Bundeskartellamt

MERGER CONTROL PROCEEDING
DECISION
PURSUANT TO SECTION 40(2) GWB

File number: **B4-115/19**

VERSION FOR PUBLICATION

Decision

In the administrative proceeding

1. CRRC Zhuzhou Locomotives Co., Ltd.
   No. 1 Tianxin Road
   Zhuzhou
   412001 Hunan (People's Republic of China)

– Acquirer –

– Authorised representative:
Blomstein Partnerschaft von Rechtsanwälten mbB
Dr Max Klasse
Oranienburger Straße 66
10117 Berlin –

2. Vossloh Locomotives GmbH
   Doktor-Hell-Straße
   24107 Kiel

– Acquiree –

– Authorised representatives:
Freshfields Bruckhaus Deringer LLP
Dr Uta Itzen
Dr Tobias Pukropski
Feldmühleplatz 1
40545 Düsseldorf –

3. Vossloh AG
Vosslohstraße 4
58791 Werdohl

– Seller –

– Authorised representatives:
Freshfields Bruckhaus Deringer LLP
Dr Uta Itzen
Dr Tobias Pukropski
Feldmühleplatz 1
40545 Düsseldorf –

pursuant to Section 36 GWB

the 4th Decision Division decided on 27 April 2020:

1. **The Acquirer's project to acquire Vossloh Locomotives GmbH notified by letter of 13 September 2019 is cleared.**

2. **The fee for this decision is set at**

(in words: euros)

and is to be borne by the Acquirer. A separate fee to be set at EUR for the notification of the merger project is credited against the fee for the clearance decision.

Reasons

A. Statement of facts

1 The project concerns the acquisition of the European market leader in the shunter sector by the worldwide largest manufacturer of rolling stock, the Chinese CRRC Group.

2 Over many years, the market position of the target company Vossloh Locomotives GmbH (in the following: **Vossloh**) was very strong but for the past few years the company's competitiveness has suffered since Vossloh has been undergoing a sales process which

has already lasted more than five years. Since the middle of 2013, necessary investments have not been made, especially with regard to the development of the product range.

3 To date, the competitive losses caused by this process are reflected only to a limited extent in the numbers regarding the company's market position. While Vossloh's market share has clearly decreased over the last five years, the company continued to reach market shares which in terms of figures exceed the threshold for the assumption of market dominance pursuant to Section 18(4) German Competition Act (*GWB*). The company's reduced competitiveness is, however, reflected in the number of orders received: Vossloh has recently no longer managed to successfully stand its ground in the competition for major contracts. Instead, other large manufacturers such as Alstom, Stadler and Toshiba have used large-volume tender procedures to enter the market with new products.

4 With regard to assessing the proposed acquisition, the question as to whether and over which period of time the competitive losses suffered can be remedied, especially in the changed environment now including new effective competitors, is decisive. The parties to the merger present Vossloh as a failing company which offers only one single model of locomotives They claim that without the merger Even if, in the Bundeskartellamt's view, this is exaggerated in various respects, it is nevertheless to be noted that neglecting investments over the past five and a half years has resulted in a considerable competitive gap between the target company and its competitors.

5 CRRC Corporation Limited (in the following: **CRRC**), the Acquirer's parent company, has not yet taken up large-scale business activities in Europe but is making every effort to enter the market. Due to its association with the People's Republic of China, the company is a strong acquirer with many resources, especially in financial terms. Due to its complementary technical capabilities, the company will contribute, also in technological terms, to significantly reduce Vossloh's competitive shortcomings.

6 Despite the competitive potentials that are combined due to the merger, the Bundeskartellamt cannot forecast with the necessary degree of certainty that the merged entity will be able to restore Vossloh's former dominant market position in the shunter market in the EEA, including Switzerland, within a forecast period of five to ten years. It is true that the increase in resources, which results from combining Vossloh's market position with the capabilities and possibilities available to the state-owned company CRRC, will, according to the Bundeskartellamt's assessment, considerably strengthen Vossloh's market power, which has substantially decreased recently. But despite having fully

considered the extensive resources and special possibilities available to Chinese state-owned companies, doubts remain as to whether it could be possible even for CRRC to compensate for Vossloh's severe competitive losses suffered due to the neglect of the past few years.

