanent asymmetric demand shock to NWE following the financial crisis. This is implemented using a crisis dummy that takes the value of 1 after September 2008 and 0 otherwise. Since the start of the economic crisis was very close to the INEOS/Kerling merger the crisis dummy captures both price changes. As a consequence, the INEOS/Kerling merger effect is also fully captured by the crisis dummy. Therefore, in this specification only the INEOS/Tessenderlo price effect is identified. The point estimate of the INEOS/Tessenderlo price effect is reduced to [...]*%, although it is not statistically significantly different from the [...]*% estimate of the previous two specifications.
- (106) The Notifying Parties in their Response argue that the first specification is misspecified and no weight should be placed on the results of this specification.¹⁰⁸⁸ The Commission already showed in the Statement of Objections that the differences in

¹⁰⁸⁶ In this section all the percentage effects are calculated on these two bases.

¹⁰⁸⁷ This shows that the effect of costs on prices is mainly picked up by the time effects.

¹⁰⁸⁸ The Notifying Parties base this critique on the application of placebo tests. The Commission's comments on the validity and interpretation of these tests are discussed in detail in section 5 of this Annex. However, the misspecification concern in general is valid due to the statistical effects of the lagged price shift as explained by the Commission in paragraph (99) of this Annex.

the results of the INEOS/Tessenderlo merger are minimal and not statistically significant for specifications one, two and three. Nonetheless, the financial crisis specification provides the most conservative estimate of the INEOS/Tessenderlo merger effect, because it fully addresses the potential bias introduced by the lagged price shift. Therefore, in order to provide a more conservative measure of the price effect of the acquisition of Tessenderlo and to address the concerns of the Notifying Parties specifications four to seven are reported with the financial crisis dummy. The drawback of this choice is that the last four specifications will not be informative about the INEOS/Kerling merger effect.

- (107) The specification in the fourth column of Table 10 presents estimates for the financial crisis specification with fixed effects defined for each customer name and location combination. Dummy variables for K-values and plants are added to this regression. The weights in the regression are changed accordingly. This specification has the advantage that within each customer-name and location unit there are more observations and potentially allows for more precise estimation. However, the disadvantage of this specification is that customer fixed effects imply less control over composition effects. The estimated price effects are [...]%% for the INEOS/Tessenderlo merger.
- (108) The specification in the fifth column of Table 10 presents estimates for the financial crisis specification with the average volume weights. The results are essentially the same as the ones with the total purchase volume weights ([...]%%). These results demonstrate that the specific choice of the volume weights does not influence the results.
- (109) The specification in the sixth column of Table 10 presents estimates for the financial crisis specification with the construction index added. The construction index can capture country specific differential trends and therefore reinforces the common trend assumption of the difference-in-differences. The results are essentially the same as for the simple financial crisis specification ([...]%%).
- (110) The specification in the final column of Table 10 presents estimates for the financial crisis specification with EE as a control group. Price effects are essentially unchanged ([...]%%) for the INEOS/Tessenderlo merger. This indicates that the estimates are not sensitive to leaving out part of the control sample
- (111) To summarise, the results show a [...] * after the INEOS/Tessenderlo merger. There is a similar size, but more uncertain price effect for the INEOS/Kerling merger. Moreover, it is not possible to differentiate the INEOS/Kerling merger and the possible asymmetric price increasing effect of the crisis.

Table 10 Price effects of past consolidations, INEOS prices in NWE compared to other regions, EUR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city, K-value, plant, average volume weights	customer, city, K-value, plant	customer, city, K-value, plant
Control group	RoE	RoE	RoE	RoE	RoE	RoE	EE
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects, No merger effect until 6 months after clearance	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, plant and k-value dummies, , crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008,	Inco terms, time effects, crisis dummy=1 after 09.2008, construction index	Inco terms, time effects, crisis dummy=1 after 09.2008
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

- (112) In order to test the robustness of these results with respect to the definition of the treatment group, the full difference-in-differences estimation is repeated for the alternative treatment NWE+. Figure 12 shows the estimated control-treatment differences for the "NWE+"-"RoE-" comparison with a full set of fixed effects. The level shifts in the relative NWE+ prices after the mergers are even clearer than for the NWE treatment, suggesting that these four countries behave in a similar fashion to NWE countries.¹⁰⁸⁹ The treatment-control price differences are stable for the period preceding the INEOS/Tessenderlo merger, the slope of the fitted trend is not significantly different from zero.

Figure 12 Estimated price difference of INEOS between NWE+ and RoE-, EUR, 2007JAN=0

[...]*

- (113) Table 11 shows the estimated price effects for the NWE+ treatment group and presents the same sensitivity analysis as before. The estimated price effects for the INEOS/Tessenderlo merger increase slightly but are still in the [...]*% range. The INEOS/Kerling effects become much less precise and lose statistical significance in most specifications, although the point estimates increased in this case as well. The increased price effects also suggest that the four additional countries in NWE+ resemble more those in NWE than those in RoE in terms of price behaviour.
- (114) Finally, in order to specifically test for the competitive constraint exercised by Solvay into INEOS, the NWE regressions are re-estimated with the price effects split for customers buying from INEOS only and customers buying from Solvay as well. For this purpose a version of specification (2) was estimated where the merger effect variables and the time fixed effects are interacted with a variable that takes the value of 1 for common customers of INEOS and Solvay and zero otherwise. The results in 12 show that in case of the INEOS/Tessenderlo merger [...]*. The estimates show a price effect of [...]* for the INEOS-only customers, while price effects for the common INEOS- Solvay customers are [...]*.

¹⁰⁸⁹ This is not surprising since these four countries have almost no productive assets for S-PVC for the period 2010-2012, and rely mainly on imports from NWE.

Table 11 Price effects of past consolidations, INEOS prices in "NWE plus" compared to other regions, EUR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city, K-value, plant, average volume weights	customer, city, K-value, plant	customer, city, K-value, plant
Control group	RoE	RoE	RoE	RoE	RoE	RoE	EE
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects, No merger effect until 6 months after clearance	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, plant and k-value dummies, , crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008, construction index	Inco terms, time effects, crisis dummy=1 after 09.2008
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Table 12 Price effects of past consolidations, INEOS prices in NWE compared to other regions for common and non-common customers with Solvay, EUR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city, K-value, plant, average volume weights	customer, city, K-value, plant	customer, city, K-value, plant
Control group	RoE	RoE	RoE	RoE	RoE	RoE	EE
INEOS only customers' price effect							
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
INEOS' common customers to Solvay price effect differential							
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls							
	Inco terms, time effects	Inco terms, time effects, No merger effect until 6 months after clearance	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, plant and k-value dummies, , crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008, construction index	Inco terms, time effects, crisis dummy=1 after 09.2008
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Number of clusters [...]* [...]* [...]* [...]* [...]* [...]* [...]*

4.7. Results II: INEOS's relative price changes in NWE [...]*

- (115) This section presents the results of the triple difference estimations. These estimations address the concern of possible differential trends in geographically defined treatment and control groups. The specifications are the same as for the simple difference-in-differences regressions except for the merger effect variables. Similarly, the same set of specifications is presented as for the simple difference-in-differences.
- (116) As discussed above, geographic control groups in general are imperfect benchmarks if the treatment and the control regions are influenced by asymmetric events (for example the demand shock of the crisis had differential effects). Introducing Solvay prices as an additional control in both the treatment and the control regions controls for these differential unobserved trends.
- (117) The triple difference estimator qualifies the earlier difference-in-differences estimates: whenever the triple difference estimator yields positive price effects it puts a lower bound on the difference-in-difference estimates and confirms the existence of price effects for those specifications. The triple difference estimator produces strong evidence about the existence of the merger price effects if these are statistically significant. The price to pay for the robust inference about the price effects of the mergers is the underestimation of the actual size of the price effect.
- (118) The monthly treatment-control differences for the triple difference estimator (the differences in the price premium of INEOS between NWE and RoE) are presented in Figure 13 for the RoE control group. These show the same level shifts that were found for the difference-in-differences estimates. However, the cumulative magnitude of these shifts is reduced to approximately [...]* EUR. The treatment-control differences show smaller variation and they are even more stable than those of the difference-in-differences for the period preceding the INEOS/Tessenderlo merger. This confirms that the triple differences control for additional regional differences between NWE and RoE. The treatment-control differences for the EE control group are shown in Figure 14 and also indicate that the EE control group is not suitable to draw causal inferences for NWE given the presence of an upwards trend prior to the acquisition of Tessenderlo.

Figure 13 Estimated NWE-RoE price difference of INEOS compared to Solvay's NWE-RoE difference, EUR, 2007JAN=0

[...]*

Figure 14 Estimated NWE-RoE price difference of INEOS compared to Solvay's NWE-EE difference, EUR, 2007JAN=0

[...]*

- (119) The triple difference estimates are shown in Table 13 for the two mergers. The results are unanimous across all specifications for the INEOS/Tessenderlo merger: this transaction resulted in approximately [...]*. This lower bound is not far from the lower bound of the simple difference-in-differences estimates ([...]*%). The point estimates of the INEOS/Kerling merger are around [...]*% on average, but the large standard errors show that one cannot draw the same robust conclusion about the price effect as for the second merger.

Table 13 Price effects of past consolidations, INEOS prices in NWE compared to Solvay and other regions, EUR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city, K-value, plant, average volume weights	customer, city, K-value, plant	customer, city, K-value, plant
Control group	RoE	RoE	RoE	RoE	RoE	RoE	EE
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects, No merger effect until 6 months after clearance	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, plant and k-value dummies, , crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008, construction index	Inco terms, time effects, crisis dummy=1 after 09.2008
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

- (120) The triple difference estimation is also repeated for the alternative treatment group NWE+. The estimated treatment-control differences in Figure 15 indicate strong region specific cyclicalities instead of a shift in the relative prices after the INEOS/Kerling merger, while the price level shift finding still holds for the INEOS/Tessenderlo merger. The cumulative magnitude of the change in the treatment-control difference is approximately the same as for the NWE treatment group.

Figure 15 Estimated NWE+-RoE- price difference of INEOS compared to Solvay's NWE+-RoE-difference, EUR, 2007JAN=0

[...]*

- (121) Table 84 presents the price effect estimates for the NWE+ treatment group using the price premium of INEOS over Solvay. Once again, the results for INEOS/Tessenderlo merger are similar across specifications and imply a [...]* lower bound for the price effect. The estimates for the INEOS/Kerling merger are reduced in magnitude and remain too imprecise for solid inference.
- (122) The Notifying Parties in their Response and Memo present estimates of the triple difference specifications without weighting and show that for the NWE-RoE specifications the Tessenderlo merger effects are significantly reduced. Based on this finding the Notifying Parties claim that the triple differences method is not robust.

Table 84 Price effects of past consolidations, INEOS prices in NWE plus compared to Solvay and other regions, EUR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city, K-value, plant, average volume weights	customer, city, K-value, plant	customer, city, K-value, plant
Control group	RoE	RoE	RoE	RoE	RoE	RoE	EE
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects, No merger effect until 6 months after clearance	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, plant and k-value dummies, , crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008, construction index	Inco terms, time effects, crisis dummy=1 after 09.2008
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

- (123) As explained in subsection 4.5 of this Annex, the Commission does not consider the unweighted estimation based on the invoice frequency to be reliable. This is due to the fact that average prices and therefore the merger effects are biased in an arbitrary way when using the invoice frequency. Moreover, the simple difference-in-differences results are very similar with or without weighting. This indicates that unweighted results change in the triple differences, because the Solvay sample is accounted for differently using the invoice frequency.
- (124) Table 15 calculates the share of the two companies in RoE and NWE in the sample based on the invoice frequency, actual volumes and the total volume weights. This table shows that by using the invoice frequency the Notifying Parties' give Solvay 60% more weight in the control sample than its weight based on the actual volumes sold. On the other hand they assign around 20% less weight to INEOS in the treatment group relative to actual volumes. These differences are large and are a result of arbitrary accounting practices. The total weight volumes used by the Commission approximate the actual volume weights much better and are therefore clearly preferable. The Commission also points out that in the NWE(+)-RoE(-) specifications the Tessenderlo merger effects are broadly unchanged even without weighting.

Table 15 Sample shares of INEOS and Solvay in RoE and NWE

	INEOS	Solvay	Total
RoE			
Invoice frequency	[...]*	[...]*	[...]*
Actual volumes	[...]*	[...]*	[...]*
Total volume weights	[...]*	[...]*	[...]*
NWE			
Invoice frequency	[...]*	[...]*	[...]*
Actual volumes	[...]*	[...]*	[...]*
Total volume weights	[...]*	[...]*	[...]*

5. ASSESSMENT OF THE NOTIFYING PARTIES' RESPONSE TO THE DIFFERENCE-IN-DIFFERENCE ANALYSES

- (125) This section addresses specific parts of the Notifying Parties' critiques of the Commission's empirical analyses: placebo tests, deterministic linear trends and sensitivity to changes in the control sample. Other comments of the Notifying Parties were addressed at the relevant parts of Section 4.

5.1. Placebo tests

- (126) In their Response the Notifying Parties present placebo tests to test the common trend assumption of the difference-in-differences method. This assumption is central to establishing the causal link between the merger and the estimated price increase. If the assumption does not hold then the causal effect of the merger cannot be established with the difference-in-differences methodology, because the merger effect cannot be differentiated from the differential trends of the control and treatment groups that are unrelated to the merger. Through the use of these tests, the Notifying Parties therefore challenge the causal link between the price increases and

the mergers, but they do not contest the existence of the price increases after the mergers.

- (127) The common trend assumption requires that the outcome variables (prices) of the treatment and control groups follow a common trend pre and post-merger. Graphically the assumption implies that the treatment-control differences display a flat trend during the periods unaffected by mergers. The common trend assumption is the fundamental identification assumption of the difference-in-differences and it is not possible to test it directly in general. Placebo tests can give an indication about the plausibility of the assumption by testing it for the pre-merger period. As such the placebo tests offer a formal way to summarise the information in the treatment-control differences pre-merger. The implementation is the following. A pre-merger period has to be defined when the treatment group is not affected by the merger event(s). Artificial (placebo) events are defined for the pre-merger period when the treatment-control differences should contain no trend. If these placebo tests have a significant effect then the average difference of the treatment and control groups pre-merger has a trend and the common trend assumption is not likely to hold.
- (128) In their Response the Notifying Parties perform placebo tests focusing on the INEOS/Tessenderlo merger effect estimation. The Notifying Parties define the pre-merger period as January 2007 to July 2011 and define several placebo events: one for each month between June 2008 and February 2011. Separate placebo tests are performed for each of these events. The Notifying Parties also include a dummy variable for the INEOS/Kerling merger and argue that it controls for "any possible effects that the Kerling merger may have had on prices in NWE or NWE+".
- (129) The Commission recognises that placebo tests in general can be used as a tool to formalise the information contained in the treatment-control graphs that were presented in section 4 (and were already included in the Statement of Objections) and to check whether there is a trend in the treatment-control differences. However, the Commission does not accept the way the Notifying Parties implemented the placebo tests, because:
- a) The period chosen for the placebo tests includes the Kerling merger. Therefore a fundamental requirement for the placebo tests is not met.
 - b) The rolling implementation of the placebo tests inflates any significant placebo effect, because tests in periods subsequent to any given placebo test contain almost the same information as in the original test.
 - c) The placebo results have to be interpreted together with the treatment-control graphs, because the placebo tests cannot differentiate easily between a temporary asymmetric shock and a differential trend.
- (130) Specifically, the Commission does not consider the period from January 2007 to July 2011 an adequate choice for the pre-merger period to test the assumptions of the INEOS/Tessenderlo merger effect estimation. The INEOS/Kerling merger was cleared in 2008 January and its effect, if any, is expected to take place after this date.¹⁰⁹⁰ Therefore the Notifying Parties chose a period for the placebo tests that can

¹⁰⁹⁰ How long this period lasted is difficult to say with precision, but it is reasonable to expect that it is somewhere between the year following the clearance decision and the closure of the Barry plant in 06.

coincide partially with the potential effect of the INEOS/Kerling merger. This contradicts fundamentally the requirements of any placebo test. To test the assumptions of the difference-in-differences method the placebo period should be clean: it must not include a period that is possibly affected by one of the mergers. Otherwise the placebo effects may simply capture the effect of the INEOS/Kerling merger rather than testing the assumptions of difference-in-differences method.¹⁰⁹¹ In summary, the Notifying Parties's placebo tests do not satisfy the fundamental requirement of any placebo test and are potentially heavily affected by the INEOS/Kerling merger effect. Therefore the placebo tests as presented in the Response and the Memo cannot be used to test the validity of the common trend assumption.

- (131) In addition, the Commission points out that the rolling window implementation of the Notifying Parties' placebo tests produces heavily correlated test results in subsequent periods. This implies that once a significant placebo effect is found it is very likely to find a significant placebo effect in the successive period.¹⁰⁹² Therefore, calculating the fraction of significant placebo tests in the placebo period will lead to biased inference.
- (132) Moreover, in the Commission's view the placebo tests have to be interpreted together with the treatment-control graphs. This is due to the fact that a rolling placebo test can produce contradicting results, such as finding significant effects for a sub-period but not finding significant effects either before or after this sub-period. This pattern is also found among the placebo graphs contained in the Response to the Statement of Objections. Such a pattern is difficult to interpret, because it is not consistent with a differential trend of the treatment and control groups. The treatment-control graphs, by providing more detailed information, can explain such findings.¹⁰⁹³
- (133) Finally, the placebo tests have to be interpreted with caution, because they are sensitive to changes in the sample. The Memo of the Notifying Parties demonstrates that changes to the control sample (around 10% of the control sample in the period between the two mergers is removed in one of the scenarios discussed by the Notifying Parties, as presented below) can imply large changes in the placebo test results, while the merger effect estimates themselves do not change substantially following the same change in the control sample.

2010. This latter can be regarded as the end of the adjustment to the new equilibrium after the Kerling merger, as discussed in section 9.1.2.9 of the Decision.

¹⁰⁹¹ The dummy variable for the INEOS/Kerling merger would address this problem only if the effect of the INEOS/Kerling merger would take place fully in the month of the clearance (January 2008) without any lag. This is a very strong assumption in general and one that the treatment-control graphs clearly refute in this specific case: the price shift takes place during the second part of 2008, either as a result of the Kerling merger, or due to an asymmetric impact of the financial crisis.

¹⁰⁹² In order to avoid this problem the Bertrand, Duflo, and Mullainathan (2004) paper that was referenced by the Notifying Parties in their Response uses randomisation. It is, however, not possible to apply such randomisation in the present case.

¹⁰⁹³ For example in case of the first graph of Figure 2 of the Response to the SO the treatment-control graphs show that there have been two transitory shocks that are picked up by the placebo tests performed by of the Notifying Parties. However, transitory shocks are not the same as trends or permanent shifts in the treatment-control differences and therefore should not be counted as evidence against the common trend assumption.

- (134) Based on these arguments the Commission considers that placebo tests should be used to test assumptions of the difference-in differences by using at most the period from January 2009 to July 2011.¹⁰⁹⁴ Moreover, the Commission regards the standard 95% confidence interval for the tests as more adequate.¹⁰⁹⁵ The placebo test results are presented in Figures 16-19 for the simplest difference-in-differences and triple differences specifications for both the RoE and EE control groups.