7 To avoid any misunderstandings, it is already to be pointed out at this stage that classifying CRRC's resources as significant does not contradict the European Commission's competitive assessment in the Siemens/Alstom case: It is a big difference whether a Chinese state-owned company has to establish its market position from scratch – as with regard to the high-speed trains in the Siemens/Alstom case – or whether it can draw on the existing market position of an established market participant. The competitive effects are fundamentally different in these two cases.

I. The parties

1. CRRC Zhuzhou Locomotives Co., Ltd.

8 CRRC Zhuzhou Locomotives Co., Ltd. is a fully-owned subsidiary of China Railway Rolling Stock Corporation Limited (in the following: **CRRC**). The company is the largest manufacturer of rolling stock worldwide. CRRC is a 51.43% subsidiary of CRRC Group Co., a state-owned holding company whose other business areas are mechanical engineering, electromechanical and electronic equipment and components, and environmental protection equipment. The remaining shares are traded on the Shanghai and Hong Kong stock exchanges. CRRC Group Co., in turn, is a fully-owned subsidiary of the State-owned Assets Supervision and Administration Commission of the State Council (in the following: **SASAC**). SASAC is under the direct authority of the State Council of the People's Republic of China. CRRC's business objectives are determined within the framework of a five-year plan.

9 CRRC offers the entire range of rolling stock, both for traffic on main and secondary lines and for urban traffic. For this purpose, the company manufactures magnetic levitation trains, high-speed trains, diesel and electric multiple units for regional and long-distance traffic, diesel and electric locomotives, shunters, trams and light-rail vehicles. CRRC also produces wagons. In addition, CRRC offers network technology, maintenance and advisory services.

10 CRRC's business activity predominantly focuses on supplying the Chinese market. However, the company also exports a substantial amount of products mainly to Africa. In

recent years, CRRC has additionally won practically all tender procedures for underground railway vehicles in the USA.

11 In the EEA, CRRC's business activities have been very limited so far. In 2015, the company founded the subsidiary CRRC ZELC Verkehrstechnik GmbH domiciled in Vienna for its European business. In recent years, CRRC has noticeably increased its marketing efforts in the EEA but has so far managed to secure only few orders. In 2016, the company sold three electric multiple units to the Czech railway company Leo-Express; the first unit was recently shipped to Europe.

12 In 2018, the company also won a tender procedure of Deutsche Bahn AG (in the following: **DB**) for hybrid shunters to be used in the suburban train systems of Hamburg and Berlin; an option regarding the manufacture of up to 20 vehicles was also agreed (see p. 236 of the file). The locomotives are equipped with diesel drives, conductor rails and a battery for electric traction supply. In addition, in 2019 CRRC was awarded a contract with the Hungarian company Rail Cargo Hungaria, a subsidiary of the Austrian federal railway company Österreichische Bundesbahn (in the following: **ÖBB**) regarding the provision of two hybrid shunters.

13 CRRC has managed to secure its first contracts also in some European countries outside the EEA, such as a contract for electric mainline locomotives in Serbia and North Macedonia.

14 In 2018, CRRC recorded sales in the amount of EUR 29.4 billion worldwide and EUR in the EEA; EUR were generated in Germany. CRRC employs 168,000 people worldwide.

15 Due to the controlling influence indirectly exerted by the Chinese state, CRRC belongs to a group of an almost incalculable number of affiliated companies. With regard to the railway technology sector, especially the affiliated companies China Railway Signal & Communication (Group) Corporation Limited (in the following: **CRSC**) and China Railway Construction Corporation Limited (in the following: **CRCC**) are to be mentioned. The Chinese national railway company China Railway Group Limited (in the following: **China Rail**) is also affiliated.

16 Strongly supported by the Chinese regulations regarding market entry in China, CRRC has formed a number of joint ventures with foreign companies. These include collaborations with almost all well-known railway technology manufacturers in the world. In the context of these joint ventures, high-quality products are manufactured which in technological terms are on par with Western standards but are produced in China. With the exception CRRC's influence is secured by an interest

of at least 50% held by Chinese state-owned companies. The most important joint ventures include Bombardier Sifang (Qingdao) Transportation Ltd., which manufactures the Chinese high-speed trains. CRRC Puzhen Bombardier Transportation Systems Co., Ltd. produces autonomous railway vehicles, among other things. Siemens Traction Equipment Ltd. produces AC traction systems and other key components for rolling stock. Two joint ventures with Voith, namely CRRC Voith Transmission Technology Ltd. and Shanghai Voith Transmission Technology Co. Ltd., manufacture transmissions for rolling stock. A joint venture with GE offers a broad range of products, including diesel engines and electrical equipment for railway vehicles, but also battery systems, electric buses and electric forklifts. The joint venture Xi'an Alstom Yongji Electrical Equipment Co., Ltd. produces traction motors together with Alstom; Traction components and signalling technology for regional traffic are manufactured in the joint venture Shanghai Alstom Transport Electrical Equipment Co., . Another joint venture, Alstom Qingdao Railway Equipment Co., Ltd., produces hydraulic dampers for rolling stock. Lastly, there is another joint venture with Alstom, Shanghai Alstom Transport Co., Ltd., which produces rolling stock for urban traffic; . In the joint venture Shenyang CRRC Wabtec Railway Brake Technology Company Ltd., CRRC produces brakes for rolling stock together with the US brake manufacturer Wabtec. Another joint venture for the production of brake systems, Qingdao Faiveley Sri Rail Brake Co., Ltd., has been formed with the brake and components manufacturer Faiveley, which also belongs to Wabtec now. Together with the German brake manufacturer Knorr Bremse, CRRC produces compressors for rolling stock in the joint venture Knorr-Bremse Nankou Air Supply Unit (Beijing) Co., Ltd.; . In addition, another joint venture has been formed with the German rolling bearings manufacturer SKF, namely Beijing Nankou SKF Railway Bearing Co., Ltd., which produces bearings for locomotives and other rolling stock.

17 There are also numerous joint ventures between Western railway technology manufacturers and other Chinese state-owned companies. For example, Siemens holds in the joint ventures Tianjin Zongxi Traction Motor Ltd. and Zhi Dao Railway Equipment Ltd., which are active in the fields of traction motors for rolling stock and the installation of orbital transmissions, respectively. Other joint ventures are Siemens Transportation Electrical Equipment (Shanghai) Co., Ltd., which produces train control systems for high-speed trains, Siemens Signaling Company Ltd., which produces signalling technology, and Siemens Electrical Drives Ltd., which offers electric drive components such as motors, generators, high-

performance electronics or digital train control systems. Finally, Siemens holds in the joint venture Siemens Transformer (Jinan) Co., Ltd., which produces transformers and similar components. Knorr Bremse owns in a joint venture called Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing (Beijing) Co., Ltd., which manufactures brake discs, brake callipers and brake pads for rolling stock. Vossloh AG has also formed joint ventures with Chinese state-owned companies, including Vossloh Fastening System (China) Co., Ltd. and Beijing China Railway Vossloh Technology Co., Ltd., which both manufacture rail fastening systems – also for high-speed traffic. In addition, Bombardier operates joint venture for the maintenance of regional trains, Shentong Bombardier (Shanghai) Rail Vehicle Maintenance Co., Ltd.

18 Via numerous subsidiaries, CRRC itself is involved in the manufacture of almost all components for rolling stock. The range of products manufactured by CRRC itself includes all types of rolling stock, ranging from locomotives to multiple units to passenger carriages and freight wagons. The company also produces a number of components, including traction motors and train control systems, both itself and via subsidiaries.