Figure 16: Placebo tests for the difference-in-differences estimation, RoE control

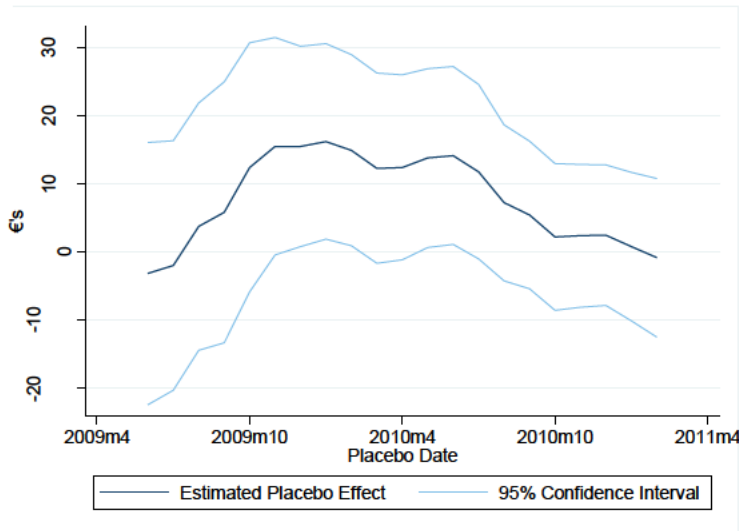
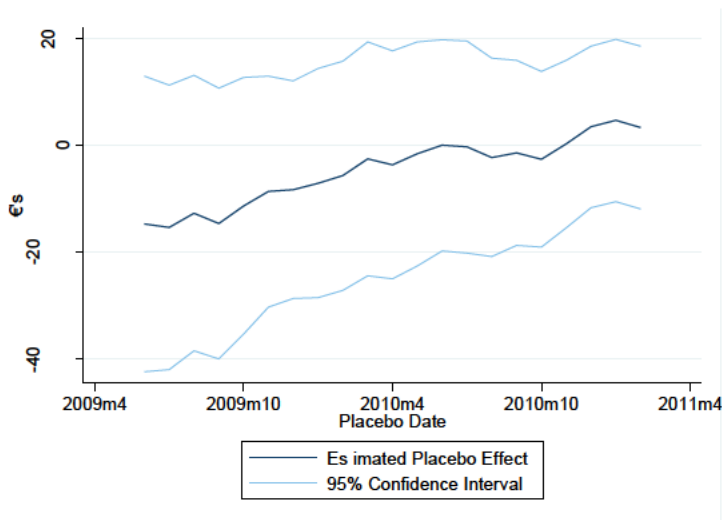


Figure 17: Placebo tests for the triple differences estimation, RoE control



¹⁰⁹⁴ Arguably the choice of 01.2010-07.2011 would be even safer. However, it would not change the conclusions from the placebo tests.

¹⁰⁹⁵ The Bertrand, Duflo, and Mullainathan (2004) article cited by the Notifying Parties also use the 95% confidence interval.

Figure 18: Placebo tests for the difference-in-differences estimation, EE control

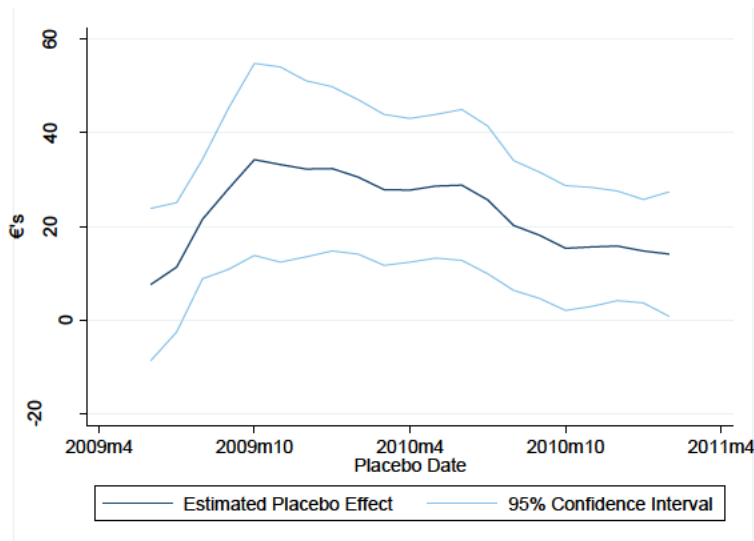
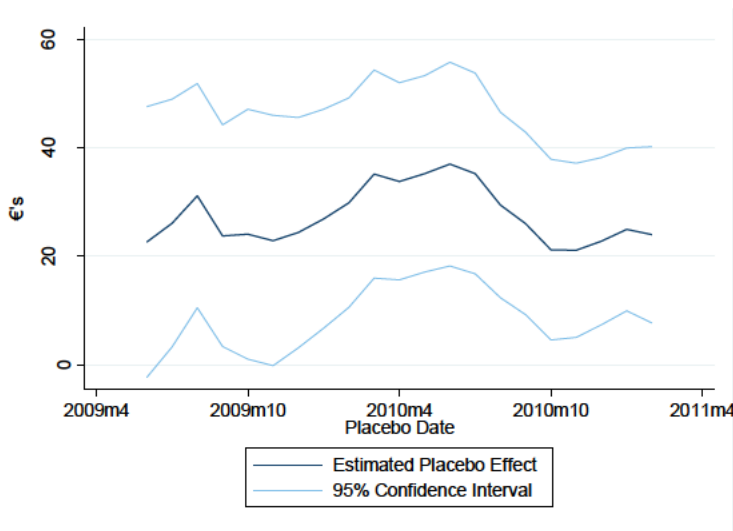


Figure 19: Placebo tests for the triple differences estimation, EE control



- (135) For the RoE control group the placebo tests are all insignificant for the triple differences estimation and are most of the time insignificant for the difference-in-differences estimation as well. This confirms the common trend assumption of the difference-in-differences and the triple differences methods for the Commission's preferred RoE control group. The few statistically significant placebo effects for the ROE control group can clearly be associated with temporary shocks in the treatment-control differences well before the Tessengerlo merger, rather than level shifts or trends in the treatment-control differences. For the EE control group the placebo tests confirm the differential trend indicated by both the treatment-control graphs and the differential demand trends. However, as explained above, the EE control group is not used to draw causal inference. It serves simply as a sensitivity check for the point estimates obtained when using the RoE control group.
- (136) Therefore, the Commission rejects the Notifying Parties' claim that the Commission's empirical method fails the placebo tests. The Commission considers that its empirical analysis is valid and that its assumptions hold.
- (137) As a final remark in relation to placebo tests, the Commission also re-iterates that through the use of placebo tests the Notifying Parties do not question the fact that the

INEOS/Tessenderlo merger was associated with [...]*. The placebo tests are instead used to question whether a causal link can be drawn between the acquisition of Tessenderlo and [...]*. The Commission considers such a causal link can be established both by the econometric evidence, and also by the qualitative evidence. The latter indicates that following the market leadership position obtained by INEOS through the merger with Tessenderlo, although short of dominance, [...]*.¹⁰⁹⁶ The evidence on relative sales shifts in NWE for INEOS and Solvay after the merger with Tessenderlo provides further evidence on the nature of this strategy, and the existence of a causal link between the merger and [...]*. The Commission considers that the econometric evidence presented in this annex provides further statistical evidence on the existence of this link, and it also reliably [...]* that followed the merger with Tessenderlo.

5.2. Deterministic linear trends

- (138) The Notifying Parties claim that the "main version of the Commission's regression model makes no allowance for the possibility that there were different trends in prices of the treatment and control groups over the period, and the Commission has not investigated this possibility as a robustness check". Therefore the Notifying Parties include a deterministic linear trend both for the treatment and the control groups and present results of these estimations. The estimated parameters for the merger effects are reduced substantially, lose statistical significance or even become negative in these specifications. The Notifying Parties conclude that these changes in the results indicate that there is "no evidence of any merger-specific effects".
- (139) The Commission rejects the claim of the Notifying Parties that the possibility of different price trends in the treatment and control groups was not addressed in the Statement of Objections. In paragraph 68 of Annex A of the Statement of Objections the Commission explicitly stated that the main reason for introducing the triple differences method is that it addresses the possibility of differential trends across the treatment and control groups. Therefore the triple differences method addresses the same concern as the deterministic linear trend.
- (140) Furthermore, the triple differences method is preferable to the deterministic linear trend specifications for several reasons. First, the triple differences specification removes a non-parametric differential trend (stochastic or deterministic). As such, it is a more general way of controlling for a differential price trend between the treatment and control groups than the deterministic linear trend assumption. This implies that the differences in the results between the triple differences method and the deterministic linear trend results can be connected to the linearity assumption and demonstrate that this linearity assumption does not hold. The linear extrapolation towards the end of the sample, when the Tessenderlo merger took place, might be especially problematic. Second, the identification of the deterministic linear trend is unclear. For example, it will capture the lagged price shift or any staggered price adjustment after the merger. The Response of the Notifying Parties presents the results of the deterministic linear trend specification with the financial crisis dummy that does not suffer from this potential problem and the result for the Tessenderlo effect is indeed very close to the triple difference estimates. Finally, the deterministic linear trend specifications are not stable. The Memo of the Notifying Parties presents

¹⁰⁹⁶ In one of its documents, INEOS even reports [...]* (see Recital (669) in the main text of the Decision).

estimates of the deterministic linear trend specification with changes to the control sample (around 10% of the control sample in the period between the two mergers is removed) and the results show large changes. In contrast the triple difference results are much more stable.

- (141) In addition to these reasons to prefer the triple differences method over the linear deterministic trend specifications, the treatment-control differences and the placebo tests presented in this Annex confirm that the common trend assumption of the difference-in-differences method holds for the RoE control group. Therefore the results of the deterministic linear trend specification are not just less preferable to the triple differences method, but are also at odds with the placebo evidence.

5.3. Sensitivity to changes in the control group

- (142) The Notifying Parties in their Memo claim that excluding one Greek customer ([...])* changes the estimates of the merger effects and cast doubt on the INEOS/Tessenderlo merger effects. In particular the Notifying Parties present:
- a) Deterministic linear trend specifications with and without the [...]* observations;
 - b) Placebo tests for the difference-in-differences financial crisis and alternative fixed effects specifications and for the triple differences without the [...]* observations; and
 - c) Triple difference estimates with no weighting with and without the [...]* observations.
- (143) The Commission considers that the Notifying Parties cannot draw reliable conclusions about the sensitivity of the Commission's empirical analysis given that they did not actually present any of the Commission's specifications with and without the [...]* observations. The Notifying Parties present only their own specifications and tests (deterministic linear trends and placebo tests) and their own non-weighted version of the triple differences.¹⁰⁹⁷ Accordingly, the Memo primarily illustrates the sensitivity of placebo tests and of the specifications with the deterministic linear trend proposed by the Notifying Parties to the omission of the [...]* observations. The Commission clarified already in the previous two subsections its general reservations about the Notifying Parties' use of deterministic linear trend and placebo tests.¹⁰⁹⁸
- (144) The Commission notes that [...]* is a large trader (as also explained by the Notifying Parties in the Memo) and therefore it represents a significant proportion, [...]* percent, of the INEOS control sample in the period between the two mergers. Therefore the omission of [...]* observations from the analysis cannot be characterised as a limited adjustment to the data. Changes of this magnitude in the

¹⁰⁹⁷ The non-weighted triple difference estimates are actually not significantly affected by the omissions of the [...]* observations and the changes are in line with what can be expected when dropping a sizeable fraction of the control sample. The Tessenderlo effect estimates are low when [...]* is omitted from the non-weighted triple difference estimations. However, this is due to the low Tessenderlo merger effect estimates in the non-weighted triple differences specifications in general, rather than due to the omission of the [...]* observations.

¹⁰⁹⁸ The placebo tests presented in the Memo suffer from the same problems that are discussed in subsection 5.1 of this Annex.

sample, especially if they relate to one specific part of the price distribution, can potentially influence the estimates.

- (145) In fact, the Notifying Parties' suggestion to leave out the [...] observations from the control sample leads to the same type of sensitivity check for the control group that is suggested by the Commission when using EE as the control group. The main difference is that leaving out [...] is a more targeted omission from the control sample. [...] is a relatively high price customer: in 2010 and 2011 its prices were in line with the treatment group's prices. Therefore, by excluding [...] the Notifying Parties drop a significant fraction of the high price control observations before the Tessengerlo merger. This leads to an increase in the treatment-control differences after 2010 and induce a trend in the treatment-control differences in the pre-Tessengerlo merger period. Since in 2012 prices of the [...] observations were in line with the average prices of the control group, the merger effect estimates are reduced as well when [...] is omitted from the sample.
- (146) These findings are confirmed by the treatment-control differences for the difference-in-differences method shown in Figure 20: omitting a significant amount of high price control observations from the second part of the Tessengerlo pre-merger period leads to a trend in the treatment-control differences. This type of change to the control sample renders causal inference problematic on the modified sample, similarly to using the EE control group. Therefore, the Commission considers that the modified control group suggested by the Notifying Parties, without [...], can be used only as a sensitivity check for the results and not as a tool for causal inference.
- (147) This conclusion for the difference-in-differences based on the treatment-control graphs is confirmed by the placebo tests in Figure 21, implemented according to the comments by the Commission discussed in sub-section 5.1. After the omission of the [...] observations the difference-in-differences placebo effects are significant for most of the period. However, this does not invalidate the suitability of RoE as a control group, for the same reasons given in the extensive discussion on EE in subsection 2 of section 4.
- (148) Moreover, Figure 22 shows that the placebo tests for the triple differences estimation remain statistically insignificant even if [...] observations are dropped. This suggests that the triple differences method is suitable for causal inference even with the omission of [...]. This shows the additional robustness of the assumptions of the triple differences method.
- (149) In summary, the Commission considers that the evidence from the treatment-control graphs and the placebo tests shows that the control group without the [...] observations can only be used as a sensitivity check for the difference-in-difference estimates, but cannot be used for causal inference. By contrast, for the triple differences method this modified control group can also be used for causal inference.

Figure 110 Estimated price difference of INEOS between NWE and RoE without Hellenic Petroleum, EUR, 2007JAN=0

[...]*

Figure 21: Placebo tests for the difference-in-differences estimation, RoE control

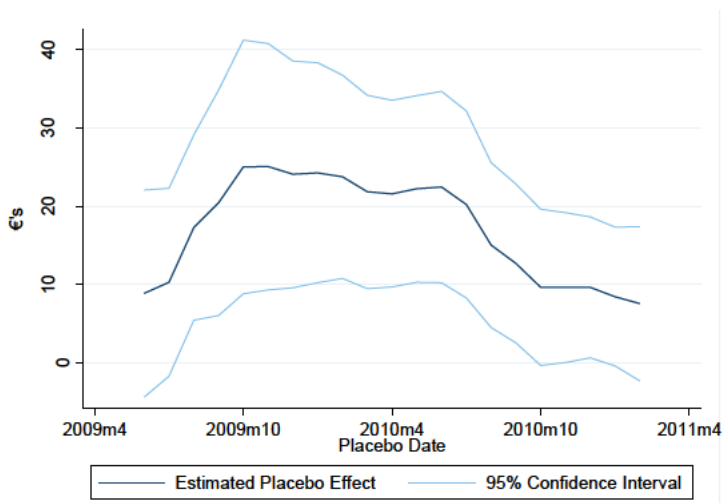
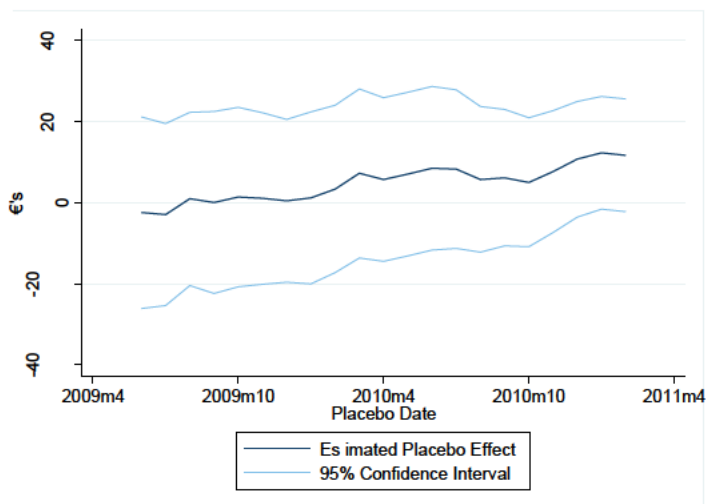


Figure 22: Placebo tests for triple differences estimation, RoE control



- (150) Tables 16 and 17 show the Commissions' difference-in-differences and triple difference estimates after the omission of the [...]* observations. Particularly given the specific price evolution of [...]* discussed above, the results are in line with what can be expected from dropping the [...]* observations from the INEOS control sample. The simple difference-in-differences estimates are around [...]*% and the triple difference estimates are around [...]*%. In the alternative fixed effects specification of the triple differences estimations the Tessengerlo merger effect becomes small and insignificant. However, this specification shows the lowest triple differences estimate in the full sample as well, mainly due to the pooling of price

observations from plants located in different countries, including outside NWE in the case of Solvay (e.g. customers purchasing from Solvay's plants in Belgium and Spain are pooled together under the alternative fixed effects specification).¹⁰⁹⁹ This indicates that the simple plant fixed effects do not capture well the heterogeneity of prices across plants, customers and k-values when prices are compared across different firms as in the triple difference estimation. The Commission considers that this result does not question in general the Tessengerlo merger effect findings, but rather confirms the Commission's choice of using full cross-section fixed effects as the preferred specification.

¹⁰⁹⁹ Excluding the transactions of Solvay's plant in Martorell from the sample yields estimates for the alternative fixed effects specification that are practically equal to the estimates of the financial crisis specification with the full set of fixed effects. As a consequence leaving out the [...] observation from the sample without the Martorell transactions would lead to statistically significant price effects for the alternative fixed effects specification as well.

Table 16 Price effects of past consolidations, INEOS prices in NWE compared to other regions, EUR, without [...]*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city, K-value, plant, average volume weights	customer, city, K-value, plant	customer, city, K-value, plant
Control group	RoE	RoE	RoE	RoE	RoE	RoE	EE
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects, No merger effect until 6 months after clearance	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, plant and k-value dummies, , crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008, construction index	Inco terms, time effects, crisis dummy=1 after 09.2008
Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Table 97 Price effects of past consolidations, INEOS prices in NWE compared to Solvay and other regions, EUR, without [...]*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Comparison within	customer, city, K-value, plant	customer, city, K-value, plant	customer, city, K-value, plant	customer, city	customer, city, K-value, plant, average volume weights	customer, city, K-value, plant	customer, city, K-value, plant
Control group	RoE	RoE	RoE	RoE	RoE	RoE	EE
Kerling	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Tessenderlo	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
variable costs	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Other controls	Inco terms, time effects	Inco terms, time effects, No merger effect until 6 months after clearance	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, plant and k-value dummies, , crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008	Inco terms, time effects, crisis dummy=1 after 09.2008, construction index	Inco terms, time effects, crisis dummy=1 after 09.2008
	Constant	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Observations	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	R-squared	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Number of clusters	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

- (151) In summary, the Commission finds that the omission of the [...] observations is a significant change to a specific part of the control sample of INEOS. Moreover, the Commission rejects the Notifying Parties' claim that omitting the [...] observation changes the results of the Commission's empirical analysis materially.

6. IMPLICATIONS OF EMPIRICAL RESULTS

- (152) The empirical results confirm the regional geographic market definition and the choice of NWE as a separate relevant geographic market. Both the simple price divergence estimation and the merger price effect estimation shows that there is a lack of price arbitrage between NWE and other regions, because price trends and merger price effects are different.
- (153) In addition the results indicate that INEOS, although probably short of dominance, already holds some degree of market power within the NWE/NWE+ market, because [...]. The Commission considers that the econometric evidence on the merger price effects, together with the evidence on the volume changes in NWE and the qualitative evidence on the [...] of INEOS, establishes the causal link between the mergers and the [...], in particular for the INEOS/Tessenderlo transaction. The price effects of the INEOS/Tessenderlo transaction are in the range of [...]%. This result is consistent with the range indicated by the descriptive evidence.
- (154) The merger effect estimates also show that Solvay is a strong competitive constraint, because customers who purchase from both Notifying Parties [...].
- (155) The Commission is of the view that the Notifying Parties' three broad comments on the difference-in-differences analysis, as put forward in their Response to the SO and the additional economic Memo, do not invalidate the Commission's empirical analysis of the price effects of past mergers. The Commission rejects the argument of the Notifying Parties that EEA regions not included within NWE cannot serve as a control group for NWE. Geographic markets other than NWE are valid benchmarks for the purpose of the difference-in-difference method as long as they satisfy the common trend assumption and the Commission shows that this assumption holds for RoE.
- (156) The Commission also rejects the argument of the Notifying Parties that on a balance of probabilities the Commission failed to establish a causal connection between [...] and the mergers and that alternative explanations for [...] are more likely. In the analysis presented in this Annex, the Commission tests the sensitivity of its results against the possibility of an asymmetric crisis shock, diverging construction trends, changes in the unit of the price comparison (fixed effects), alternative weights, changes to the control group and changes to the treatment group. The finding of an approximately [...] effect on price due to the Tessenderlo merger holds against all these tests. The Commission also employs a triple differences method to further control for possible asymmetric regional shocks. The results of these method provide consistently an approximately [...] lower bound for the Tessenderlo merger effect.
- (157) Finally, the Commission also rejects the technical arguments of the Notifying Parties about the lack of validity of the difference-in-difference method in the form of placebo and linear trend tests, weighting and the choice and sensitivity of the benchmarks. The Commission shows that, when applied correctly, the placebo tests confirm the Commission's own diagnostic tools (that is, the treatment-control graphs and the regional demand trend comparisons). The Commission also considers that

the triple differences method addresses the same concern as the linear trends and it is preferable and more general than the latter. With regard to the choice of weighting the Commission shows that unweighted results are not reliable and weighted estimates are preferable.