2. Vossloh Locomotives GmbH

19 Vossloh Locomotives GmbH (in the following: **Vossloh**) is a manufacturer specialised in shunters. At present, the company is a fully-owned subsidiary of Vossloh AG.

20 The company produces diesel-hydraulic and diesel-electric shunters; certain models can also be used as mainline locomotives. Vossloh operates a plant in Kiel, Germany, which took up production as recently as early 2018. The company emerged from Siemens Schienenfahrzeugtechnik GmbH by which the locomotive construction division of the long-standing company MaK based in Kiel was absorbed. The target company has been waiting to be sold since 2014. Since the decision to sell the company was taken, no investments have been made in the development of the existing vehicle models. The certification for the smaller three-axle vehicle type G6 was therefore not renewed in 2015 and its production was discontinued. Vossloh also ended the production of the remaining diesel-hydraulic models in 2015.

21 In the same year, Vossloh AG sold its locomotive plant in Valencia (Spain), in which mainline locomotives and regional trains were manufactured, to the Swiss rolling stock manufacturer Stadler AG after the parent company had decided to sell its rolling stock business. For the notified sale of the remaining shunter business Vossloh AG received an amount in the low single-digit million range according to press reports; due to provisions included in the purchase agreement, this amount could still increase by up to ten million

euros in the coming years. However, all things considered, Vossloh AG has to record a loss ranging between 30 and 35 million euros (see Manager Magazin online of 28 August 2019).

22 In 2018, Vossloh recorded sales in the amount of EUR million which were generated in the EEA (EUR million). EUR million were generated in Germany.

II. The proceeding

1. Notification and deadline

23 On 13 September 2019, CRRC's subsidiary CRRC Zhuzhou Locomotives Co., Ltd. notified the Bundeskartellamt of the planned acquisition of Vossloh.

24 In its letter of 20 September 2019, the Bundeskartellamt informed the company that the notification was incomplete because the Acquirer had failed to provide a complete list of affiliated companies. In its letter of 25 September 2019, the Acquirer submitted a first extended list of affiliated companies. In its letter of 30 September 2019, the Bundeskartellamt once again criticised this list.

25 In its letter of 25 October 2019, the Acquirer sent another revised list of affiliated companies. In a telephone call on 11 November 2019, the Bundeskartellamt informed the legal representatives of the parties involved that the notification was probably still incomplete but that the authority had not yet conclusively reviewed the exhaustiveness of the list of affiliated companies (see p. 778 of the file). This statement was again repeated by the Bundeskartellamt in another telephone call with the legal representatives of the parties involved on 19 November 2019 (see p. 800 of the file).

26 The re-examination of the list of affiliated companies showed that the list was still incomplete in terms of key aspects relevant for the substantive assessment of the case. For instance, CRRC failed to mention its own joint venture with Bombardier, which manufactures high-speed trains, and two joint ventures with Voith, which both are intended to produce components for rolling stock. These joint ventures are, however, relevant for the assessment of CRRC's economic performance because they manufacture products that can be compared to European products, not least due to the Western knowhow contributed by the Western parent companies. It also became clear that the affiliated companies in upstream sectors which produce important input products for locomotives, such as steel, aluminium, batteries or glass, and which in some cases had already been suspected of applying prohibited dumping practices, were not included in the list. The availability of extremely cheap input products within the affiliated group of companies is, however, also

relevant for assessing the economic performance. Lastly, CRRC failed to list even evident, essential sister companies such as China Railway Signal & Communication (Group) Corporation Limited (referred to as CRSC) or China Railway Construction Corporation Limited (referred to as CRCC).

27 Following another request from the Bundeskartellamt, CRRC submitted a list of additional associated companies in its letter of 11 February 2020, including the joint ventures with Western manufacturers outlined above. At the same time, the company pointed out, however, that the information regarding battery and steel production was merely based on publicly available sources and could therefore be incomplete. This does not meet the requirements relating to the provision of information on affiliated companies; in fact, information provided by the Chinese state and its regional organisations in their capacity as owners is to be made available. However, further clarification was not deemed necessary in this case since additional resources would not have affected the competitive assessment of the merger project.

28 On 21 November 2019, the Bundeskartellamt decided to initiate the main proceeding. The parties involved were informed of this in the letter of 22 November 2019 and in a telephone call between the chair of the decision division and the parties involved on 22 November 2019.

29 In the letter of 31 January 2020, CRRC agreed on behalf of all parties involved to extend the deadline until 25 March 2020. The Bundeskartellamt confirmed the extension of the deadline in its letter of 21 February 2020 but also pointed out that the notification was still incomplete. In its letter of 3 March 2020, CRRC agreed on behalf of all parties involved to once again extend the deadline until 25 April 2020. On 2 April 2020, CRRC agreed to another extension of the deadline until 4 May 2020. The Bundeskartellamt confirmed both extensions of the deadline in the letters of 14 March 2020 and 14 April 2020, respectively, but in each case once again pointed out that the notification was still incomplete.

30 In its letter of 11 December 2019, the Bundeskartellamt informed the parties to the merger that the balancing clause (*Abwägungsklausel*) could be applied in this proceeding and at the same time pointed out that the burden of proof and evidence rested with the parties involved (see p. 1678 of the file). In their written statement of 11 March 2020, the parties to the merger commented on the balancing clause for the first time.

31 On 13 November 2019, the Federal Ministry for Economic Affairs and Energy informed the Bundeskartellamt that the ambassador of the People’s Republic of China had lodged an official complaint with the Secretary of State responsible for these matters at the Federal Ministry for Economic Affairs and Energy about the way in which the planned

CRRC/Vossloh merger had been dealt with. The Bundeskartellamt was not informed about the Federal Government's reply. As a matter of fact, no other instructions or suggestions were provided by the Federal Ministry to the Bundeskartellamt in this context.

2. The investigations

32 In several steps, the Bundeskartellamt conducted extensive investigations of the market conditions of the relevant markets.

a. Parties involved

33 In addition to its inquiries mentioned above (see A.II.1) regarding CRRC's group structures, the Bundeskartellamt sent an official request for information dated 1 October 2019 and demanded various additional information from the Acquirer, especially pertaining to the certification process and the provision of strategy documents. In CRRC's reply in response to the request for information, central aspects of the documents made available were blanked out. On 18 November 2019, the Bundeskartellamt requested the party notifying the merger in writing to reveal the information that had been blanked out in several sections and provide some additional documents which had not been made available despite having been included in the request for information. The party notifying the merger complied with this request by sending two letters dated 21 November 2019 and 2 December 2019, respectively.

34 On 6 November 2019, the Bundeskartellamt asked Vossloh's legal representatives by email to send various information, especially on tender procedures. Vossloh responded to this request for information by sending a statement written by its lawyers dated 15 November 2019.

35 In its letter of 21 January 2020, the Bundeskartellamt asked Vossloh further questions regarding its market position and various development projects. These questions were answered in the written statement dated 24 January 2020. In the investigation letter of 7 February 2020, Vossloh was asked to provide detailed information on the sales efforts made so far. The answers were provided in a written statement dated 17 February 2020.

36 In another request for information of 19 March 2020, the Bundeskartellamt requested CRRC to provide detailed information on CRRC's production capacities and order volumes. This request for information was answered – after the expiry of the deadline set in this context – on 6 April 2020.

b. Competitors

37 In its official request for information of 3 December 2019, the Bundeskartellamt sent questionnaires to 16 (potential) competitors domiciled in Germany and to the parties involved asking them about the market conditions. The request for information was answered by 14 companies. The Polish rolling stock manufacturer PESA no longer conducts its business at the address entered in the commercial register and the ZAGRO Group received two questionnaires; its subsidiary Gmeinder responded on behalf of ZAGRO.