ANNEX B – ECONOMIC MODELLING OF THE POTENTIAL EFFECTS OF THE TRANSACTION ON PRICES

- (1) This Annex illustrates the results of the economic model put forward by the Notifying Parties¹ during the course of the procedure in order to quantify the price effects of the Transaction, taking into account both synergies and remedies. The model put forward for this purpose is the “Bertrand-Edgeworth” (“BE”) framework that the Commission utilised in its Decision on *Outukumpu/Inoxum* (M.6471).
- (2) This Annex is structured as follows:
 - a) Section 1 briefly describes the proceedings.
 - b) Section 2 briefly describes the economic submissions in which the Notifying Parties set out an economic model (the BE model) in order to evaluate the effects of the transaction in combination with a structural divestment and the claimed efficiencies.
 - c) Section 3 presents the main properties of the BE model.
 - d) Section 4 discusses the assumptions that need to be made in order to fit the economic model to the Commodity S-PVC market in North Western Europe (“NWE”), and the limitations of the model.
 - e) Section 5 presents some of the results obtained by the Notifying Parties under a number of scenarios, and also introduces additional computations performed by the Commission using the same economic model.²
 - f) Section 6 concludes, summarising the prediction of the economic model on the potential magnitude of the price effects of the transaction in the Commodity S-PVC market in NWE.

7. PROCEEDINGS

- (3) During the pre-notification phase of the proposed transaction, on 9 September 2013, the Notifying Parties submitted an economic report titled “A Bertrand-Edgeworth Model for the S-PVC industry”. This submission effectively performs two tasks: it first adapts the BE model previously used by the Commission in *Outukumpu/Inoxum* to the S-PVC industry, and it then evaluates the effects of the joint venture (“JV”) between INEOS and Solvay on prices, taking into account one set of remedies put forward by the Parties in pre-notification³, in conjunction with the efficiencies claimed by the Parties.

¹ Submission of September 9 2013, entitled “A Bertrand-Edgeworth Model for the S-PVC industry. Gauging the impact of the Divestments on the Effects of the INEOS/Solvay JV”, and submission of September 25 2013, entitled “Case No. M6905: INEOS/Solvay. Follow-up to Economists’ Meeting”.

² The Commission has also calibrated the model on the basis of the data collected from third parties during the market investigation. The inputs that differ relative to the baseline computation of the Notifying Party are the effective capacity and the NWE sales of the competitors. The quality of the calibration and the price increase obtained under these alternative input assumptions are comparable to those under the baseline scenario put forward by the Notifying Parties, and it is thus considered that data provided by Notifying Parties provide a good basis for the inputs required for the modelling exercise.

³ The remedies modelled in this submission were the divestment of Schkopau and Mazingarbe.

- (4) On 18 September 2013 the Commission and the Notifying Parties held one meeting in order to understand and discuss the applicability of the economic model to the S-PVC industry.
- (5) On 25 September 2013, Notifying Parties submitted a follow-up note entitled "Follow-up to Economists' meeting" with the aim of clarifying and addressing some of the questions discussed in the meeting held on 18 September 2013.
- (6) On 5 February 2014 the Notifying Parties replied to the Statement of Objections ("SO"). The Notifying Parties discuss the model in Annex 15 of their Response. The reply of the Notifying Parties is assessed in Section 3 of this Annex.

8. DESCRIPTION OF THE FRAMEWORK OF BERTRAND-EDGEWORTH COMPETITION

- (7) The BE model is an economic model that aims at describing oligopolistic competition between competing suppliers. As any other economic model, the BE framework makes a number of assumptions on competitors' behaviour and on the characteristics of the market which are briefly set out below.

8.1. Nature of competition in the Bertrand-Edgeworth model

- (8) The BE model applies a framework of price competition in homogeneous goods. This framework can lead to very intense competition between firms (in the absence of coordination). In particular, as long as there are at least two firms in the market, the firms will have very strong incentives to undercut one another on price so that the only equilibrium price is one where all firms set prices at (or just above) marginal costs. A concentration of firms will then not affect the equilibrium price unless it is a merger to monopoly. Despite potentially high levels of concentration, the market output will be perfectly competitive as long as there are at least two firms (this is the so-called "Bertrand Paradox").
- (9) However, in the presence of capacity constraints, the strong Bertrand result that price competition in homogeneous goods results in prices equal to marginal costs does not hold in general. This is because if rivals to a given firm face fixed constraints on their production capacity that are such that these rivals cannot jointly supply the entire market at a price equal to marginal cost, then that firm has a degree of market power. This follows in turn from the fact that even if its rivals supply at capacity, the firm in question still faces a finitely downward sloping demand curve and it will find it optimal to charge a price above marginal costs. Moreover, as rival capacity decreases, the demand over which the firm can exercise market power (because it cannot be supplied by rivals) increases. Thus a merger shifts out the residual demand of the merged entity allowing the merged entity to charge higher prices.
- (10) The presence of capacity constraints in a framework of price competition with homogeneous goods therefore gives rise to market power. The framework of price competition with homogenous goods in the presence of capacity constraints is known in the economic literature as "Bertrand-Edgeworth" competition.
- (11) A merger between any two firms in a BE framework increases the post-merger capacity share of the combined entity compared to the merging parties' individual capacity shares pre-merger. By the logic explained in paragraphs 8 to 10, this increases the market power of the combined entity compared to the market power by each of the merging parties previously (because total capacity of the merged entity's rivals post-merger is lower than total capacity of each of the merging Parties' rivals pre-merger). The change in market power of the combined entity compared to the

merging Parties pre-merger is determined by the capacity increment resulting from the transaction. The framework of BE competition therefore provides a rationale for why market concentration (e.g. as measured by the capacity share of the combined entity) and the increment from the transaction (i.e. the increase in the capacity share) are important indicators for level and change in market power post-merger, in particular in situations where firms compete in price for the supply of homogeneous goods in the presence of capacity constraints at the firm level.

- (12) A competitive outcome post-merger is still possible in the BE framework under two scenarios: (i) the combined entity's rivals have enough excess capacity to supply the market at a price equal to marginal costs post-merger; (ii) the merging firms produce at their capacity constraint pre-merger and this is unlikely to change post-merger.

8.2. The BE model predicts a price range rather than a single equilibrium price and the change in the predicted price range provides a measure of the increase in market power

- (13) The presence of capacity constraints in models of price competition with homogeneous goods, does, in general, not give a prediction of a single equilibrium price. This is because, at any given combination of prices set by the firms in the market, at least one firm will have an incentive to change its price. The absence of a single stable equilibrium price (i.e. the absence of pure strategy Nash equilibria) is a well-known property of BE models.⁴
- (14) However there is a solution concept which can be applied to BE models and which generates a range of prices that are consistent with (or can be rationalised within) the model. This solution concept is based on the repeated elimination of dominated strategies. It only requires that rational firms will not chose prices that can never be optimal and they assume their rivals to do the same. In a BE model, repeated elimination of dominated strategies leads to a range of prices for each firm that could be observed in the market.
- (15) Both the Commission in *Outokumpu/Inoxum* and the Notifying Parties in their submissions relied on the repeated elimination of dominated strategies in order to solve the model and to compute the pre and post-merger prices. In particular, the Notifying Parties relied on results from Borgers (1992) and adopted a numerical approach to compute prices and the price effects from the JV.
- (16) Equivalent analytical results under a specific assumption of symmetry of marginal costs across suppliers can also be obtained by using the results of Hirata (2009).⁵ This academic article shows that the range of prices in a BE model is determined by the incentives of the largest supplier. The upper bound of the price range is given by the price that the largest supplier charges when maximizing its reservation profits regardless of the opponents' price. In other words, the upper bound price is the

⁴ More specifically, there will be no pure strategy Nash equilibria unless (i) capacity constraints are very tight so that firms produce at capacity, or (ii) capacities are so large that each n-1 coalition of firms can supply the entire market at marginal costs in which case the equilibrium price will be at (or just above) marginal costs.

⁵ Daisuke Hirata (2009) "Asymmetric Bertrand-Edgeworth Oligopoly and Mergers", *The B.E. Journal of Theoretical Economics*, Vol. 9, Issue 1. It is worth noting that the results in Hirata (2009) hold true for any functional form of demand as long as it satisfies the properties of twice differentiability and concavity.

“monopoly” price set by the largest supplier on its residual demand assuming all other competing suppliers produce at capacity. The lower bound of the price range is instead given by the minimum price that equalizes the profit of the largest firm at the upper bound price with the profits that this supplier can obtain by producing at capacity or supplying the entire demand at the lower bound price.⁶

8.3. The evaluation of price effects in a BE model remains a qualitative exercise

- (17) A merger will change the range of prices predicted by the BE model. As it was noted in the *Outokumpu/Inoxum* decision⁷, the Commission considers that the change of the range of rationalisable prices in the BE model, especially if large, provides a measure for the change in market power resulting from a transaction. In other words, as the change in the distribution of capacities in the industry resulting from the transaction will affect the range of rationalisable prices, this shift in the range, especially if significant, provides a measure of the degree of the change in market power resulting from the transaction.
- (18) The shift in the price range reflects the merger-induced change in the distribution of capacities across firms in the market. The extent of the shift also reflects the overall elasticity of demand and the extent to which marginal cost synergies, if any, provide the merged entity with an incentive to increase output and pass-on cost savings to consumers.
- (19) It is important to emphasise in this context that the evaluation of qualitative and quantitative evidence in the BE framework remains essentially a qualitative exercise and should be seen in conjunction with other evidence. As the Commission stated in the *Outokumpu/Inoxum* decision: "*The shift in the range should not be considered as giving a precise estimated of the likely price effect resulting from the transaction. Rather the change in the entire price range should be interpreted as qualitative evidence on the order of magnitude of the likely increase in market power.*"⁸
- (20) The Commission also notes that the Notifying Parties presented simulation results from a BE model in the context of a remedies assessment (combined with an efficiency claim), and not for the direct purpose of measuring the price effects from the Transaction. However, in this context, the Notifying Parties have also recognised the validity of the BE modelling approach for the purposes of measuring the effects of the unremedied Transaction on market power.⁹

⁶ The formulas derived in the Hirata (2009) paper are respectively for the upper bound price $\bar{p} = \operatorname{argmax}_p [(p - c) \min\{K_i, D(p) - K_{-i}\}]$ and for the lower bound price $(\underline{p} - c) \min\{K_i, D(\underline{p}) - K_{-i}\} = \pi_i(\bar{p})$. The parameters in these two formulae are defined as follows: \bar{p} is the upper bound price; \underline{p} is the lower bound price; subscript i indicates the supplier with the largest capacity (i.e. in this case, INEOS pre-merger and INEOS and Solvay post-merger); subscript $-i$ indicates all the other strategic suppliers that compete within the relevant geographic market; K is the total effective capacity in the market; c is the marginal cost of production; $D(\cdot)$ is the strictly decreasing twice continuously differentiable and concave demand function; and $\pi_i(\cdot)$ is the profit function of the largest supplier.

⁷ See M.6471 *Outokumpu/Inoxum*, Annex IV, paragraph 24.

⁸ See M.6471 *Outokumpu/Inoxum* decision Annex IV paragraphs 21-24.

⁹ In particular, in the submission of September 25, it is stated as follows: "*We remain of the view that the model is informative for the purpose of gauging the effectiveness of the proposed remedies, as well as the effects of the proposed transaction*" and "*In previous uses of the BE model in a merger context, the*

- (21) The Notifying Parties in their Response to the SO do not contest the Commission's presentation and interpretation of the model. The Commission thus concludes that the results from the BE model, as set out in paragraph (19), carry some evidentiary value and can thus complement its assessment of the transaction.

9. ADAPTING THE BE FRAMEWORK TO THE S-PVC INDUSTRY

- (22) The BE framework considers a single and homogenous good with a well-defined demand function, produced independently of any other good and subject to a well-defined capacity constraint. This section describes and discusses the assumptions and calibration¹⁰ choices that need to be made in order to fit this framework to the Commodity S-PVC market in NWE, largely on the basis of the assumptions adopted in the submissions by the Notifying Parties. The Commission complements this description of the model's assumptions by also discussing the limitations of the model in the specific context of the S-PVC market and of the Transaction.

9.1. Treatment of product and geographic differentiation

- (23) The BE model assumes that there is one homogeneous good produced by all competing suppliers. Thus, the good is the same regardless who is producing the good and there are no quality differences. Thus in equilibrium the homogenous good has only one price.
- (24) In the Commodity S-PVC class, however, there are different Commodity S-PVC types based on the different level of K-values showing price differences. From a demand perspective the substitution between different K-values is limited. As confirmed by the market investigation and described in the main body of the Decision, the majority of customers select the specific K-value on the basis of their final application, thus having limited possibility to switch among different K-values without major adjustments in their recipes/production processes with high costs and time loss. Thus the range of K-values among which they can substitute is more limited than the whole set of K-values in the Commodity S-PVC class. At least on the demand side, this evidence is consistent with the presence of switching costs. Substitution across K-value is less limited from a supply-side perspective.
- (25) The BE model does not assume any switching costs on the demand side nor on the production side. On the contrary, the model assumes that the Commodity S-PVC product is one good despite the existence of different K-values and it also assumes that producers can swing their productions across all K-values. Thus the model does not incorporate any friction that might exist on the side of customers in order to source a specific K-value or on the side of the supplier in order to produce a specific K-value. This removes an element that would soften competition in the Commodity S-PVC market.

Commission considered that in spite of this difficulty a shift upward in the range of prices could be seen as a predictive of a likely price increase. We agree with this pragmatic approach".

¹⁰ In the context of a simulation modelling exercise as the one presented in this Annex, "calibration" refers to the choice of input assumptions required to predict current (i.e. pre-merger) market outcomes. Calibration of the model to pre-merger outcomes provides some reassurance that the input assumptions used in the model are realistic. This point is also noted by the Notifying Parties in its submission of September 9 2013 in paragraph 43 at p.11.

- (26) Moreover, in the BE model suppliers compete for customers only on price. This implies that customers located within the relevant geographic market can choose across suppliers freely and solely based on price. For instance customers do not incur any costs when switching from a given supplier to an alternative supplier, e.g. additional cost of transport. Customers will therefore buy from the supplier offering the cheapest price provided the supplier can serve them given its capacity, no matter where the supplier is located within the relevant geographic market.
- (27) The model as proposed and calibrated by the Notifying Parties relies on the NWE geographic market, in line with previous Commission's practice. Based on the conclusions in the geographic market definition section of the Decision, NWE is the relevant geographic market on which the effect of the merger should be evaluated.

9.2. Treatment of joint production, variable production costs and margins for Commodity S-PVC in NWE

- (28) Cost is an important input for the calibration of the model. Moreover, the joint production issues that characterise the S-PVC market and the relative modelling assumptions have a direct impact on the computation of the cost base and of the resulting profit margin.
- (29) As set out in the main body of the Decision, Chlorine is a critical input in the production of Commodity S-PVC. Chlorine is produced jointly with caustic soda in fixed proportions. This implies that a foregone sale of a tonne of S-PVC implies giving up a sale of 0.65 tonnes of caustic soda.
- (30) As explained in the SO, it is standard practice in the industry to account for the joint production of S-PVC and caustic soda in the computation of S-PVC cost by subtracting the caustic soda margin from the S-PVC production cost (in case the production is vertically integrated) or the sale price of derivatives of Chlorine, like EDC or VCM (in case the producer does not rely on a vertically integrated production). This approach effectively lowers the production cost of S-PVC, ensuring that the correct economic decision is taken when deciding how much S-PVC to produce.
- (31) This approach is also in line with the BCG reports commissioned by the Notifying Parties which assessed the synergies from the transaction.¹¹ In these reports, the variable cost of S-PVC is computed by netting off the caustic soda credit. As a result, cost savings from the merger that accrue on the caustic soda side (e.g. lower transport cost for caustic soda) are treated as efficiency for S-PVC production.
- (32) In their submission of 25 September 2013, following an initial discussion with the Commission's services¹², the Notifying Parties adopted a modelling approach on the

¹¹ The BCG reports were commissioned by the Notifying Parties in order to evaluate the efficiencies of the transaction. See Annex 13 of the Form CO. The evidence presented in these documents is explained in detail in the main body of the Decision. The Parties' internal documents on margins are also consistent with the computation of variable S-PVC costs contained in the BCG reports, as set out in the SO.

¹² The alternative approach put forward in the submission of September 9 is based on the definition of a hypothetical composite product made up of one tonne of S-PVC and 0.66 tonnes of Caustic Soda. Under this assumption, the Notifying Parties proposed a calibration of the model that would use the variable production cost of this composite product, the demand elasticity for S-PVC and capacity levels

issue of the measurement of S-PVC cost and margins which is in line with the industry practice described above, and with the BCG reports. Under this approach, the variable costs of S-PVC are defined as the variable production costs of S-PVC minus the caustic soda margin, and it is also effectively assumed that S-PVC producers are price-takers in the caustic soda market. This simplifying assumption allows the modelling framework to directly focus on the issue at hand (i.e. the modelling of market power and merger effects in the S-PVC market). Given that it is also in line with standard industry practice, and with the Parties' own efficiencies submissions, the Commission considers this to be a reasonable modelling assumption.¹³

- (33) The Notifying Parties estimate NWE margins for INEOS and Solvay Commodity S-PVC relying on accounting data. The table below contains the results of the computation for the year 2012.

Table 10 Prices, margins and costs for S-PVC in 2012 (NWE)

	INEOS	Solvay
S-PVC price per S-PVC tonne (€)	[...]*	[...]*
Caustic soda price per S-PVC tonne (€)	[...]*	[...]*
Full chain margin per S-PVC tonne (€)	[...]*	[...]*
S-PVC variable cost per S-PVC tonne (€)	[...]*	[...]*

- (34) As shown in Table 1 above, the variable cost for INEOS is € [...]*/tonne which is equal to [...]*% of the S-PVC price in NWE (€[...]*/tonne). In percentage terms, this is equivalent to a gross margin of [...]*%.¹⁴ The equivalent computation for Solvay yields a gross margin of [...]*%.

9.3. Measurement of effective capacity for Commodity S-PVC in NWE

- (35) An important input in the model is the level of effective capacity. In this framework, effective capacity is defined as the capacity of Commodity S-PVC that suppliers can deploy for the purpose of serving the NWE market. In order to identify the effective capacity used for Commodity S-PVC in NWE, the Notifying Parties make the following three assumptions.
- (36) First, in order to keep the model tractable, it is assumed that firms with limited sales in NWE are non-strategic. This effectively means that firms whose plants are all situated outside NWE cannot increase their supply to NWE post-transaction by using more of their spare capacity.¹⁵ This in turn implies that the effective capacity of suppliers outside NWE is equal to their imports into NWE.¹⁶

for Commodity S-PVC. The Notifying Parties explain that the price increase of the composite product should be considered as an upper bound for the price of S-PVC.

¹³ In any event, the results presented by the Notifying Parties do not appear to be particularly sensitive to the assumptions made on the joint production issue.

¹⁴ The level of margin computed for INEOS is used by the Notifying Parties as the baseline modelling assumption. This level of margin is roughly in line with the Commission's computations of INEOS's gross margins set out in the main body of the Decision, and in Annex A.

¹⁵ However, as discussed below, the calibration of the elasticity of demand met by NWE suppliers can effectively capture the presence of this constraint.

¹⁶ Under this baseline assumption, the only two plants not located in NWE which can use their spare capacity level in order to increase supply to NWE are the plants of SolVin in Martorell and that of ShinEtsu in Estarreja.

- (37) Second, the Notifying Party assumes in the model that NWE suppliers cannot redirect their exports sales outside NWE to domestic sales into NWE. Thus the share of capacity that is currently devoted to exports of Commodity S-PVC is not used in a strategic fashion in the model and does not act as a constraint on prices.¹⁷ The implication of this assumption is that when computing spare capacity available to NWE suppliers the capacity of each firm is discounted by the volume of their exports outside NWE.
- (38) Third the Notifying Parties assume that all producers of non-Commodity S-PVC have production plants that can accommodate the production of Commodity and non-Commodity S-PVC alike. In fact, in the model the Notifying Parties use the full S-PVC production capacity of each supplier. Therefore, full supply side substitution between Commodity and non-Commodity S-PVC is assumed. However, the Notifying Parties also assume that S-PVC suppliers do not have incentive to respond to a price increase in Commodity S-PVC by changing their current production mix of Commodity and non-Commodity S-PVC. Consequently, in the computation of effective capacity, the production of non-Commodity S-PVC is subtracted from the measure of effective capacity. For instance, as noted by the Notifying Parties, one case in which such adjustment is required is Solvay whose capacity and production contain HISPVC, which is not Commodity S-PVC.
- (39) The inputs on capacity, production, NWE sales and effective capacity used in the baseline scenario put forward in the Notifying Parties' submissions are summarized in Table 2.