38 In addition, the Bundeskartellamt sent questionnaires to 17 companies located outside Germany. Due to the lack of jurisdiction of the Bundeskartellamt abroad, the companies domiciled (exclusively) outside Germany are under no obligation to respond to the questionnaire. Only the companies CZ Loko and Express Service responded in detail to the questionnaire. In order to prompt the company to respond, an official request for information was issued to CZ Loko's indirect minority shareholder Zeppelin GmbH on 7 February 2020. As to the remaining companies, eleven are not active in the relevant market. The Bundeskartellamt was able to obtain basic information, especially on the volumes sold and the type of vehicles, from four additional companies.

c. Buyers

39 By way of its official request for information of 18 December 2019, the Bundeskartellamt surveyed 36 shunter buyers domiciled in Germany about the market conditions. This also included the German subsidiaries of the state-owned railway companies of the Netherlands (in the following: **NS**), Poland (in the following: **PKP**), Switzerland (in the following: **SBB**), Italy (in the following: **FS**) and France (in the following: **SNCF**). Go-ahead Verkehrsgesellschaft was not obliged to reply since the company does not operate any shunters either in Germany or in the United Kingdom. Another smaller buyer did not provide any information.

40 In addition, 14 companies domiciled (exclusively) outside Germany were sent informal requests for information. Two of the companies responded to the questionnaire, telephone conversations were held with two other companies.

41 Overall, the information provided by 45 companies domiciled in and outside Germany was analysed. With regard to this number, it has to be taken into account that some of the companies which were asked to respond separately answered only one questionnaire together as they belong to the same group (K+S and Esco, SHS Services and Saar Rail).

Conversely, it is to be noted that railway companies domiciled outside Germany handed in separate questionnaires for their individual group companies (e.g. separate questionnaires for SNCF and the group companies Captrain España, Captrain Italy, Captrain Deutschland, Akiem and VFLI). In the following, the term “company” is used in the singular even if companies belonging to the same group handed in separate questionnaires.

3. Right to be heard

42 On 28 January 2020, the Bundeskartellamt talked with the representatives of the parties to the merger and their lawyers. During this meeting, the most important investigation results and the decisive issues for the Bundeskartellamt's competitive assessment were communicated to the companies; it was not yet possible to communicate the expected content of the decision at that time. On 7 February 2020, at the request of the parties involved the Bundeskartellamt provided an anonymised summary including the arguments brought forward by competitors and buyers.

43 On 17 February 2020, CRRC submitted a detailed statement commenting on the competitive assessment of the planned merger and especially the conditions of competition.

44 In its letter of 3 March 2020, the Bundeskartellamt sent the parties to the merger a detailed account of its investigation results (referred to as “**discussion paper**”).

45 On 13 March 2020, the government decided to close schools across the country as of the following Monday due to the Corona pandemic and to take extensive measures to avoid the further spread of the virus.

46 On 27 March 2020, the parties to the merger submitted a detailed statement.

47 In its letter of 14 April 2020, the Bundeskartellamt gave the parties to the merger the opportunity to be heard by sending a draft decision. In their letter of 17 April 2020, the parties to the merger notified the Bundeskartellamt that they decided not to comment in detail on this. In this letter (in the following: **brief statement**), they once again pointed out that they did not agree with numerous findings, assumptions and conclusions drawn by the Bundeskartellamt with regard to the relevant market, the conditions of competition and the possible theories of harm, and in this context they once again presented fundamental points addressed in the corresponding parts of the decision.

B. Legal assessment

I. Formal requirements for prohibiting a merger

48 The notified merger project is subject to German merger control.

1. Scope of application of the German Competition Act (*GWB*)

49 The planned merger is subject to merger control pursuant to Sections 35 ff. GWB. Both the Acquirer and the target companies conduct business in Germany and generate turnover here (see Section 130(2) GWB). The turnover thresholds set out in Section 35(1) GWB are exceeded. The sales revenues generated worldwide by the companies involved amounted to more than EUR 500 million in the past fiscal year. In 2018, CRRC generated more than EUR 25 million in domestic revenues; in the same year, the target company's domestic revenues exceeded a total of EUR 5 million. The exemption requirements provided for under Section 35(2) GWB are not fulfilled. The turnover thresholds provided for under Article 1 of the Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (the EC merger regulation) are not exceeded because the combined aggregate turnover of Vossloh and CRRC does not exceed the threshold of EUR 100 million in at least three Member States (see p. 19 of the file).

2. Criteria for examination under merger control

50 The acquisition of Vossloh by CRRC fulfils the criteria of a concentration under Section 37(1) no. 2 (acquisition of control) and no. 3 sentence 1 a) (acquisition of at least 50% of shares). By way of the notified merger, CRRC will acquire all shares in and sole control over Vossloh.

II. Material requirements for prohibiting a merger

51 Pursuant to Section 36(1) GWB, a concentration which would significantly impede effective competition, in particular a concentration which is expected to create or strengthen a dominant position, is to be prohibited by the Bundeskartellamt unless the undertakings involved prove that the concentration will also lead to improvements of the conditions of competition and that these improvements will outweigh the disadvantages of the merger.

52 The notified merger project does not fulfil the requirements for prohibiting a merger; in particular, the merger is not expected to create a dominant market position.

53 The relevant market for shunters does not constitute a minor market within the meaning of Section 36(2) sentence 2 no. 2 GWB.

1. Relevant markets

54 The planned merger primarily concerns the manufacture and distribution of shunters.

55 In the past, the Bundeskartellamt and the European Commission (in the following: **COM**) rendered several decisions regarding rolling stock markets (Bundeskartellamt decision of 15 March 2012, B9-166/11 – Hermann Thiele/Vossloh, second phase clearance; COM decision of 3 April 2001, M.2139 – Bombardier/ADtranz; decision of 26 March 2010, M.5754 – Alstom Holdings/Areva T&D; decision of 14 Sept. 2015, M.7538 – Knorr Bremse/Vossloh). This established a nuanced practice which in principle makes a distinction based on the vehicle's purpose of use and type of drive system. Accordingly, a fundamental distinction is made between markets for high-speed trains (since the COM decision M.8677 – Siemens/Alstom of 6 February 2019 further broken down into "very high-speed trains"), multiple units for long-distance traffic with diesel or electric drive (which is also likely to cover the "high speed" segment of the Siemens/Alstom decision), multiple units for regional traffic with diesel or electric drive, electric mainline locomotives, diesel mainline locomotives, shunters, trams and light-rail vehicles, underground vehicles, airport people movers and various markets for the manufacture of wagons.

56 The market for diesel mainline locomotives is also relevant in the present case. This segment is not examined in more detail, however. The reason for this is that although Vossloh manufactures several locomotives that can be used both for shunting and for mainline services and therefore have to be considered in both markets, Vossloh's competitors in the diesel mainline locomotive sector record significantly larger sales volumes than those in the shunter sector, resulting in the fact that potential competition problems are less noticeable in the mainline locomotive sector than in the shunter sector. If the requirements for prohibiting the merger were to be met with regard to mainline locomotives, then this would apply even more so with regard to shunters. Against this background, it is not necessary to examine this separate market in more detail.

57 Furthermore, there are overlaps with regard to individual components, especially if the market for components is defined as a worldwide market. However, Vossloh does not specialise in specific components, which would place the company in a significant market position. In this segment, it can be ruled out from the outset that the requirements for

prohibiting a merger are fulfilled. Examining the individual markets for components in more detail is therefore not necessary.

58 In addition, Vossloh offers maintenance services in several European countries. CRRC, however, is not yet engaged in maintenance services in Europe. The activities of the parties to the merger do not overlap. Therefore, examining the relevant maintenance markets in more detail is not necessary either.

a. Definition of the product market

59 According to the established case law of the German Federal Court of Justice (BGH), the definition of the product market is based on demand-side substitutability. Accordingly, all goods and services that, due to their properties, purpose of use and price, customers consider to be substitutes for satisfying a specific need are to be included in the relevant supply market (established case law, most recently by the BGH decision of 21 January 2014, KVR 38/13, WuW/E DE-R 4135, para. 15; BGH decision of 6 Dececmber 2011, KVR 95/10, BGHZ 192, 18 para. 27 - Total/OMV; BGH decision of 30 March 2011, KZR 6/09, WuW/E DE-R 3303 para. 12 – MAN authorised workshop).