¹⁷ However, as discussed below, the calibration of the elasticity of demand met by NWE suppliers can effectively capture the presence of this constraint.

Table 11 Commodity S-PVC capacity, production and sales in 2012 (in '000 tonnes)

Supplier	Capacity	Production	NWE sales	Effective Capacity of Commodity S-PVC in NWE*
KemOne	[...]*	[...]*	[...]*	[...]*
Vinnolit	[...]*	[...]*	[...]*	[...]*
ShinEtsu	[...]*	[...]*	[...]*	[...]*
Anwil	[...]*	[...]*	[...]*	[...]*
Vestolit	[...]*	[...]*	[...]*	[...]*
BorsodChem	[...]*	[...]*	[...]*	[...]*
Aiscondel	[...]*	[...]*	[...]*	[...]*
Novakie	[...]*	[...]*	[...]*	[...]*
Solvay	[...]*	[...]*	[...]*	[...]*
<i>Jemeppe</i>	[...]*	[...]*	[...]*	[...]*
<i>Martorell</i>	[...]*	[...]*	[...]*	[...]*
<i>Rheinberg</i>	[...]*	[...]*	[...]*	[...]*
<i>Tavaux</i>	[...]*	[...]*	[...]*	[...]*
INEOS	[...]*	[...]*	[...]*	[...]*
<i>Beek</i>	[...]*	[...]*	[...]*	[...]*
<i>Mazingarbe</i>	[...]*	[...]*	[...]*	[...]*
<i>Aycliffe</i>	[...]*	[...]*	[...]*	[...]*
<i>Porsgrunn</i>	[...]*	[...]*	[...]*	[...]*
<i>Runcorn</i>	[...]*	[...]*	[...]*	[...]*
<i>Schkopau</i>	[...]*	[...]*	[...]*	[...]*
<i>Stenungsund</i>	[...]*	[...]*	[...]*	[...]*
<i>Wilhelmshaven</i>	[...]*	[...]*	[...]*	[...]*
Total	[...]*	[...]*	[...]*	[...]*

(1682) * In this table, effective capacity is computed as NWE sales, plus the difference between capacity (derated by a 5% discount factor) and production. Source: Notifying Parties.

9.4. Demand elasticity for Commodity S-PVC in NWE

- (40) In their submissions, the Notifying Parties also discuss the value of the elasticity of S-PVC demand in NWE which the model is based on. The demand elasticity that is proposed as a baseline assumption by the Notifying Parties is -1. The Notifying Parties explain that the economic literature does not provide any direct estimation of the elasticity of the S-PVC demand in NWE, and on this basis concludes that "*while the evidence is at best patchy, what exists tends to suggest that assuming an elasticity of -1 is reasonable.*" The assumption on the elasticity is important for the modelling results, and following the approach followed by the Notifying Parties, the Commission also presents results based on a lower elasticity figure (which in general tends to improve the calibration of the model).
- (41) It is also worth highlighting that the assumption on the elasticity of demand for NWE sales effectively embodies an assumption on how additional volumes of S-PVC (e.g. additional imports from outside NWE and/or a re-direction of current exports from NWE to other markets) may flow into the NWE market in response to a relative price change in NWE. Such additional volumes would reduce the residual demand faced by NWE suppliers as whole (including also the demand faced by the largest supplier, which in a BE framework determines the price range), and would thus make demand effectively more price elastic. The assumptions made in the submissions by the

Notifying Parties on imports into NWE and exports out of NWE effectively mean that the parameter used for demand elasticity captures both the response of NWE customers to price changes, and any additional impact of price changes of net imports into NWE (i.e. imports minus exports).

- (42) Furthermore, considering the uncertainty on the actual value of the parameter on elasticity of demand, it appears reasonable to use this parameter as one of the key calibration variables of the model in order to match the prediction of the model pre-merger with the pre-merger price. The sensitivity on the elasticity of demand presented in Section 4 also accommodates this purpose.

9.5. Limitations of the BE model with respect to multi-sourcing, cost differences of suppliers other than the largest and vertical integration

- (43) Finally, in describing the model's assumptions, it is important to emphasise three specific limitations of the BE model in the context of the S-PVC industry.
- (44) First, the model does not allow for multi-sourcing by customers. As described in the Decision, multi-sourcing can be an additional source of friction in the ability of customers to switch all or a significant share of their demand across suppliers because customers care about the identity of the suppliers and about having a balanced supply across several of them. This aspect can soften competition among rival suppliers in a way the BE model does not account for.
- (45) Second, the model is not well-suited to assess the impact of cost differences and/or cost changes across suppliers other than for the largest supplier. Based on the theoretical results of the BE framework, both the upper bound and the lower bound of the model are essentially determined by the supplier with the largest capacity. This is always true for the upper bound. Whilst there are situations in which the lower bound might be determined by the costs of smaller firms, this is only the case if cost asymmetries are particularly large. This implies that the model is not well-suited to assess the impact of cost asymmetries across suppliers relative to the largest supplier, or the impact of cost changes other than those that affect the largest firm (unless costs asymmetries are particularly large).¹⁸ Sensitivity analyses aimed at measuring the effect of changes in the costs of smaller firms are therefore unlikely to lead to any significant impact on the upper and lower bound of prices, essentially by model design. This consideration is important in the context of using the model in order to assess the viability and effectiveness of a given remedy package, in case of concerns on the cost competitiveness of a given set of assets. However, this limitation of the model does not imply that the BE framework is not suited to gain useful insight on the horizontal impact of the transaction, in particular in terms of the order of magnitude of the expected market power effects brought about by the horizontal concentration of capacity.
- (46) Finally, and also in relation to the second model limitation discussed above, the model is also not well suited to capture the impact of vertical integration in the S-

¹⁸ For an illustration of this feature of the model, see for instance the comparison between Table 3 and Table 7 in the submission of 9 September 2013, which yield essentially the same price results (and no effects at the upper end of the range) even though the cost of all firms other than the merging parties are increased by slightly over 5% in the scenario presented in Table 7 (relative to Table 3). By contrast a claimed [...] % efficiency effect for the merged entity always affects prices, both at the upper and lower end of the range (see Table 13 of the submission of 9 September).

PVC industry on the competitiveness of a given set of assets. To the extent that vertical integration impacts the costs of production for S-PVC, the model can only partially accommodate this feature, due to its limited ability to capture the impact of cost asymmetries across firms. Furthermore, as explained in the SO, vertical integration does not only have implications in terms of the level of production costs but also relates to non-cost elements (such as, for instance, lack of control of important inputs in the value chain, as explained by Vinnolit – see evidence contained in the main body of the Decision). The Notifying Parties in their Response to the SO agree with this conclusion.¹⁹

- (47) Subject to those limitations, the Commission, in line with the Notifying Parties, considers that the BE model offers a practical tool to assess the order of magnitude of the price effect of the horizontal overlap brought about by the proposed transaction. The Notifying Parties in their Response to the SO do not contest this conclusion.

9.6. Evaluation of the Notifying Parties' Response to the SO

- (48) In their Response to the SO, the Notifying Parties do not contest the fact that the BE model does not fully capture a number of features present in the S-PVC industry, such as different K-values, multi-sourcing, geographic differentiation and vertical integration. However, the Notifying Parties contest the fact that the BE model would necessarily forecast larger price increase if these features were to be reflected in the model. For example, the Notifying Parties state that "the Commission is simply speculating about potential problems, but has not provided any coherent analysis supporting the notion that these frictions would result in higher average prices or, more importantly, in higher increase in average price effects from the merger".
- (49) In relation to this claim by the Notifying Parties, it is important to note that whilst the Commission in the SO discussed characteristics that could soften competition relative to the competitive conditions captured by the BE model, it has not argued that these frictions would necessarily lead to a prediction of higher price effects from the proposed JV. Thus it is incorrect to claim that the Commission argued that the BE model necessarily under-estimates the price effects from the transaction. In the SO (and in this Decision) the Commission, for the sake of completeness only discusses the modelling assumptions made in the BE model (comparing them to the reality of the industry), and acknowledges that there are elements of the S-PVC industry that are not embedded in the model. More importantly, as explained in paragraph (47), both the Notifying Parties and the Commission are in agreement in recognising the value of the BE model in providing information on the likely price effects of the current transaction.
- (50) In the Response to the SO, the Notifying Parties also argue that in the context of the BE model underestimating rivals' cost does not lead to underestimating the price effect. In particular, the Notifying Parties state that "(provided that rival plants are not sufficiently disadvantaged to go out of business after the JV's formation) the lack of sensitivity of the BE model with respect to cost disadvantages of rival suppliers should not be considered as a source of bias, and it cannot justify treating the results of the BE model differently depending on whether the assessed transaction involves a divestment package."

¹⁹ See Annex 15 Section 3.

- (51) In relation to this second criticism, the Commission notes that in the SO it did not argue that the presence of cost disadvantages for some firms would be a source of bias for the price prediction of the model. The Commission simply stated that the BE model has limitations for the purposes of assessing the impact of cost asymmetries both on prices and on price effects from consolidation, and this consideration may be relevant in the relation to the evaluation of possible remedies.

10. RESULTS FROM THE BE MODEL SHOW THAT THE TRANSACTION IS LIKELY TO SUBSTANTIALLY INCREASE MARKET POWER IN NWE

- (52) In this section, the Commission presents a selected set of the simulation results from the BE model. The Commission does not give a full overview of all the results provided in the two submissions by the Notifying Parties, but instead limits the presentation to those results that in the Commission's view provide a better characterisation of the S-PVC market in NWE, and may result in better direct price predictions from the Transaction.
- (53) In particular, the Commission presents as a baseline scenario based on the approach to the measurement of S-PVC costs adopted by the Notifying Parties in their second submission, assuming a total nameplate capacity discounted by 5%, a price-cost margin equal to 20% (including the caustic soda margin), elasticity of demand equal to -1 and linear demand. This set of assumptions relates to the results contained in Table 7 in the Notifying Parties submission "Follow-up to economists' meeting" of 25 September 2013, and is closely related to the baseline scenario presented in that submission. Further sensitivities on this scenario are based on the assumptions used in Table 6.1, 6.2, 6.4 in the Annex of that submission.²⁰
- (54) The data used are from the year 2012 and the model is normalised to a price of Commodity S-PVC equal to 100. All the results are thus also normalised.
- (55) The Commission notes that the modelling results presented by the Notifying Parties also consider potential efficiencies in the overall evaluation of the price effect of the transaction. As set out in the Decision, the Notifying Party had initially evaluated efficiencies at a [...] % level of the S-PVC variable production costs, and then revised the level of efficiencies downwards to approximately [...] % of variable costs. For reasons that are discussed in the main body of the Decision, the Commission considers that most of these efficiencies do not meet the cumulative criteria set out in the Horizontal Merger Guidelines. However, and only for illustrative purposes, the simulation results presented below also comprise scenarios that include the totality of efficiency level claimed by Notifying Party (i.e. [...] % of the S-PVC variable production costs), in line with the approach followed by the Notifying Parties' economic advisors in their submissions. The results presented in Table 3 show that the JV leads to a significant price effect even under hypothetical scenarios which include all of the Parties' claimed efficiencies.²¹

²⁰ These results do not substantially differ from the scenarios presented in the submission of 9 September 2013.

²¹ The Commission relies on the theoretical results of Hirata (2009) when computing the results presented in this section of the Annex. As expected, there is no difference in the results when using a numerical solution (as adopted by the Notifying Parties) or a closed form in the case with symmetric costs, and no efficiencies. Moreover, the Commission has also verified potential discrepancies between the analytical

- (56) The range of rationalisable prices predicted by the BE framework in the baseline scenario are presented in Table 3. Under the baseline scenario, the model can only effectively replicate pre-merger prices at the upper bound of the price range, and it predicts a price effect from the merger of [...] *% (with and without claimed efficiencies).²²

Table 12 Baseline scenario – Capacity discount: 5%, Elasticity: -1, Margins: 20%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

- (57) The Notifying Parties presented a series of sensitivities for the results contained in their submissions. In particular, three sensitivity scenarios were presented, including a lower level of demand elasticity, lower costs (in line with Solvay's costs) and isoelastic demand. Results for these three sensitivities are presented Tables 4-6. The scenario with lower elasticity calibrates better than the baseline scenario, and results in higher price effects ([...]*% with and without claimed efficiencies). The scenario with lower costs calibrates less well than the baseline case, resulting in similar price effects. The scenario with isoelastic demand calibrates in a similar way to the baseline scenario showing however higher price effects ([...]*% with and without the claimed efficiencies).

solution and the Notifying Parties' computations also for the results with an assumed efficiency level of [...] *% and did not find any. Thus also in the context of the evaluation of the merger effects with efficiencies the Commission relies on Hirata's analytical results, since a fortiori these would hold also using the claimed efficiency level of [...] *%.

²² It is worth mentioning, as it is noted in the submission of September 25 2013, that using a discount of nameplate capacity equal to 5%, Porsgrunn and Stenungsund are imputed a capacity that is slightly smaller than the 2012 NWE sales. However, this small inconsistency does not appear when Ineos' plants portfolio is taken as a whole.

Table 13 Sensitivity on baseline scenario - Capacity discount: 5% , Elasticity: -0,75, Margins: 20%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

Table 14 Sensitivity on baseline scenario - Capacity discount: 5% , Elasticity: -1, Margins: 30%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

Table 15 Sensitivity on baseline scenario - Capacity discount: 5% , Elasticity: -1, Margins: 20%, Demand: isoelastic

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

- (58) As explained in the main text of the Decision, Kem One has been going through serious financial distress and currently involved in bankruptcy procedure. Thus, at present, there is still uncertainty on the future of Kem One under the new ownership. The Commission has therefore considered an additional sensitivity that assumes a reduced level for Kem One’s capacity, equal to the current level of NWE production. This is equivalent to assuming that Kem One does not hold any effective spare capacity pre- and post-merger. The purpose of this sensitivity check is twofold: on one hand capturing the limited competitive constraint that Kem One is currently exercising as described in the Decision and on the other hand reflecting that the competitive constraint exercised by Kem One will remain limited in the future. Table 7 shows the results of this additional scenario. Under this scenario, calibration is improved (both at the upper bound and the mid-point prices), and merger effects remain similar to those under the baseline case.

Table 16 Sensitivity on baseline scenario - Capacity discount: 5% and KemOne without spare capacity, Elasticity: -1, Margins: 20%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

- (59) The Commission has further complemented the analysis presented above by considering an adjusted baseline scenario where the capacity figures used by the Notifying Parties are not derated by the 5% discount factor and margins are set at 21%.²³ The revised assumption on capacity appears justified in light of the fact that in the Reply to requests for information this issue²⁴, the Notifying Party states that all the capacity figures provided to the Commission (and used in the BE model) are effective capacity levels rather than nameplate capacity. The Commission thus understands that these capacity figures are already derated relative to the nameplate capacity levels and do not need to be discounted further.²⁵
- (60) Results for the adjusted baseline scenario, and the same four sensitivities considered above, are presented in Tables 8-13. As expected, because of the higher levels of effective capacity used, the adjusted baseline calibrates pre-merger outcomes less well than the original baseline case, also under the assumption of low demand elasticity. The Kem One sensitivity calibrates pre-merger outcomes only at the upper bound. The price effects of the merger under the adjusted baseline and its sensitivities are higher than those of the baseline scenarios (with price effects without synergies in the range of [...]*%, and those with the claimed efficiencies in the range of [...]*%).

²³ For internal consistency the Commission uses the margins which are based on the Commission's computation of NWE margins by INEOS, as set out in Annex A.

²⁴ Response to the RFI of 16 May 2013 (Q.14) and RFI of 19 July 2013 (Q.7).

²⁵ There are also other imprecisions in the baseline scenario that result in minor changes to the results, and therefore that the Commission does not correct for. For example, on the basis of the Reply to the RFI of 18 November Q.1, the Notifying Party provides for Vestolit the amount of NWE sales without copolymers ([...]*kt) as opposed to the [...]*kt used in the baseline model, which contains copolymers. Consistent with the treatment of the other suppliers' sales of Commodity S-PVC to NWE, it would be appropriate to use the lower sales figure for Vestolit too. However, this results in only a minor change in the results. Similarly, the treatment of Solvay plant located in Martorell and the one of ShinEtsu located in Estarreja should be adjusted in order to treat them as non-strategic plants in line with the assumption made for the other productions facilities located outside NWE. Such an adjustment too has only a minor impact on results (as also shown in the submission of September 25).

Table 17 Adjusted baseline scenario – Capacity discount: 0%, Elasticity: -1, Margins: 21%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

Table 18 Sensitivity on adjusted baseline scenario – Capacity discount: 0%, Elasticity: -0,75, Margins: 21%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

Table 19 Sensitivity on adjusted baseline scenario – Capacity discount: 0%, Elasticity: -1, Margins: 30%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

Table 20 Sensitivity on adjusted baseline scenario – Capacity discount: 0%, Elasticity: -1, Margins: 21%, Demand: isoelastic

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

Table 21 Sensitivity on adjusted baseline scenario – Capacity discount: 0% and KemOne without spare capacity, Elasticity: -1, Margins: 21%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

- (61) Finally, the Commission has also considered an alternative scenario with the purpose of improving the overall calibration of the adjusted baseline scenario. In particular, in this scenario capacity is not derated, Kem One is assumed to hold no effective spare capacity, elasticity of demand equals -0.75, demand is linear and the margins are set at 20%. This scenario calibrates reasonably well (with the mid-point price close to the pre-merger level), and it predicts a price effect of [...]*% with no efficiencies, and [...]*% with the efficiencies claimed by the Notifying Parties.

Table 22 Alternative scenario – Capacity discount: 0% and KemOne without spare capacity, Elasticity: -0,75, Margins: 21%, Demand: linear

	Pre-JV	Post-JV	Post-JV with claimed efficiencies
Price Upper Bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Lower bound per S-PVC tonne	[...]*	[...]*	[...]*
Price Mid-point per S-PVC tonne	[...]*	[...]*	[...]*
Price Effect Mid-point	N/A	[...]*	[...]*

- (62) In their Response to the SO, the Notifying Parties did not contest any of the modelling results presented by the Commission on the basis of the BE model.²⁶

11. OVERALL CONCLUSIONS FROM THE BERTRAND-EDGEWORTH MODEL

- (63) The effects of the transaction, as predicted by the economic model put forward by the Notifying Parties and further complemented and verified by the Commission, consistently show a significant price increase in NWE.
- (64) In NWE, the model predicts a significant price increase in the range of [...]* for the scenarios developed by the Notifying Parties, and [...]* for the additional scenarios considered by the Commission.
- (65) The range of likely price effects predicted by the simulation model indicates that the Transaction would lead to a significant increase in the market power held by the JV in NWE.

²⁶ The results originally presented in the SO are very similar to those contained in this Annex, with the only minor exception being that in the adjusted Baseline scenarios described in the text, the SO used a higher gross margin figure for INEOS. Based on the comments provided by the Parties in the Response to the SO, the gross margins for INEOS computed by the Commission have been revised downwards, to a level that is close to those used by the Notifying Parties in their baseline scenarios. This revised assumption on margins has only a minor impact on the price effects predicted by the BE model under the alternative baseline scenario presented in this Annex.

- (66) The Commission notes that the economic submissions made by the Notifying Parties also incorporate their efficiency claims. Price effects of a significant magnitude (in the range of [...]*) are still predicted by the economic model even if one reflects the entirety of efficiency claims. Moreover, as is discussed in the detail in the main body of the Decision, the Commission considers that most of the efficiencies claimed by the Notifying Parties do not meet the cumulative criteria of the Horizontal Merger Guidelines.
- (67) Finally, it should be indicated that the Notifying Parties did not contest the results from the economic modelling in their Response to the SO.

Case M.6905 – INEOS/SOLVAY/JV

COMMITMENTS TO THE EUROPEAN COMMISSION

Pursuant to Articles 8(2) of Council Regulation (EC) No 139/2004 (the “**Merger Regulation**”), INEOS AG (“**INEOS**”) and Solvay SA (“**Solvay**”) (the “**Notifying Parties**”) hereby enter into the following Commitments (the “**Commitments**”) vis-à-vis the European Commission (the “**Commission**”) with a view to rendering the creation of a full-function joint venture between INEOS and Solvay (the “**Concentration**”) compatible with the internal market and the functioning of the EEA Agreement (the “**Joint Venture**”).

This text shall be interpreted in light of the Commission’s decision pursuant to Article 8(2) of the Merger Regulation to declare the Concentration compatible with the internal market and the functioning of the EEA Agreement (the “**Decision**”), in the general framework of European Union law, in particular in light of the Merger Regulation, and by reference to the Commission Notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (the “**Remedies Notice**”).

Section A. Definitions

1. For the purpose of the Commitments, the following terms shall have the following meaning:

Affiliated Undertakings: undertakings controlled by the Notifying Parties and/or by the ultimate parents of the Notifying Parties, including the joint venture, whereby the notion of control shall be interpreted pursuant to Article 3 of the Merger Regulation and in light of the Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (the “Consolidated Jurisdictional Notice”).

Assets: the assets that contribute to the current operation or are necessary to ensure the viability and competitiveness of the Divestment Businesses as indicated in Section B and described more in detail in the Schedule.

Closing: the transfer of the legal title to the Divestment Businesses to the Purchaser.

Closing Period: the period of [...] months from the approval of the Purchaser and the terms of sale by the Commission.

Confidential Information: any business secrets, know-how, commercial information, or any other information of a proprietary nature that is not in the public domain.

Conflict of Interest: any conflict of interest that impairs the Trustee's objectivity and independence in discharging its duties under the Commitments.

Divestment Business: the business or businesses as defined in Section B and in the Schedule which the Notifying Parties commit to divest.

Divestiture Trustee: one or more natural or legal person(s) who is/are approved by the Commission and appointed by the Notifying Parties and who has/have received from the Notifying Parties the exclusive Trustee Mandate to sell the Divestment Businesses to a Purchaser at no minimum price.

Effective Date: the date of adoption of the Decision.

First Divestiture Period: the period of [...] months from the Effective Date.

Hold Separate Manager: the person appointed by the Notifying Parties for the Divestment Businesses to manage the day-to-day business under the supervision of the Monitoring Trustee.

INEOS: INEOS AG, incorporated under the laws of Switzerland, with its registered office at Avenue des Uttins 3, CH-1180, Rolle, Vaud, Switzerland and registered under number CH-550-1066387-4.

Key Personnel: all personnel necessary to maintain the viability and competitiveness of the Divestment Businesses, as listed in the Schedule, including the Hold Separate Manager.

Monitoring Trustee: one or more natural or legal person(s) who is/are approved by the Commission and appointed by the Notifying Parties, and who has/have the duty to monitor the Notifying Parties' compliance with the conditions and obligations attached to the Decision.

Parties: the Notifying Parties and the undertaking that is the target of the concentration.

Personnel: all staff currently employed by the Divestment Businesses, including staff seconded to the Divestment Businesses, shared personnel as well as the additional personnel listed in the Schedule.

Purchaser: the entity or entities approved by the Commission as acquirer of the Divestment Businesses in accordance with the criteria set out in Section D.

Purchaser Criteria: the criteria laid down in paragraph 24 of these Commitments that the Purchaser must fulfil in order to be approved by the Commission.

Runcorn EDC Plant: the EDC plant site (comprising DC3 and EDC 1&2 plants) located at INEOS' Runcorn site, UK, that the Notifying Parties have committed to divest, as defined in the Schedule.

Runcorn MCP Site: the membrane chlorine plant located at INEOS' Runcorn site in the UK, that the Notifying Parties have committed to divest, as defined in the Schedule.

Schedule: the schedule to these Commitments describing more in detail the Divestment Businesses.

Solvay: Solvay SA, incorporated under the laws of Belgium, with its registered office at Rue de Ransbeek, 310, B-1120 Brussels, Belgium and registered under number 0403.091.220.

Trustee(s): the Monitoring Trustee and/or the Divestiture Trustee as the case may be.

Trustee Divestiture Period: the period of [...] months from the end of the First Divestiture Period.

Section B. The commitment to divest and the Divestment Business

Commitment to divest

2. In order to maintain effective competition, the Notifying Parties commit to divest, or procure the divestiture of the Divestment Businesses by the end of the Trustee Divestiture Period as a going concern to a purchaser and on terms of sale approved by the Commission in accordance with the procedure described in paragraph 25 of these Commitments. To carry out the divestiture, the Notifying Parties commit to find a purchaser and to enter into a final binding sale and purchase agreement for the sale of the Divestment Businesses within the First Divestiture Period. If the Notifying Parties have not entered into such an agreement at the end of the First Divestiture Period, the Notifying Parties shall grant the Divestiture Trustee an exclusive mandate to sell the Divestment Businesses in accordance with the procedure described in paragraph 37 in the Trustee Divestiture Period.
3. It is the Notifying Parties' preference to retain the option of selling the Divestment Businesses to two separate purchasers and implementing the Concentration on a hold

separate basis before the divestiture of the Divestment Businesses. However, the Notifying Parties hereby commit to defer implementation of the Concentration until they or the Divestiture Trustee have entered into a final binding sale and purchase agreement for the sale of the Divestment Businesses and the Commission has approved the purchaser and the terms of sale in accordance with paragraph 25. [...]*

4. The Notifying Parties shall be deemed to have complied with this commitment if:
 - (a) by the end of the Trustee Divestiture Period, the Notifying Parties or the Divestiture Trustee have entered into a final binding sale and purchase agreement and the Commission approves the proposed purchaser and the terms of sale as being consistent with the Commitments in accordance with the procedure described in paragraph 25; and
 - (b) the Closing of the sale of the Divestment Businesses to the Purchaser takes place within the Closing Period.

5. In order to maintain the structural effect of the Commitments, the Notifying Parties shall, for a period of 10 years after Closing, not acquire, whether directly or indirectly, the possibility of exercising influence (as defined in paragraph 43 of the Remedies Notice, footnote 3) over the whole or part of the Divestment Businesses, unless, following the submission of a reasoned request from the Notifying Parties showing good cause and accompanied by a report from the Monitoring Trustee (as provided in paragraph 51 of these Commitments), the Commission finds that the structure of the market has changed to such an extent that the absence of influence over the Divestment Businesses is no longer necessary to render the proposed concentration compatible with the internal market.

Structure and definition of the Divestment Business

6. The Divestment Businesses consist of:
 - (i) the S-PVC plant operated by INEOS at Mazingarbe, France ("**Mazingarbe**");
 - (ii) the S-PVC plant operated by INEOS at Beek Geleen, the Netherlands ("**Beek Geleen**");
 - (iii) the membrane electrolysis cellroom, the EDC/VCM plant and related production assets (including sodium hypochlorite production assets) operated by INEOS at Tessenderlo, Belgium and which are currently integrated with and supply VCM to Mazingarbe and Beek Geleen, excluding the mercury chlorine plant and associated caustic potash production assets ("**Tessenderlo**")

(Mazingarbe, Beek Geleen and Tessenderlo being together known as "**LVM**");
 - (iv) the VCM and S-PVC plants operated by INEOS at Wilhelmshaven, Germany ("**Wilhelmshaven**"); and
 - (v) the chlorine cell room (the "**Runcorn MCP Site**") and the EDC plant (the "**Runcorn EDC Plant**") located at INEOS' chemical site at Runcorn in the UK (together "**Runcorn**") which currently supplies EDC to Wilhelmshaven. The divestment of the Runcorn MCP Site will be structured as a [...]*

venture between the Joint Venture and the Purchaser for the production of chlorine (and associated by-products) (the “**MCP Joint Venture**”)

(Wilhelmshaven and Runcorn being together known as “**Wilhelmshaven / Runcorn**”).

Tessengerlo

7. Tessenderlo will be located on a shared site with the mercury cellroom and KOH business retained by the Joint Venture as well as the [...] business owned by [...] and the [...] business owned by a third party, [...]. As the largest on-site operator, the purchaser of LVM will operate the entire site at Tessenderlo (as INEOS does currently). Specifically:
 - (i) The Joint Venture and the purchaser of LVM will enter into an appropriate agreement for the purchaser to operate the mercury electrolysis cellroom and caustic potash production assets on a toll manufacturing basis on behalf of the Joint Venture. No physical carve-out of LVM from the retained business of the Notifying Parties will therefore be required.
 - (ii) INEOS currently operates the [...] business and the [...] business at Tessenderlo on a toll manufacturing basis. The benefit of these agreements will be transferred to the Purchaser who will therefore also operate these assets on a toll manufacturing basis.

8. The Joint Venture and the purchaser of LVM will enter into a further toll manufacturing agreement for the production by LVM of EDC on behalf of the Joint Venture. The Joint Venture will supply chlorine (from the mercury electrolysis cellroom) and ethylene to LVM, which LVM will then process into EDC on behalf of the Joint Venture and supply back to the Joint Venture. The Joint Venture will pay a tolling fee to LVM for this service. The purpose of this arrangement is to give the Joint Venture an outlet for the chlorine produced in the mercury electrolysis cellroom at Tessenderlo as a by-product of the production of caustic potash. This agreement will make use of surplus EDC capacity at Tessenderlo and will not constrain the ability of LVM to supply the VCM requirements of Mazingarbe, Beek Geleen at full capacity. The toll manufacturing agreement will not give the Notifying Parties any insight into LVM’s actual on-going costs of production.

Runcorn

9. The Runcorn MCP Site and Runcorn EDC Plant are located on a shared site with the JV at Runcorn. The Runcorn EDC Plant constitutes all the EDC production capacity at Runcorn. All of the assets which are used exclusively by the Runcorn EDC Plant, in particular the pipelines for transporting EDC out of the plant as well as those assets which are located within the perimeter of the Runcorn EDC Plant, will form part of the Divestment Business. The Joint Venture and the Purchaser will enter into appropriate access agreements, for the lifetime of the Runcorn EDC Plant, for shared assets which are located outside the perimeter of the Runcorn EDC Plant (and are therefore not transferred with the Divestment Business) but which contribute to or are necessary for the production of EDC, on terms which are normal in the PVC industry.

10. The Runcorn MCP Site constitutes all of the membrane-based chlorine production assets at Runcorn, including all assets which are used exclusively by the Runcorn MCP Site or are located within the perimeter of the Runcorn MCP Site.
11. The divestment of the Runcorn MCP Site will be structured as a legal joint venture between the Joint Venture and the Purchaser for the production of chlorine (and associated by-products) at the Runcorn MCP Site subject to the following principal terms:
 - (i) Joint legal [...] ownership by the Joint Venture and the Purchaser of all assets which are used exclusively by the Runcorn MCP Site;
 - (ii) The right for each of the Joint Venture and the Purchaser to off-take up to half of the chlorine produced at the Runcorn MCP Site annually;
 - (iii) The MCP Joint Venture [...]*
 - (iv) [...]*
 - (v) [...]*
 - (vi) The Joint Venture and the Purchaser will [...]*
 - (vii) Site services necessary for the maintenance of the Runcorn MCP Site [...]*
 - (viii) The Joint Venture and the MCP Joint Venture will [...]*
 - (ix) The Joint Venture and the MCP Joint Venture will [...]*
 - (x) The Joint Venture and the Purchaser [...]*
12. The legal and functional structure of the Divestment Businesses as operated to date is described in the Schedule. The Divestment Businesses, described in more detail in the Schedule, include (subject to third party consents where relevant) all assets and staff that contribute to the current operation or are necessary to ensure the viability and competitiveness of the Divestment Businesses, in particular:
 - (i) all tangible and intangible assets (including intellectual property rights, but excluding the right to use the NORVINYL brand under which the Divestment Businesses and other INEOS sites sell S-PVC products);
 - (ii) all licences, permits and authorisations issued by any governmental organisation for the benefit of the Divestment Businesses;
 - (iii) all contracts, leases, commitments and customer orders of the Divestment Businesses; all customer, credit and other records of the Divestment Businesses;
 - (iv) the Personnel; and

- (v) the benefit, for a transitional period of up to two years after Closing and on terms and conditions equivalent to those at present afforded to the Divestment Businesses, of all current arrangements under which the Notifying Parties or their Affiliated Undertakings supply products or services to the Divestment Businesses, as detailed in the Schedule, unless otherwise agreed with the Purchaser.

13. LVM also includes:

- (i) the benefit of a supply agreement with [...]*, for the supply of hydrochloric acid to Tessengerlo;
- (ii) the benefit of a supply agreement with the Notifying Parties on commercial terms for the supply of hydrogen and sodium hypochlorite which is produced in the Notifying Parties' mercury electrolysis cellroom at Tessengerlo. The purpose of this arrangement is to give the Notifying Parties an outlet for the by-products of caustic potash produced in the mercury electrolysis cellroom at Tessengerlo; and
- (iii) at the request of the Purchaser, INEOS commits to withdraw the termination notice it issued in [...]* in relation to its current ethylene supply agreement with [...]* at Tessengerlo or to adopt any other reasonable measure that might be required in order to ensure that the option of cancelling or continuing the supply contract with [...]* is available to the Purchaser.

14. Runcorn also includes:

- (i) at the option of the Purchaser, the benefit of a [...]* brine supply agreement from INEOS to the MCP Joint Venture, [...]* and
- (ii) at the option of the Purchaser, the benefit of a competitive [...]* supply agreement for ethylene from INEOS to the Runcorn EDC Plant, [...]*

Section C. Related commitments

Preservation of viability, marketability and competitiveness

15. From the Effective Date until Closing, the Notifying Parties shall preserve or procure the preservation of the economic viability, marketability and competitiveness of the Divestment Businesses, in accordance with good business practice, and shall minimise as far as possible any risk of loss of competitive potential of the Divestment Businesses. In particular the Notifying Parties undertake:

- (i) not to carry out any action that might have a significant adverse impact on the value, management or competitiveness of the Divestment Businesses or that might alter the nature and scope of activity, or the industrial or commercial strategy or the investment policy of the Divestment Businesses;
- (ii) to make available, or procure to make available, sufficient resources for the development of the Divestment Businesses, on the basis and continuation of the existing business plans;

- (iii) to take all reasonable steps, or procure that all reasonable steps are being taken, including appropriate incentive schemes (based on industry practice), to encourage all Key Personnel to remain with the Divestment Businesses, and not to solicit or move any Personnel to the Notifying Parties' remaining business. Where, nevertheless, individual members of the Key Personnel exceptionally leave the Divestment Businesses, the Notifying Parties shall provide a reasoned proposal to replace the person or persons concerned to the Commission and the Monitoring Trustee. The Notifying Parties must be able to demonstrate to the Commission that the replacement is well suited to carry out the functions exercised by those individual members of the Key Personnel. The replacement shall take place under the supervision of the Monitoring Trustee, who shall report to the Commission.

Hold-separate obligations

16. The Notifying Parties commit, from the Effective Date until Closing, to procure that the Divestment Businesses are kept separate from the businesses that the Notifying Parties will be retaining and, after closing of the notified transaction, to keep the Divestment Businesses separate from the businesses that the Notifying Parties are retaining and to ensure that unless explicitly permitted under these Commitments: (i) management and staff of the businesses retained by the Notifying Parties have no involvement in the Divestment Businesses; (ii) the Key Personnel and Personnel of the Divestment Businesses have no involvement in any business retained by the Notifying Parties and do not report to any individual outside the Divestment Businesses.
17. Until Closing, the Notifying Parties shall assist the Monitoring Trustee in ensuring that the Divestment Businesses are managed as distinct and saleable entities separate from the businesses which the Notifying Parties are retaining. Immediately after the adoption of the Decision, the Notifying Parties shall appoint a Hold Separate Manager. The Hold Separate Manager, who shall be part of the Key Personnel, shall manage the Divestment Businesses independently and in the best interest of the businesses with a view to ensuring their continued economic viability, marketability and competitiveness and their independence from the businesses retained by the Notifying Parties. The Hold Separate Manager shall closely cooperate with and report to the Monitoring Trustee and, if applicable, the Divestiture Trustee. Any replacement of the Hold Separate Manager shall be subject to the procedure laid down in paragraph 15(iii) of these Commitments. The Commission may, after having heard the Notifying Parties, require the Notifying Parties to replace the Hold Separate Manager.
18. To ensure that the Divestment Businesses are held and managed as separate entities the Monitoring Trustee shall exercise the Notifying Parties' rights as shareholder in the legal entity or entities that constitute the Divestment Businesses (except for its rights in respect of dividends that are due before Closing), with the aim of acting in the best interest of the businesses, which shall be determined on a stand-alone basis, as an independent financial investor, and with a view to fulfilling the Notifying Parties' obligations under the Commitments. Furthermore, the Monitoring Trustee shall have the power to replace members of the supervisory board or non-executive directors of the board of directors, who have been appointed on behalf of the Notifying Parties. Upon request of the Monitoring Trustee, the Notifying Parties shall resign as members of the boards or shall cause such members of the boards to resign.

Ring-fencing

19. The Notifying Parties shall implement, or procure to implement, all necessary measures to ensure that they do not, after the Effective Date, obtain any Confidential Information relating to the Divestment Businesses and that any such Confidential Information obtained by the Notifying Parties before the Effective Date will be eliminated and not be used by the Notifying Parties. This includes measures vis-à-vis the Notifying Parties' appointees on the supervisory board and/or board of directors of the Divestment Businesses. In particular, the participation of the Divestment Businesses in any central information technology network shall be severed to the extent possible, without compromising the viability of the Divestment Businesses. The Notifying Parties may obtain or keep information relating to the Divestment Businesses which is reasonably necessary for the divestiture of the Divestment Businesses or the disclosure of which to the Notifying Parties is required by law.

Non-solicitation clause

20. The Parties undertake, subject to customary limitations, not to solicit, and to procure that Affiliated Undertakings do not solicit, the Key Personnel transferred with the Divestment Business for a period of two years after Closing.

Due diligence

21. In order to enable potential purchasers to carry out a reasonable due diligence of the Divestment Businesses, the Notifying Parties shall, subject to customary confidentiality assurances and dependent on the stage of the divestiture process:
- (i) provide to potential purchasers sufficient information as regards the Divestment Businesses;
 - (ii) provide to potential purchasers sufficient information relating to the Personnel and allow them reasonable access to the Personnel.

Reporting

22. The Notifying Parties shall submit written reports in English on potential purchasers of the Divestment Businesses and developments in the negotiations with such potential purchasers to the Commission and the Monitoring Trustee no later than 10 days after the end of every month following the Effective Date (or otherwise at the Commission's request). The Notifying Parties shall submit a list of all potential purchasers having expressed interest in acquiring the Divestment Businesses to the Commission at each and every stage of the divestiture process, as well as a copy of all the offers made by potential purchasers within five days of their receipt.
23. The Notifying Parties shall inform the Commission and the Monitoring Trustee on the preparation of the data room documentation and the due diligence procedure and shall submit a copy of any information memorandum to the Commission and the Monitoring Trustee before sending the memorandum out to potential purchasers.

Section D. The purchaser

24. In order to be approved by the Commission, the Purchaser must fulfil the following criteria:

- (i) The Purchaser shall be independent of and unconnected to the Notifying Parties and their Affiliated Undertakings (this being assessed having regard to the situation following the divestiture).
 - (ii) The Purchaser shall be [...] and shall have the financial resources, proven expertise and incentive to maintain and develop the Divestment Businesses as viable and active competitive forces in competition with the Parties and other competitors;
 - (iii) The acquisition of the Divestment Businesses by the Purchaser must neither be likely to create, in light of the information available to the Commission, prima facie competition concerns nor give rise to a risk that the implementation of the Commitments will be delayed. In particular, the Purchaser must reasonably be expected to obtain all necessary approvals from the relevant regulatory authorities for the acquisition of the Divestment Businesses.
25. The final binding sale and purchase agreement (as well as ancillary agreements) relating to the divestment of the Divestment Businesses shall be conditional on the Commission's approval. When the Notifying Parties have reached an agreement with a purchaser, they shall submit a fully documented and reasoned proposal, including a copy of the final agreement(s), within one week to the Commission and the Monitoring Trustee. The Notifying Parties must be able to demonstrate to the Commission that the purchaser fulfils the Purchaser Criteria and that the Divestment Businesses are being sold in a manner consistent with the Commission's Decision and the Commitments. For the approval, the Commission shall verify that the purchaser fulfils the Purchaser Criteria and that the Divestment Businesses are being sold in a manner consistent with the Commitments including their objective to bring about a lasting structural change in the market. The Commission may approve the sale of the Divestment Businesses without one or more Assets or parts of the Personnel, or by substituting one or more Assets or parts of the Personnel with one or more different assets or different personnel, if this does not affect the viability and competitiveness of the Divestment Businesses after the sale, taking account of the proposed purchaser.

Section E. Trustee

I. Appointment procedure

26. The Notifying Parties shall appoint a Monitoring Trustee to carry out the functions specified in these Commitments for a Monitoring Trustee. The Notifying Parties commit not to close the Concentration before the appointment of a Monitoring Trustee.
27. If the Notifying Parties have not entered into a binding sale and purchase agreement regarding the Divestment Businesses one month before the end of the First Divestiture Period or if the Commission has rejected a purchaser proposed by the Notifying Parties at that time or thereafter, the Notifying Parties shall appoint a Divestiture Trustee. The appointment of the Divestiture Trustee shall take effect upon the commencement of the Trustee Divestiture Period.
28. The Trustee shall:

- (i) at the time of appointment, be independent of the Notifying Parties and their Affiliated Undertakings;
 - (ii) possess the necessary qualifications to carry out its mandate, for example have sufficient relevant experience as an investment banker or consultant or auditor; and
 - (iii) neither have nor become exposed to a Conflict of Interest.
29. The Trustee shall be remunerated by the Notifying Parties in a way that does not impede the independent and effective fulfilment of its mandate. In particular, where the remuneration package of a Divestiture Trustee includes a success premium linked to the final sale value of the Divestment Businesses, such success premium may only be earned if the divestiture takes place within the Trustee Divestiture Period.

Proposal by the Notifying Parties

30. No later than two weeks after the Effective Date, the Notifying Parties shall submit the name or names of one or more natural or legal persons whom the Notifying Parties propose to appoint as the Monitoring Trustee to the Commission for approval. No later than one month before the end of the First Divestiture Period or on request by the Commission, the Notifying Parties shall submit a list of one or more persons whom the Notifying Parties proposes to appoint as Divestiture Trustee to the Commission for approval. The proposal shall contain sufficient information for the Commission to verify that the person or persons proposed as Trustee fulfil the requirements set out in paragraph 28 and shall include:
- (i) the full terms of the proposed mandate, which shall include all provisions necessary to enable the Trustee to fulfil its duties under these Commitments;
 - (ii) the outline of a work plan which describes how the Trustee intends to carry out its assigned tasks;
 - (iii) an indication whether the proposed Trustee is to act as both Monitoring Trustee and Divestiture Trustee or whether different trustees are proposed for the two functions.

Approval or rejection by the Commission

31. The Commission shall have the discretion to approve or reject the proposed Trustee(s) and to approve the proposed mandate subject to any modifications it deems necessary for the Trustee to fulfil its obligations. If only one name is approved, the Notifying Parties shall appoint or cause to be appointed the person or persons concerned as Trustee, in accordance with the mandate approved by the Commission. If more than one name is approved, the Notifying Parties shall be free to choose the Trustee to be appointed from among the names approved. The Trustee shall be appointed within one week of the Commission's approval, in accordance with the mandate approved by the Commission.

New proposal by the Notifying Parties

32. If all the proposed Trustees are rejected, the Notifying Parties shall submit the names of at least two more natural or legal persons within one week of being informed of the rejection, in accordance with paragraphs 26 and 31 of these Commitments.

Trustee nominated by the Commission

33. If all further proposed Trustees are rejected by the Commission, the Commission shall nominate a Trustee, whom the Notifying Parties shall appoint, or cause to be appointed, in accordance with a trustee mandate approved by the Commission.

II. Functions of the Trustee

34. The Trustee shall assume its specified duties and obligations in order to ensure compliance with the Commitments. The Commission may, on its own initiative or at the request of the Trustee or the Notifying Parties, give any orders or instructions to the Trustee in order to ensure compliance with the conditions and obligations attached to the Decision and, in particular, in order to ensure that the terms and conditions of any agreement required for the implementation of the commitments are appropriate for the Purchaser to become a viable and active competitive force in the market for S-PVC.

Duties and obligations of the Monitoring Trustee

35. The Monitoring Trustee shall:
- (i) propose in its first report to the Commission a detailed work plan describing how it intends to monitor compliance with the obligations and conditions attached to the Decision.
 - (ii) oversee, in close co-operation with the Hold Separate Manager, the on-going management of the Divestment Businesses with a view to ensuring their continued economic viability, marketability and competitiveness and monitor compliance by the Notifying Parties with the conditions and obligations attached to the Decision. To that end the Monitoring Trustee shall:
 - (a) monitor the preservation of the economic viability, marketability and competitiveness of the Divestment Businesses, and the keeping separate of the Divestment Businesses from the business retained by the Parties, in accordance with paragraphs 15 and 16 of these Commitments;
 - (b) supervise the management of the Divestment Businesses as distinct and saleable entities, in accordance with paragraph 17 of these Commitments;
 - (c) with respect to Confidential Information:
 - determine all necessary measures to ensure that the Notifying Parties do not after the Effective Date obtain any Confidential Information relating to the Divestment Businesses,
 - *in particular strive for the severing of the Divestment Businesses' participation in a central information technology network to the*

extent possible, without compromising the viability of the Divestment Businesses,

- *make sure that any Confidential Information relating to the Divestment Businesses obtained by the Notifying Parties before the Effective Date is eliminated and will not be used by the Notifying Parties and*
 - *decide whether such information may be disclosed to or kept by the Notifying Parties as the disclosure is reasonably necessary to allow the Notifying Parties to carry out the divestiture or as the disclosure is required by law;*
- (d) monitor the splitting of assets and the allocation of Personnel between the Divestment Businesses and the Notifying Parties or Affiliated Undertakings;
- (iii) propose to the Notifying Parties such measures as the Monitoring Trustee considers necessary to ensure the Notifying Parties' compliance with the conditions and obligations attached to the Decision, in particular the maintenance of the full economic viability, marketability or competitiveness of the Divestment Businesses, the holding separate of the Divestment Businesses and the non-disclosure of competitively sensitive information;
- (iv) review and assess potential purchasers as well as the progress of the divestiture process and verify that, dependent on the stage of the divestiture process:
- (a) potential purchasers receive sufficient and correct information relating to the Divestment Businesses and the Personnel in particular by reviewing, if available, the data room documentation, the information memorandum and the due diligence process, and
 - (b) potential purchasers are granted reasonable access to the Personnel;
- (v) act as a contact point for any requests by third parties, in particular potential purchasers, in relation to the Commitments;
- (vi) provide to the Commission, sending the Notifying Parties a non-confidential copy at the same time, a written report within 15 days after the end of every month that shall cover the operation and management of the Divestment Businesses as well as the splitting of assets and the allocation of Personnel so that the Commission can assess whether the business is held in a manner consistent with the Commitments and the progress of the divestiture process as well as potential purchasers;
- (vii) promptly report in writing to the Commission, sending the Notifying Parties a non-confidential copy at the same time, if it concludes on reasonable grounds that the Notifying Parties is failing to comply with these Commitments;
- (viii) within one week after receipt of the documented proposal referred to in paragraph 25 of these Commitments, submit to the Commission, sending the Notifying Parties a non-confidential copy at the same time, a reasoned opinion

as to the suitability and independence of the proposed purchaser and the viability of the Divestment Businesses after the Sale and as to whether the Divestment Businesses are sold in a manner consistent with the conditions and obligations attached to the Decision, in particular, if relevant, whether the Sale of the Divestment Businesses without one or more Assets or not all of the Personnel affects the viability of the Divestment Businesses after the sale, taking account of the proposed purchaser;

(ix) assume the other functions assigned to the Monitoring Trustee under the *conditions and obligations attached to the Decision*.

36. If the Monitoring and Divestiture Trustee are not the same [legal or natural] persons, the Monitoring Trustee and the Divestiture Trustee shall cooperate closely with each other during and for the purpose of the preparation of the Trustee Divestiture Period in order to facilitate each other's tasks.

Duties and obligations of the Divestiture Trustee

37. Within the Trustee Divestiture Period, the Divestiture Trustee shall sell at no minimum price the Divestment Businesses to a purchaser, provided that the Commission has approved both the purchaser and the final binding sale and purchase agreement (and ancillary agreements) as in line with the Commission's Decision and the Commitments in accordance with paragraphs 24 and 25 of these Commitments. The Divestiture Trustee shall include in the sale and purchase agreement (as well as in any ancillary agreements) such terms and conditions as it considers appropriate for an expedient sale in the Trustee Divestiture Period. In particular, the Divestiture Trustee may include in the sale and purchase agreement such customary representations and warranties and indemnities as are reasonably required to effect the sale. The Divestiture Trustee shall protect the legitimate financial interests of the Notifying Parties, subject to the Notifying Parties' unconditional obligation to divest at no minimum price in the Trustee Divestiture Period.
38. In the Trustee Divestiture Period (or otherwise at the Commission's request), the Divestiture Trustee shall provide the Commission with a comprehensive monthly report written in English on the progress of the divestiture process. Such reports shall be submitted within 15 days after the end of every month with a simultaneous copy to the Monitoring Trustee and a non-confidential copy to the Notifying Parties.

III. Duties and obligations of the Parties

39. The Notifying Parties shall provide and shall cause its advisors to provide the Trustee with all such co-operation, assistance and information as the Trustee may reasonably require to perform its tasks. The Trustee shall have full and complete access to any of the Notifying Parties' or the Divestment Businesses' books, records, documents, management or other personnel, facilities, sites and technical information necessary for fulfilling its duties under the Commitments and the Notifying Parties and the Divestment Businesses shall provide the Trustee upon request with copies of any document. The Notifying Parties and the Divestment Businesses shall make available to the Trustee one or more offices on their premises and shall be available for meetings in order to provide the Trustee with all information necessary for the performance of its tasks.

40. The Notifying Parties shall provide the Monitoring Trustee with all managerial and administrative support that it may reasonably request on behalf of the management of the Divestment Businesses. This shall include all administrative support functions relating to the Divestment Businesses which are currently carried out at headquarters level. The Notifying Parties shall provide and shall cause its advisors to provide the Monitoring Trustee, on request, with the information submitted to potential purchasers, in particular give the Monitoring Trustee access to the data room documentation and all other information granted to potential purchasers in the due diligence procedure. The Notifying Parties shall inform the Monitoring Trustee on possible purchasers, submit lists of potential purchasers at each stage of the selection process, including the offers made by potential purchasers at those stages, and keep the Monitoring Trustee informed of all developments in the divestiture process.
41. The Notifying Parties shall grant or procure Affiliated Undertakings to grant comprehensive powers of attorney, duly executed, to the Divestiture Trustee to effect the sale (including ancillary agreements), the Closing and all actions and declarations which the Divestiture Trustee considers necessary or appropriate to achieve the sale and the Closing, including the appointment of advisors to assist with the sale process. Upon request of the Divestiture Trustee, the Notifying Parties shall cause the documents required for effecting the sale and the Closing to be duly executed.
42. The Notifying Parties shall indemnify the Trustee and its employees and agents (each an "Indemnified Party") and hold each Indemnified Party harmless against, and hereby agrees that an Indemnified Party shall have no liability to the Notifying Parties for, any liabilities arising out of the performance of the Trustee's duties under the Commitments, except to the extent that such liabilities result from the wilful default, recklessness, gross negligence or bad faith of the Trustee, its employees, agents or advisors.
43. At the expense of the Notifying Parties, the Trustee may appoint advisors (in particular for corporate finance or legal advice), subject to the Notifying Parties' approval (this approval not to be unreasonably withheld or delayed) if the Trustee considers the appointment of such advisors necessary or appropriate for the performance of its duties and obligations under the Mandate, provided that any fees and other expenses incurred by the Trustee are reasonable. Should the Notifying Parties refuse to approve the advisors proposed by the Trustee the Commission may approve the appointment of such advisors instead, after having heard the Notifying Parties. Only the Trustee shall be entitled to issue instructions to the advisors. Paragraph 42 of these Commitments shall apply mutatis mutandis. In the Trustee Divestiture Period, the Divestiture Trustee may use advisors who served the Notifying Parties during the Divestiture Period if the Divestiture Trustee considers this in the best interest of an expedient sale.
44. The Notifying Parties agree that the Commission may share Confidential Information proprietary to the Notifying Parties with the Trustee. The Trustee shall not disclose such information and the principles contained in Article 17 (1) and (2) of the Merger Regulation apply mutatis mutandis.
45. The Notifying Parties agree that the contact details of the Monitoring Trustee are published on the website of the Commission's Directorate-General for Competition and they shall inform interested third parties, in particular any potential purchasers, of the identity and the tasks of the Monitoring Trustee.

46. For a period of 10 years from the Effective Date the Commission may request all information from the Parties that is reasonably necessary to monitor the effective implementation of these Commitments.

IV. Replacement, discharge and reappointment of the Trustee

47. If the Trustee ceases to perform its functions under the Commitments or for any other good cause, including the exposure of the Trustee to a Conflict of Interest:
- (i) the Commission may, after hearing the Trustee and the Notifying Parties, require the Notifying Parties to replace the Trustee; or
 - (ii) the Notifying Parties may, with the prior approval of the Commission, replace the Trustee.
48. If the Trustee is removed according to paragraph 47 of these Commitments, the Trustee may be required to continue in its function until a new Trustee is in place to whom the Trustee has effected a full hand over of all relevant information. The new Trustee shall be appointed in accordance with the procedure referred to in paragraphs 26-33 of these Commitments.
49. Unless removed according to paragraph 47 of these Commitments, the Trustee shall cease to act as Trustee only after the Commission has discharged it from its duties after all the Commitments with which the Trustee has been entrusted have been implemented. However, the Commission may at any time require the reappointment of the Monitoring Trustee if it subsequently appears that the relevant remedies might not have been fully and properly implemented.

Section F. The review clause

50. The Commission may extend the time periods foreseen in the Commitments in response to a request from the Notifying Parties or, in appropriate cases, on its own initiative. Where the Notifying Parties request an extension of a time period, they shall submit a reasoned request to the Commission no later than one month before the expiry of that period, showing good cause. This request shall be accompanied by a report from the Monitoring Trustee, who shall, at the same time send a non-confidential copy of the report to the Notifying Parties. Only in exceptional circumstances shall the Notifying Parties be entitled to request an extension within the last month of any period.
51. The Commission may further, in response to a reasoned request from the Notifying Parties showing good cause waive, modify or substitute, in exceptional circumstances, one or more of the undertakings in these Commitments. This request shall be accompanied by a report from the Monitoring Trustee, who shall, at the same time send a non-confidential copy of the report to the Notifying Parties. The request shall not have the effect of suspending the application of the undertaking and, in particular, of suspending the expiry of any time period in which the undertaking has to be complied with.

Section G. Entry into force

52. The Commitments shall take effect upon the date of adoption of the Decision.

(Signed)

.....

duly authorised for and on behalf of
INEOS AG

(Signed)

.....

duly authorised for and on behalf of
Solvay SA

SCHEDULE

1. The Divestment Businesses comprise the S-PVC plant operated by INEOS at Mazingarbe, France, the S-PVC plant operated by INEOS at Beek Geleen, the Netherlands, and the membrane electrolysis cellroom, the EDC/VCM plant and related production assets operated by INEOS at Tessenderlo, Belgium (together, "LVM"); and the integrated VCM/S-PVC plant operated by INEOS at Wilhelmshaven, Germany, ("Wilhelmshaven") together with the membrane chlorine cellroom and the EDC plant located at INEOS' chemical site at Runcorn in the UK ("Runcorn"), as described below.

LVM

2. LVM comprises:
 - (i) INEOS' standalone S-PVC plant located at Chemin des Soldats, FR-62670, Mazingarbe, France, owned by INEOS Chlorvinyls France SAS, with registered office at the same address (the "**Mazingarbe**");
 - (ii) INEOS' standalone S-PVC plant located at Koolwaterstofstraat 1, Beek Geleen, NL-6161 RA, the Netherlands, owned by INEOS ChlorVinyls Limburg B.V., with registered office at 6160 AP Geleen, the Netherlands (the "**Beek Geleen**"); and
 - (iii) INEOS' membrane chlorine plant, EDC/VCM plant and related assets located at Heilig Hartlaan 21, Tessenderlo, B-3980, Belgium, owned by INEOS ChlorVinyls Belgium N.V., with registered office at the same address (the "**Tessenderlo**").
3. In accordance with paragraph 12 of these Commitments, subject to third party consent where relevant, LVM includes, but is not limited to:
 - (i) the following main tangible assets:
 - (a) the S-PVC plant owned and operated by INEOS at Chemin des Soldats, FR-62670 Mazingarbe, France, together with the lease of the land on which the S-PVC plant is located, the on-site pilot plant facility, and all of the manufacturing equipment installed at the S-PVC plant which contributes to the current operation or is necessary to ensure the viability and competitiveness of Mazingarbe. Such installed equipment includes the assets described in more detail in Annex 1;
 - (b) the S-PVC plant owned and operated by INEOS at Koolwaterstofstraat 1, Beek Geleen, NL-6161 RA, the Netherlands, together with the lease of the land on which the S-PVC plant is located, and all of the manufacturing equipment installed at the S-PVC plant which contributes to the current operation or is necessary to ensure the viability and competitiveness of Beek Geleen. Such installed equipment includes the assets described in more detail in Annex 1;
 - (c) the membrane electrolysis cellroom, the EDC/VCM plant and related production assets owned and operated by INEOS at Heilig Hartlaan 21, Tessenderlo, B-3980, Belgium, together with the lease of the land on

which the plants are located and all of the manufacturing equipment installed at the plants which contributes to the current operation or is necessary to ensure the viability and competitiveness of Tessenderlo. Such installed equipment includes the assets described in more detail in Annex 1;

- (d) all raw materials, stock, semi-finished and finished goods held at LVM at the time of the transfer to the purchaser of LVM;
 - (e) all the non-manufacturing facilities and buildings owned by LVM;
 - (f) access to EDC export facilities located at Tessenderlo which will remain in the ownership of the Joint Venture;
- (ii) all the intangible assets which contribute to the current operation or which are necessary to ensure the viability and competitiveness of LVM, including the following main intangible assets:
- (a) all of the intellectual property which is owned by LVM at the date of the completion of the divestment including product recipes (including operating know-how and recipe formulations and any customer specific recipe formulations) used to produce chlorine, EDC, VCM and related products at Tessenderlo and all S-PVC K-values manufactured by Mazingarbe and Beek Geleen; and
 - (b) with the exception of the intellectual property described at paragraph 4 below, a perpetual, irrevocable, non-exclusive, royalty-free licence or sub-licence for use for production at LVM of the intellectual property that is used in connection with the manufacture and / or sale of commodity S-PVC by Mazingarbe and Beek Geleen, and chlorine, EDC, VCM and related products by Tessenderlo, including in-house technology licences;
- (iii) all the licences, permits and authorisations which are held by LVM and which constitute all the licences, permits and authorisations needed to operate LVM including local authority, environmental and health and safety permits;
- (iv) the following main contracts, agreements, leases, commitments and understandings with LVM's current customers and suppliers, including in particular:
- (a) key supply contracts relating to Mazingarbe, as summarised in Annex 2 (Mazingarbe Supply Contracts);
 - (b) all customer contracts relating solely to Mazingarbe, in particular key customer contracts, a sample of which is summarised in Annex 3 (Mazingarbe Customer Contracts);
 - (c) key supply contracts relating to Beek Geleen, as summarised in Annex 4 (Beek Geleen Supply Contracts);

- (d) all customer contracts relating solely to Beek Geleen, in particular key customer contracts, a sample of which is summarised in Annex 5 (Beek Geleen Customer Contracts);
- (e) key supply contracts relating to Tessenderlo, as summarised in Annex 6 (Tessenderlo Supply Contracts);
- (f) all customer contracts relating solely to Tessenderlo, in particular key customer contracts, a sample of which is summarised in Annex 7 (Tessenderlo Customer Contracts);
- (g) the benefit of a supply agreement with a third party, [...]*, for the supply of hydrochloric acid to Tessenderlo; and
- (h) the benefit of a supply agreement with the Notifying Parties on commercial terms for the supply of hydrogen and sodium hypochlorite which is produced in the Notifying Parties' mercury electrolysis cellroom at Tessenderlo;

INEOS will use best endeavours to assign, novate or transfer the portion of contracts, leases and commitments which are held by a retained INEOS business but which are supplied by or to LVM. These include:

- (a) supply agreements pursuant to which PVC additives are supplied to the INEOS ChlorVinyls business (see further Annex 2 (Mazingarbe Supply Contracts) and Annex 4 (Beek Geleen Supply Contracts));
 - (b) customer contracts entered into by more than one INEOS entity. By the time of completion of the divestment, INEOS will use best endeavours to carve out separate customer contracts relating to the volumes supplied solely by LVM.
- (v) customer, credit and other records which are held by LVM, including the records contained in the [...]* (or other relevant INEOS entity) database which relate to LVM only;
 - (vi) in line with applicable employment laws and other relevant legislation, the Personnel shown in Annex 8 (LVM Personnel) (who are currently employed by LVM);
 - (vii) in line with applicable employment laws and other relevant legislation, the Key Personnel shown in Annex 8 (LVM Personnel) (who are currently employed by LVM); and
 - (viii) at the Purchaser's request, arrangements for the supply of products or services by the Notifying Parties (on substantially the same terms as those products or services are supplied to LVM at completion of the divestment) for a transitional period after divestment, including the right to use the brand name NORVINYL, for a transitional period after divestment in order to maintain the viability and competitiveness of LVM.

4. LVM shall not include:
- (i) any right to use the Parties' names or logos in any form;
 - (ii) use of the NORVINYL brand under which Mazingarbe and Beek Geleen sell S-PVC products, unless such usage is required for a transitional period, if requested by the Purchaser, in order to maintain the viability and competitiveness of LVM; and
 - (iii) certain assets relating to the production of caustic potash located at Tessenderlo, including:
 - (a) the mercury chlorine cellroom;
 - (b) the potassium chloride storage and brine system;
 - (c) the caustic potash storage and loading facilities located in Tessenderlo and [...]*;
 - (d) the caustic potash transfer pipelines on-site at Tessenderlo and between Tessenderlo and [...]*; and
 - (e) product purification equipment used solely for the removal of mercury from chlorine and caustic potash.
5. If there is any asset or personnel which is not covered by paragraph 3 of this Schedule but which is both used (exclusively or not) by LVM and necessary for the continued viability and competitiveness of LVM, that asset or adequate substitute will be offered to potential purchasers.

Wilhelmshaven

6. Wilhelmshaven comprises INEOS' VCM and S-PVC plants located at Sitz der Gesellschaften: Inhausersieler Straße 25, 26388 Wilhelmshaven, Germany, owned by INEOS Vinyls Deutschland GmbH, with registered office at the same address; and
7. Following paragraph 12 of these Commitments, subject to third party consent where relevant, Wilhelmshaven includes, but is not limited to:
- (i) the following main tangible assets:
 - (a) the VCM plant and the S-PVC plant owned and operated by INEOS at Sitz der Gesellschaftern: Inhausersieler Straße 25-26388, Wilhelmshaven, Germany, together with the long lease of the land on which the plants are located and all of the manufacturing equipment installed at the plants which contributes to the current operation or is necessary to ensure the viability and competitiveness of these plants. Such installed equipment includes all the assets described at Annex 9 (Wilhelmshaven Assets);

- (b) all raw materials, stock, semi-finished and finished goods held at Wilhelmshaven at the time of the transfer to the purchaser of Wilhelmshaven;
 - (c) all the non-manufacturing facilities and buildings owned by Wilhelmshaven;
- (ii) all of the intangible assets which contribute to the current operation or which are necessary to ensure the viability and competitiveness of Wilhelmshaven, including the following main intangible assets:
- (a) all of the intellectual property which is owned by Wilhelmshaven at the date of the completion of the divestment including product recipes (including know how and recipe formulations and any customer specific recipe formulations) used to produce VCM and all S-PVC K-grades manufactured by the plants; and
 - (b) with the exception of the intellectual property described at paragraph 8 below, a perpetual, irrevocable, non-exclusive, royalty-free licence or sub-licence for use for production at Wilhelmshaven of the intellectual property that is used in connection with the manufacture and / or sale of VCM and commodity S-PVC by Wilhelmshaven, including in-house technology licences;
- (iii) all the licences, permits and authorisations which are held by Wilhelmshaven and which constitute all the licences, permits and authorisations needed to operate Wilhelmshaven including local authority, environmental and health and safety permits;
- (iv) the following main contracts, agreements, leases, commitments and understandings with Wilhelmshaven's current customers and suppliers, including in particular:
- (a) key supply contracts as summarised in Annex 10 (Wilhelmshaven Supply Contracts); and
 - (b) all customer contracts relating solely to Wilhelmshaven, in particular, key customer contracts, a sample of which is summarised in Annex 11 (Wilhelmshaven Customer Contracts);

INEOS will use best endeavours to assign, novate or transfer the portion of contracts, leases and commitments which are held by a retained INEOS business but which are supplied by or to Wilhelmshaven. These include:

- (c) supply agreements pursuant to which PVC additives are supplied to the INEOS Chlorvinyls business (see further Annex 10 (Wilhelmshaven Supply Contracts));
- (d) customer contracts entered into by more than one INEOS entity. By the time of completion of the divestment, INEOS will use best endeavours

to carve out separate customer contracts relating to the volumes supplied solely by Wilhelmshaven.

- (v) customer, credit and other records which are held by Wilhelmshaven or which are held by any other INEOS entity in relation to Wilhelmshaven only;
- (vi) in line with the applicable employment laws and other relevant legislation, the required Personnel shown in Annex 12 (Wilhelmshaven Personnel) (who are currently employed by Wilhelmshaven);
- (vii) in line with the applicable employment laws and other relevant legislation, the Key Personnel shown in Annex 12 (Wilhelmshaven Personnel) (who are currently employed by Wilhelmshaven); and
- (viii) at the Purchaser's request, arrangements for the supply of products or services by the Notifying Parties or Affiliated Undertakings (on substantially the same terms as those products or services are supplied to Wilhelmshaven at completion of the divestment) for a transitional period after divestment, including the right to use the brand name NORVINYL for a transitional period in order to maintain the viability and competitiveness of Wilhelmshaven.

8. WILHELMSHAVEN SHALL NOT INCLUDE:

- (i) personnel based at other INEOS plants which dedicate a percentage of their workload to operations at Wilhelmshaven;
- (ii) any right to use the Parties' names or logos in any form; and
- (iii) use of the NORVINYL brand under which Wilhelmshaven sells S-PVC products, unless such usage is required for a transitional period, if requested by the Purchaser, in order to maintain the viability and competitiveness of Wilhelmshaven.

9. If there is any asset or personnel which is not covered by paragraph 7 of this Schedule but which is both used (exclusively or not) by Wilhelmshaven and necessary for the continued viability and competitiveness of Wilhelmshaven, that asset or adequate substitute will be offered to potential purchasers.

Runcorn

10. Runcorn comprises the membrane chlorine plant (the "Runcorn MCP Site") and the EDC production facilities (the "Runcorn EDC Plant") at INEOS' chemical site in Runcorn, the UK, owned by INEOS ChlorVinyls Limited, with registered office at Runcorn Site, South Parade, PO Box 9, Runcorn, Cheshire WA7 4JE, UK.
11. The Runcorn EDC Plant will be divested outright to the Purchaser. The divestment of the Runcorn MCP Site will be structured as a 50/50 joint venture between the Joint Venture and the Purchaser for the production of chlorine (and associated by-products) (the "MCP Site Joint Venture").

12. Following paragraph 12 of these Commitments, subject to third party consent where relevant, the Runcorn EDC Plant, which will be divested outright to a Purchaser, includes, but is not limited to:
- (i) the following main tangible assets:
 - (a) The Runcorn EDC Plant owned and operated by INEOS at South Parade, Runcorn, Cheshire WA7 4JE, the UK, together with the lease of the land on which the plant is located (a lease for the lifetime of the Runcorn EDC Plant) and all the installed manufacturing and other equipment which are located on site of the plant and contribute to its operation, as well as perpetual agreements for access to any other assets on the remainder of the Runcorn site which will remain in the ownership of the Joint Venture and which contribute to or are necessary to the operation of the Runcorn EDC Plant. Such installed equipment includes the assets set out in Annex 13 (Runcorn Assets);
 - (b) all raw materials, stock, semi-finished and finished goods held at or for the use of the Runcorn EDC Plant at the time of the transfer to the Purchaser;
 - (c) all the non-manufacturing facilities and buildings owned by or for the use of the Runcorn EDC Plant;
 - (ii) all of the intangible assets which contribute to the current operation or which are necessary to ensure the viability and competitiveness of the Runcorn EDC Plant, including the following main intangible assets:
 - (a) all of the intellectual property which is owned by the Runcorn EDC Plant at the date of the completion of the divestment used to produce EDC; and
 - (b) with the exception of the intellectual property described at paragraph 14 below, a perpetual, irrevocable, non-exclusive, royalty-free licence or sub-licence for use for production at Runcorn of the intellectual property that is used in connection with the manufacture and / or sale of EDC by Runcorn, including in-house technology licences;
 - (iii) all the licences, permits and authorisations which are held by the Runcorn EDC Plant and which constitute all the licences, permits and authorisations needed to operate the Runcorn EDC Plant including local authority, environmental and health and safety permits;
 - (iv) the following main contracts, agreements, leases, commitments and understandings with the Runcorn EDC Plant's current suppliers, including in particular:
 - (a) key supply contracts as summarised in Annex 14 (Runcorn Supply Contracts); and

- (b) the benefit of a [...] supply agreement with INEOS on terms and conditions [...] to supply ethylene to the EDC plants at Runcorn and on terms and conditions [...] to supply ethylene to the VCM plant at Wilhelmshaven, if the Purchaser so requires.

INEOS will use best endeavours to assign, novate or transfer the portion of contracts, leases and commitments which are held by a retained INEOS business but which are supplied by or to Runcorn. These include supply agreements (see further Annex 14 (Runcorn Supply Contracts)).

- (v) customer, credit and other records which are held by the Runcorn EDC Plant or which are held by any other INEOS entity in relation to the Runcorn EDC Plant only;
 - (vi) in line with the applicable employment laws and other relevant legislation, the required Personnel shown in Annex 16 (Runcorn Personnel) (who are currently employed by the Runcorn EDC Plant);
 - (vii) in line with the applicable employment laws and other relevant legislation, the Key Personnel shown in Annex 16 (Runcorn Personnel) (who are currently employed by the Runcorn EDC Plant); and
 - (viii) at the Purchaser's request, arrangements for the supply of products or services by the Notifying Parties or Affiliated Undertakings (on substantially the same terms as those products or services are supplied to the Runcorn EDC Plant at completion of the divestment) for a transitional period after divestment.
13. Following paragraph 12 of these Commitments, subject to third party consent where relevant, the Runcorn MCP Site, which will be transferred to the MCP Joint Venture, includes, but is not limited to:
- (i) the following main tangible assets:
 - (a) The Runcorn MCP Site owned and operated by INEOS at South Parade, Runcorn, Cheshire WA7 4JE, the UK, together with the lease of the land on which the plant is located (a lease for the lifetime of the Runcorn MCP Site) and all the installed manufacturing and other equipment which are located on site of the plant and contribute to its operation, as well as perpetual agreements for access to any other assets on the remainder of the Runcorn site which will remain in the ownership of the Joint Venture and which contribute to or are necessary to the operation of the Runcorn MCP Site. Such installed equipment includes the assets set out in Annex 13 (Runcorn Assets);
 - (b) all raw materials, stock, semi-finished and finished goods held at or for the use of the Runcorn MCP Site at the time of the transfer to the Purchaser;
 - (c) all the non-manufacturing facilities and buildings owned by or for the use of the Runcorn MCP Site ;

- (ii) all of the intangible assets which contribute to the current operation or which are necessary to ensure the viability and competitiveness of the Runcorn MCP Site, including the following main intangible assets:
 - (a) all of the intellectual property which is owned by the Runcorn MCP Site at the date of the completion of the divestment used to produce chlorine and associated by-products; and
 - (b) with the exception of the intellectual property described at paragraph 14 below, a perpetual, irrevocable, non-exclusive, royalty-free licence or sub-licence for use for production at the Runcorn MCP Site of the intellectual property that is used in connection with the manufacture and / or sale of chlorine and associated by-products by the Runcorn MCP Site, including in-house technology licences;
- (iii) all the licences, permits and authorisations which are held by the Runcorn MCP Site and which constitute all the licences, permits and authorisations needed to operate the Runcorn MCP Site including local authority, environmental and health and safety permits;
- (iv) the following main contracts, agreements, leases, commitments and understandings with the Runcorn MCP Site's current customers and suppliers, including in particular:
 - (a) key supply contracts as summarised in Annex 14 (Runcorn Supply Contracts); and
 - (b) all customer contracts relating solely to the Runcorn MCP Site, in particular, key customer contracts, a sample of which is summarised in Annex 15 (Runcorn Customer Contracts); and
 - (c) the benefit of a [...] supply agreement with INEOS to the MCP Joint Venture to supply brine to the Runcorn MCP Site, if the Purchaser so requires, [...].

INEOS will use best endeavours to assign, novate or transfer the portion of contracts, leases and commitments which are held by a retained INEOS business but which are supplied by or to the Runcorn MCP Site. These include:

- (d) supply agreements (see further Annex 14 (Runcorn Supply Contracts));
 - (e) customer contracts entered into by more than one INEOS entity. By the time of completion of the divestment, INEOS will use best endeavours to carve out separate customer contracts relating to the volumes supplied solely by the Runcorn MCP Site.
- (v) customer, credit and other records which are held by the Runcorn MCP Site or which are held by any other INEOS entity in relation to the Runcorn MCP Site only;

- (vi)* in line with the applicable employment laws and other relevant legislation, the required Personnel shown in Annex 16 (Runcorn Personnel) (who are currently employed by the Runcorn MCP Site);
 - (vii)* in line with the applicable employment laws and other relevant legislation, the Key Personnel shown in Annex 16 (Runcorn Personnel) (who are currently employed by the Runcorn MCP Site); and
 - (viii)* at the Purchaser's request, arrangements for the supply of products or services by the Notifying Parties or Affiliated Undertakings (on substantially the same terms as those products or services are supplied to the Runcorn MCP Site at completion of the divestment) for a transitional period after divestment.
14. The Runcorn EDC Plant and the Runcorn MCP Site shall not include:
- (i)* personnel based at other INEOS plants which dedicate a percentage of their workload to operations at Runcorn; and
 - (ii)* any right to use the Parties' names or logos in any form.
15. If there is any asset or personnel which is not covered by paragraphs 12 and 13 of this Schedule but which is both used (exclusively or not) by the Runcorn EDC Plant or the Runcorn MCP Site and necessary for the continued viability and competitiveness of the Runcorn EDC Plant or the Runcorn MCP Site, that asset or adequate substitute will be offered to potential purchasers (or to the MCP Joint Venture, as appropriate).

ANNEXES

Annex 1	LVM – Assets
Annex 2	Mazingarbe – Supply Contracts
Annex 3	Mazingarbe – Customer Contracts
Annex 4	Beek Geleen – Supply Contracts
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Annex 8	LVM – Personnel
Annex 9	Wilhelmshaven – Assets
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Annex 12	Wilhelmshaven - Personnel
Annex 13	Runcorn – Assets
Annex 14	Runcorn – Supply Contracts
Annex 15	Runcorn – Customer Contracts
Annex 16	Runcorn – Personnel

ANNEX 1: LVM – Assets

1. Mazingarbe, comprising:
 - (i) [...]*polymerisation reactors arranged across [...]* production streams;
 - (ii) One blow down tank per stream;
 - (iii) One steam stripping unit per stream;
 - (iv) One centrifuge per stream;
 - (v) Combined flash and fluid bed dryer per stream;
 - (vi) [...]* silos with [...]* total storage capacity;
 - (vii) A [...]*kg bagging line;
 - (viii) Warehouse storage capacity for [...]*e bags; and
 - (ix) Services and utilities including [...]* steam boilers; [...]*MW cogeneration unit; ammonia compressors and waste water treatment facility.

2. Beek Geleen, comprising:
 - (i) [...]* production lines consisting of [...]* polymerisation reactors each;
 - (ii) One recovery unit of [...]* watering pumps per production line;
 - (iii) One blow down tank per production line;
 - (iv) One centrifuge per production line;
 - (v) One fluid bed drier per production line;
 - (vi) [...]* cooling towers;
 - (vii) A bagging line with capacity of [...]* tonnes per shift;
 - (viii) A VCM storage sphere of [...]*m³;
 - (ix) On-site bulk PVC storage consisting of [...]* silos of [...]*m³ and [...]* silos of [...]*m³ with a total capacity of [...]*kt of S-PVC;
 - (x) On-site packed storage of [...]*kt of S-PVC;
 - (xi) Off-site storage of [...]*kt of S-PVC, located within [...]*km of the site; and

- (xii) Services and utilities including a wastewater stripper, a chilled water unit and a clean water sewer and a dirty water sewer, both leading to [...] central waste water treatment plant.

3. Tessengerlo, comprising:

- (i) Membrane electrolysis cellroom equipment and related chlorine and chlorine by-product assets, including:
 - (a) The membrane electrolysis chlorine cellroom with a nominal capacity of [...]kt, consisting of [...] electrolyzers with [...] elements each;
 - (b) The joint control room for the membrane chlorine cellroom and the mercury chlorine cellroom (the latter cellroom being excluded from the divestment);
 - (c) Chlorine treatment facilities;
 - (d) Hydrogen treatment facilities;
 - (e) Hydrochloric acid production assets;
 - (f) Sodium hypochlorite production assets;
 - (g) Caustic soda storage facilities of [...]tonnes adjacent to the [...]; and
 - (h) Sodium chloride loading facilities on the [...] and the salt slurry pipeline connecting them to Tessengerlo.
- (ii) EDC/VCM plant equipment, including [...] parallel production lines [...], together consisting of:
 - (a) [...] oxychlorination reactors;
 - (b) The high temperature direct chlorination reactor;
 - (c) [...] low temperature direct chlorination reactors;
 - (d) An EDC distillation train in each production line, each consisting of a heads column, a HiBo column and a vacuum column;
 - (e) [...] EDC cracking furnaces;
 - (f) A VCM distillation train in each production line, each consisting of a hydrochloric acid column, a VCM column, a Chloroprene column and a VCM stripper;
 - (g) [...] on-site VCM storage spheres, including [...] large spheres with a total storage capacity of [...] tonnes of VCM and [...] small spheres for rework storage;

- (h) [...] rented VCM storage spheres in the port of Antwerp with a total capacity of [...] tonnes of VCM;
 - (i) EDC storage facilities for [...] tonnes of EDC;
 - (j) [...] spheres of [...] m³ for storage of [...] hydrochloric acid and one sphere of [...] m³ for storage of [...] hydrochloric acid;
 - (k) A waste water stripper;
 - (l) A gas incinerator with scrubber; and
 - (m) An acidic sewer leading to a neutralization pit; a polluted sewer leading to the waste water stripper; and a rainwater sewer.
- (iii) Site services and support infrastructure, including:
- (a) The technical services supporting laboratory;
 - (b) A waste water treatment unit;
 - (c) Roads and piperacks;
 - (d) Office buildings including locker rooms, a guardhouse and medical facilities;
 - (e) A storeroom for spare equipment parts;
 - (f) Emergency services including a fire brigade service;
 - (g) Maintenance workshops;
 - (h) Waste water treatment and off site buffer basins located in [...];
 - (i) Utility facilities including a compressed air unit and steam boilers; and
 - (j) At the request of the Purchaser, the [...] electrical substation.

ANNEX 2: Mazingarbe - Supply Contracts

Table 23: Key Feedstocks

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to Mazingarbe
PVC additives and process chemicals	INEOS Chlorvinyls ("ICV")	[...]*	Supply of initiators to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of process chemicals to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of primary suspending agent to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of anti-foam product to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of various PVC additives to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of primary suspending agent to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of primary suspending agent to ICV	[...]*	[...]*	[...]*	[...]*

Table 24: Utilities / Site Services

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to Mazingarbe	Any Other Comments
Electricity	INEOS ChlorVinyls France ("ICV France")	[...]*	Contract for the supply of electricity of [...]*.	[...]*	[...]*	[...]* [...]*	[...]*	
Electricity	ICV France	[...]*	Contract for the supply of electricity and balancing services [...]*.	[...]*	[...]*.	[...]*	[...]*	
Natural gas	ICV France	[...]*	[...]* contract for the supply of natural gas to the Mazingarbe site.	[...].	[...]*	[...]*	[...]*	

Table 25: Land

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Restriction on Assignment	Comments
Lease	INEOS France	[...]*	Contract for the lease of the land on which Mazingarbe is located	[...]*	[...]*	[...]*

ANNEX 3: Mazingarbe - Customer Contracts

Summary of INEOS' contracts with top 10 customers of commodity S-PVC in respect of Mazingarbe (2012)

Ranking	Customer ¹	Brief Description	Treatment for Divestment
1.	[...]*	[...]*	[...]*
2.	[...]*	[...]*	[...]*
3.	[...]*	[...]*	[...]*
4.	[...]*	[...]*	[...]*
5.	[...]*	[...]*	[...]*
6.	[...]*	[...]*	[...]*
7.	[...]*	[...]*	[...]*
8.	[...]*	[...]*	[...]*
9.	[...]*	[...]*	[...]*
10.	[...]*	[...]*	[...]*

Note: [1] Excluding customers outside the EEA.

ANNEX 4: Beek Geleen - Supply Contracts

Table 1: Key Feedstocks

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to Beek Geleen
PVC additives and process chemicals	INEOS ChlorVinyls ("ICV")	[...]*	Supply of initiators to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of process chemicals to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of primary suspending agent to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of anti-foam product to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of various PVC additives to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of primary suspending agent to ICV	[...]*	[...]*	[...]*	[...]*
		[...]*	Supply of primary suspending agent to ICV	[...]*	[...]*	[...]*	[...]*

Table 2: Utilities / Site Services

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to Beek Geleen	Any Other Comments
Utilities provision and waste handling	INEOS ChlorVinyls Belgium N.V.	[...]*	Provision of utilities by [...]* including the provision of steam, electricity, condensate, nitrogen, compressed air, demineralised water, flocculated water and drinking water; effluent purification; the removal of waste water; the processing of waste water; and the removal of other waste materials.	[...]*	[...]*.	[...]*	[...]*	
Site services	INEOS ChlorVinyls Belgium N.V.	[...]*	Provision of site services, split into mandatory and optional services. Mandatory services comprise: provision of all permanent personnel; and production site related services including porter services, security department, fire brigade, canteen service, lighting of the site, pavements and roads, postal service and telephone system.	[...]*	[...]*	[...]*	[...]*	

Table 3: Land

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Restriction Assignment	on	Comments
Lease	INEOS ChlorVinyls Limburg B.V.	[...]*	Contract for the lease of the land on which Beek Geleen is located and use of the common infrastructure.	[...]*	[...]*		[...]*

ANNEX 5: Beek Geleen - Customer Contracts

Summary of INEOS' contracts with top 10 customers of commodity S-PVC in respect of Beek Geleen (2012)

Ranking	Customer¹	Brief Description	Treatment for Divestment
1.	[...]*	[...]*	[...]*
2.	[...]*	[...]*	[...]*
3.	[...]*	[...]*	[...]*
4.	[...]*	[...]*	[...]*
5.	[...]*	[...]*	[...]*
6.	[...]*	[...]*	[...]*
7.	[...]*	[...]*	[...]*
8.	[...]*	[...]*	[...]*
9.	[...]*	[...]*	[...]*
10.	[...]*	[...]*	[...]*

Note: [1] Excluding customers outside the EEA.

ANNEX 6: Tessenderlo - Supply Contracts

Table 1: Key Feedstocks

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to Tessenderlo	Any Other Comments
Ethylene	INEOS ChlorVinyls ("ICV")	[...]*	Contract for the supply of ethylene for EDC/VCM production	[...]*	[...]*	[...]*	[...]*	
Ethylene	ICV	[...]*	Contract for the supply of ethylene for EDC/VCM production	[...]*	[...]*	[...]*	[...]*	
Sodium chloride (salt)	ICV	[...]*	Supply of sodium chloride for electrolysis	[...]*	[...]*	[...]*	[...]*	
Sulphuric acid	ICV	[...]*	Supply of virgin sulphuric acid [...]*	[...]*	[...]*	[...]*	[...]*	[...]*
Hydrochloric acid	ICV	[...]*	Supply of hydrochloric acid [...]*	[...]*	[...]*	[...]*	[...]*	
Nitrogen	ICV	[...]*	Supply of bulk nitrogen	[...]*	[...]*	[...]*	[...]*	[...]*
Nitrogen	ICV	[...]*	Supply of bulk nitrogen	[...]*	[...]*	[...]*	[...]*	[...]*

Table 2: Utilities / Site Services

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to Tessenderlo	Any Other Comments
Electricity	INEOS ChlorVinyls Belgium NV (“ ICV Belgium ”)	ICV Belgium buys electricity on the wholesale market from a combination of: (1)[...]* (2) [...]* (3) [...]*	Purchase of electricity from a range of suppliers [...]*. ICV Belgium transports the electricity to the Tessenderlo site.	[...]*	[...]*	(1) [...]* (2) [...]* (3) [...]*	[...]*	
Natural gas	ICV Belgium	[...]*	Supply of natural gas to the Tessenderlo plant [...]*	[...]*	[...]*	[...]*	[...]*	
Waste incineration	ICV Belgium	[...]*	The incineration of chlorinated wastes from VCM and benzylchloride manufacturing.	[...]*	[...]*	[...]*	[...]*	

ANNEX 7: Tessenderlo - Customer Contracts

Table 1: Summary of INEOS' contracts with top 10 customers of caustic soda sold from Tessenderlo (2012)

Ranking	Customer ¹	Brief Description	Treatment for Divestment
1.	[...]*	[...]*	[...]*
2.	[...]*	[...]*	[...]*
3.	[...]*	[...]*	[...]*
4.	[...]*	[...]*	[...]*
5.	[...]*	[...]*	[...]*
6.	[...]*	[...]*	[...]*
7.	[...]*	[...]*	[...]*
8.	[...]*	[...]*	[...]*
9.	[...]*	[...]*	[...]*
10.	[...]*	[...]*	[...]*

Note: [1] Excluding customers outside the EEA.

Table 2: Summary of INEOS' contracts with top 10 customers of sodium hypochlorite sold from Tessenderlo (2012)

Ranking	Customer¹	Brief Description	Treatment for Divestment
1.	[...]*	[...]*	[...]*
2.	[...]*	[...]*	[...]*
3.	[...]*	[...]*	[...]*
4.	[...]*	[...]*	[...]*
5.	[...]*	[...]*	[...]*
6.	[...]*	[...]*	[...]*
7.	[...]*	[...]*	[...]*
8.	[...]*	[...]*	[...]*
9.	[...]*	[...]*	[...]*
10.	[...]*	[...]*	[...]*

Note: [1] Excluding customers outside the EEA.

ANNEX 8: LVM – Personnel

Table 1
Details of personnel employed at Mazingarbe

Department	Personnel
Site Management	[...]*
Operations	[...]*
Site services	[...]*
Maintenance	[...]*
Technology and engineering	[...]*
HSE	[...]*
HR	[...]*
Finance / IT	[...]*
Apprentices	[...]*
TOTAL	[...]*

Table 2
Details of personnel employed at Beek Geleen

Department	Personnel
Site Management	[...]*
Operations	[...]*
Maintenance	[...]*
Laboratory	[...]*
Technology and engineering	[...]*
Site services	[...]*
HR	[...]*
HSE	[...]*
TOTAL	[...]*

Table 3
Details of personnel employed by LVM
in relation to Tessenderlo

Department	Personnel
Site Management	[...]*
Finance and IT	[...]*
Operations	[...]*
Maintenance	[...]*
Technology and engineering	[...]*
Site services	[...]*
HR	[...]*
HSE	[...]*
Laboratory	[...]*
Sales and customer support	[...]*
Long term sick leave	[...]*
Sub-total employed by Tessenderlo	[...]*
Long-term contractor / agency employees	[...]*
TOTAL	[...]*

Table 4
Details of personnel employed by LVM who provide services to LVM as a whole
(Mazingarbe, Beek Geleen and Tessenderlo)

Department	Personnel
Planning	[...]*
Procurement	[...]*
Sales and customer support	[...]*
Technical services	[...]*
TOTAL	[...]*

ANNEX 9: Wilhelmshaven – Assets

1. Wilhelmshaven, comprising:
 - (i) VCM plant equipment, including:
 - (a) [...] VCM production lines, each with an oxychlorination reactor;
 - (b) One EDC distillation sequence;
 - (c) One VCM distillation sequence;
 - (d) [...] EDC storage tanks with total capacity of [...]kt; and
 - (e) [...] VCM storage spheres;
 - (ii) S-PVC plant equipment, including:
 - (a) [...] production lines, each with [...] autoclaves, a stripper and a drying section;
 - (b) Storage facilities and [...] silos;
 - (c) Loading facilities for shipments via road, rail and ship; and
 - (d) Bagging facilities; and
 - (iii) Site services including:
 - (a) Loading and unloading facilities on the deep water jetty for raw materials and feedstocks;
 - (b) A boiler house; and
 - (c) A waste water purification unit.

ANNEX 10: Wilhelmshaven – Supply Contracts

Table 26: Key Feedstocks

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to the plant	Comments
VCM	INEOS ChlorVinyls Ltd. (German principal)	INEOS ChlorVinyls companies (Toll manufacturing agreement)	VCM supply	[...]*	[...]*	[...]*	[...]*	Internal INEOS agreements
EDC	INEOS ChlorVinyls Ltd. (German principal)	(i) INEOS ChlorVinyls companies	EDC supply	[...]*	[...]*	[...]*	[...]*	Internal INEOS ChlorVinyls agreement
		(ii) External suppliers [...]*		[...]*	[...]*	[...]*	[...]*	
Ethylene	INEOS Vinyls Deutschland GmbH	(i) [...]*	Ethylene supply	[...]*	[...]*	[...]*	[...]*	[...]*
		(ii) [...]*		[...]*	[...]*	[...]*	[...]*	
Catalysts, additives, chemicals	(i) INEOS ChlorVinyls entities incl. INEOS Vinyls Deutschland GmbH	[...]*	PVC additives	[...]*	[...]*	[...]*	[...]*	
	(ii) INEOS ChlorVinyls entities incl. INEOS Vinyls Deutschland GmbH	(ii) [...]*	Supply of ECF	[...]*	[...]*	[...]*	[...]*	
	(iii) INEOS ChlorVinyls entities incl. INEOS Vinyls	(iii) [...]*	Supply of Alcotex products (granulating agents)	[...]*	[...]*	[...]*	[...]*	

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to the plant	Comments
	Deutschland GmbH (iv) INEOS ChlorVinyls entities incl. INEOS Deutschland GmbH	(iv) [...]*	Supply of LPO (initiator)	[...]*	[...]*	[...]*	[...]*	
	(v) INEOS Vinyls Deutschland GmbH	[...]*	Supply of Caustic Soda	[...]*	[...]*	[...]*	[...]*	
Packages	INEOS Vinyls Deutschland GmbH	[...]*	Supply of pallets, bags and other packaging materials	[...]*	[...]*	[...]*	[...]*	[...]*

Table 27: Utilities / Site Services

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to the plant	Comments
Site services	INEOS Vinyls Deutschland GmbH	[...]*	Engineering and Maintenance Service (Site Main contract)	[...]*	[...]*	[...]*	[...]*	
Utilities	INEOS Vinyls Deutschland GmbH	(i) [...]*	Industrial water supply agreement	[...]*	[...]*	[...]*	[...]*	
		(ii) [...]*	Industrial gases supply agreement [...]*	[...]*	[...]*	[...]*	[...]*	
Electricity	INEOS Vinyls Deutschland GmbH	(i) [...]*	Electricity Grid connection agreement	[...]*	[...]*	[...]*	[...]*	
		(ii) [...]*	Electricity Grid usage agreement	[...]*	[...]*	[...]*	[...]*	
		(iii) [...]*	Electricity supply umbrella agreement	[...]*	[...]*	[...]*	[...]*	
		(iv) [...]*	Electricity supply agreement [...]*	[...]*	[...]*	[...]*	[...]*	
Natural gas	INEOS Vinyls Deutschland GmbH	[...]*	Natural gas supply agreement	[...]*	[...]*	[...]*	[...]*	
Logistics transport	INEOS Vinyls Sales GmbH INEOS ChlorVinyls Ltd.	[...]*	Bulk and bag transport of PVC to customers	[...]*	[...]*	[...]*	[...]*	[...]*

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Price Setting Mechanism	Restriction on Assignment	Transport to the plant	Comments
	(German Principal)							

Table 28: Land and Infrastructure

Product / Service	INEOS Entity	Supplier	Brief Description	Term / Termination	Restriction on Assignment	Comments
Operation and Maintenance Service of Jetty	(i) INEOS Chlor Atlantik GmbH	(i) [...]*	Agreement for the supply of services regarding the Jetty and the ethylene tanks in Wilhelmshaven (PSA)	[...]*	[...]*	[...]*
Jetty turnover agreement	(ii) INEOS ChlorVinyls Ltd. (German Principal)	(ii) [...]*	Turnover of products and raw materials regarding the Jetty and the ethylene tanks at Wilhelmshaven	[...]*	[...]*	[...]*
Lease of Jetty	(iii) INEOS Chlor Atlantik GmbH	(iii) [...]*	Jetty lease agreement	[...]*	[...]*	[...]*.

ANNEX 11: Wilhelmshaven - Customer Contracts

Summary of INEOS' contracts with top 10 EEA customers of commodity S-PVC in respect of Wilhelmshaven (2012)

Ranking	Customer	Brief Description	Treatment for Divestment
1	[...]*	[...]*	[...]*
2	1. [...]*	2. [...]*	3. [...]*
3.	4. [...]*	5. [...]*	6. [...]*
4	7. [...]*	8. [...]*	9. [...]*
5	10. [...]*	11. [...]*	12. [...]*
6	13. [...]*	14. [...]*	15. [...]*
7	16. [...]*	17. [...]*	18. [...]*
8	19. [...]*	20. [...]*	21. [...]*
9	22. [...]*	23. [...]*	24. [...]*
10	25. [...]*	26. [...]*	27. [...]*

ANNEX 12: Wilhelmshaven – Personnel

Details of personnel employed at Wilhelmshaven

Department	Personnel	Of whom Key Personnel
Management	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* 	<ul style="list-style-type: none"> • [...]*
Operations	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* 	<ul style="list-style-type: none"> • [...]* [...]* - [...]* - [...]* [...]* - [...]* [...]* [...]* - [...]* [...]* [...]*
Maintenance and Engineering	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* 	<ul style="list-style-type: none"> • [...]* [...]* - [...]* - [...]* - [...]* - [...]* - [...]* - [...]* - [...]* - [...]*
Site services	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* • [...]* 	
Sales and customer support	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* 	
Planning and Logistics	<ul style="list-style-type: none"> • [...]* [...]* [...]* 	
Procurement	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* 	<ul style="list-style-type: none"> • [...]* [...]*
HR	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* 	[...]*
Finance /IT	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* 	<ul style="list-style-type: none"> [...]* ○ [...]*

Department	Personnel	Of whom Key Personnel
	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* 	
HSEQ	<ul style="list-style-type: none"> • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* • [...]* 	<ul style="list-style-type: none"> • [...]*
TOTAL	[...]*	[...]*

ANNEX 13: Runcorn – Assets

1. Runcorn, including:
 - (i) The Runcorn MCP Site, including:
 - (a) [...] chlorine streams, consisting of [...] electrolyzers in each;
 - (b) Water and cooling systems;
 - (c) De-chlorination and scrubbing tower;
 - (d) Brine purification system;
 - (e) Liquid caustic soda evaporation system;
 - (f) Pipelines for the transport of hydrogen, gaseous chlorine and liquid caustic soda out of the Runcorn MCP Site;
 - (g) Sodium hypochlorite plant and loading facilities;
 - (h) [...] hydrochloric acid synthesis columns; and
 - (i) All equipment, pipes and tanks within the boundary of the Runcorn MCP Site; and
 - (ii) The Runcorn EDC Plant, including:
 - (a) EDC reactors;
 - (b) Distillation columns;
 - (c) [...] caustic wash and drying units;
 - (d) [...] EDC storage tanks;
 - (e) Chlorine pipelines from Runcorn MCP Site to Runcorn EDC Plant (to the extent that such pipelines exclusively supply chlorine to the Runcorn EDC Plant);
 - (f) The pipeline within the Runcorn site from the ethylene network to the Runcorn EDC Plant; and
 - (g) All equipment, pipes and tanks within the boundaries of the Runcorn EDC Plant.

ANNEX 14: Runcorn – Supply Contracts

Table 29: Key Feedstocks (Runcorn MCP Site and Runcorn EDC Plant)

Product Service	INEOS Entity	Supplier	Brief Description	Term Termination	Price Setting Mechanism	Restriction Assignment	on Transport the plant	to Comments
Electricity	INEOS ChlorVinyls Ltd	[...]*	Frame Agreement for Purchase and Sale of Electricity	[...]*	[...]*	[...]*	[...]*	[...]*.
Electricity/Gas/Emissions	INEOS ChlorVinyls Ltd	[...]*	Frame Agreement for purchase and sale of electricity, gas and emissions	[...]*	[...]*	[...]*	[...]*	[...]*.
Electricity/Gas/Emissions	INEOS ChlorVinyls Ltd	[...]*	Frame Agreement for purchase and sale of electricity, gas and emissions	[...]*	[...]*	[...]*	[...]*	[...]*.
Brine [to be contributed to Thor JV]	INEOS ChlorVinyls Ltd	[...]*	Supply of brine to Runcorn site from [...]*	[...]*	(1) - [...]* [...]* [...]*	[...]* [...]*	[...]*	
Ethylene	INEOS ChlorVinyls Ltd	[...]*	Supply of ethylene [...]*	[...]*	[...]*	[...]*	[...]*	[...]*

Table 30: Utilities / Site Services

Product / Service	INEOS Entity	Supplier	Brief Description	Term Termination	Price Setting Mechanism	Restriction on Assignment	Transport to the plant	Comments
Purchase contract for road transport services	INEOS ChlorVinyls Limited	[...]*	Contract to cover road transport from plant to customers	[...]*	[...]*	[...]*	[...]*	[...]*
Purchase contract for bulk liquid shipping	INEOS ChlorVinyls Limited	[...]*	Contract to cover shipping of bulk liquids (CSL and EDC) from UK to North West Europe	[...]* [...]*	[...]*	[...]*	[...]*	[...]*
Purchase contract for chemical storage	INEOS ChlorVinyls Limited	[...]*	Purchase contract for hire of EDC storage tanks	[...]* [...]*	[...]*	[...]*	[...]*	[...]*
Use of the UK ethylene distribution system	INEOS ChlorVinyls Ltd	[...]*	Agreement granting use of system rights [...]*	[...]* [...]*	[...]*	[...]*	[...]*	[...]*
Membrane cellroom electrolyser refurbishment services	Ineos ChlorVinyls	[...]*	Refurbishment & recoating of membrane electrolyzers	[...]*	[...]*	[...]*	[...]*	[...]*
Supply of natural gas	ICV	[...]*	Supply of gas to Runcorn Site [...]*	[...]*	[...]*	[...]*	[...]*	
Compressed air / nitrogen	ICV	[...]*	Agreement for supply of air and nitrogen and oxygen	[...]*	[...]*	[...]*	[...]*	[...]*

ANNEX 15: Runcorn – Customer Contracts

Table 1: Summary of contracts with top 10 customers of caustic soda liquor (2012)

Ranking	Customer ¹	Brief Description	Treatment for Divestment	Turnover
1.	[...]*	[...]*	[...]*	[...]*
2.	[...]*	[...]*	[...]*	[...]*
3.	[...]*	[...]*	[...]*	[...]*
4.	[...]*	[...]*	[...]*	[...]*
5.	[...]*	[...]*	[...]*	[...]*
6.	[...]*	[...]*	[...]*	[...]*
7.	[...]*	[...]*	[...]*	[...]*
8.	[...]*	[...]*	[...]*	[...]*
9.	[...]*	[...]*	[...]*	[...]*
10.	[...]*	[...]*	[...]*	[...]*

Note: [1] Excluding customers outside the EEA.

Table 2: Summary of contracts with top third-party merchant market customers of EDC (2012)

Ranking	Customer¹	Brief Description	Treatment for Divestment	Turnover
1.	[...]*	[...]*	[...]*	[...]*
2.	[...]*	[...]*	[...]*	[...]*
3.	[...]*	[...]*	[...]*	[...]*

ANNEX 16: Runcorn – Personnel

Table 1
Details of personnel employed at the Runcorn membrane chlorine cellroom

Department	Personnel	Of whom Key Personnel
Site Management	[...]*	[...]*
Operations	[...]*	[...]*
TOTAL	[...]*	[...]*

Table 2
Details of personnel employed at the Runcorn EDC plant

Department	Personnel	Of whom Key Personnel
Site Management	[...]*	[...]*
Operations	[...]*	[...]*
TOTAL	[...]*	[...]*

Table 3
Details of Personnel providing site services to the entire Runcorn site (such services to be provided to the Wilhelmshaven / Runcorn Divestment Business under a services agreement)

DEPARTMENT	PERSONNEL	OF WHOM KEY PERSONNEL
Maintenance / Engineering	[...]*	-
Site services	[...]*	-
Sales and customer support	[...]*	- [...]*
Procurement	[...]*	-
HR	[...]*	-
Finance	[...]*	-
HSE	[...]*	-
TOTAL	[...]*	[...]*