60 However, the concept of demand-side substitutability merely helps to determine the competitive forces by which the companies involved are affected. When assessing whether the requirements for prohibiting a merger have been fulfilled, the question as to whether the scope of action of the merged entity is sufficiently controlled by competition is decisive. The market forces at play have to be outlined as accurately as possible by the market definition. If in the individual case the concept of demand-side substitutability is not effective in fully answering this question, rectification is necessary (BGH decision of 11 November 2008, KVR 60/07, WuW/E DE-R 2451, BGHZ 178, 285 para. 17, BGH decision of 16 January 2007, WuW/E DE-R 1925, BGHZ 170, 299 para. 19 - National Geographic II). Such rectification is implemented especially by taking into account supply-side substitutability (BGH decision of 16 January 2007, WuW/E DE-R 1925, BGHZ 170, 299 para. 19 - National Geographic II; BGH decision of 5 October 2004, KVR 14/03, WuW/E DE-R 1355, BGHZ 160, 321 para. 18). If the definition were exclusively based on the purchasing interest of the opposite market side geared towards a specific need, market definitions would sometimes have to be extremely detailed and would no longer accurately reflect the market conditions (see BGH decision of 16 January 2007, WuW/E DE-R 1925, BGHZ 170, 299 para. 19 - National Geo-graphic II, including the example of size 46 and size 48 shoes which without taking supply-side substitutability into account would not belong to one and the same market).

61 The present case concerns the market for the manufacture and distribution of shunters. Both the Bundeskartellamt and the COM have already rendered decisions regarding Vossloh. In the decision B9-166/11 (Hermann Thiele/Vossloh, second phase clearance of 15 March 2012), the ninth decision division in charge at the time considered defining a separate market for shunters due to the differing technical designs of shunters and mainline locomotives, e.g. in terms of size and speed, but the exact definition of the market was left open (B9-166/11, para. 66). In the later decision M.7538 of 14 September 2015, Knorr Bremse/Vossloh, which dealt with the Thiele group's acquisition of control over Vossloh (after only a minority share had been previously acquired which had been notified to the Bundeskartellamt and assessed in the proceeding B9-166/11), the COM defined a separate market for shunters. In the reasons for its decision, the COM stated that the companies surveyed had pointed out technical differences (e.g. with regard to speed or train control systems) and the manufacturers had referred to the fact that they specialised either in mainline locomotives or shunters (M.7538, para. 62).

62 The investigations conducted in the present case have confirmed this decision-making practice. The merger concerns the market for the manufacture and distribution of shunters. The market does not include pure mainline locomotives and dual-mode vehicles, which are both used for other purposes and are not suited for carrying out shunting operations with the necessary performance.

63 The parties involved object to this market definition. In their written statement of 27 March 2020, they state that the demand in the market meanwhile focuses on universally usable locomotives that can be used for both shunting and mainline services. Special purpose locomotives, in contrast, are no longer in demand (written statement of 27 March 2020, p. 18). In their view, a market definition based on the purposes of use is no longer appropriate. This argument cannot be upheld, however, since only one-way substitutability exists with regard to shunters certified for public railway networks that can also be used for (light) mainline services. However, this does not apply the other way round: mainline locomotives can only be used for shunting in marginal areas but they do not systematically serve as a substitute for shunters.

64 Shunters are, on the one hand, used in larger industrial businesses such as steelworks, refineries and mining or chemical plants, and, on the other hand, in traditional railway companies, such as Deutsche Bahn AG or private railway companies. In this regard, they are especially used for the marshalling of trains or the loading of wagons, but sometimes also for light mainline operations such as moving wagons from one location to another.

65 Shunters are highly diverse products. They predominantly differ in terms of their performance and area of use, particularly in terms of being restricted to private factory premises or certified for operation on a public railway network.

66 At one end of the market, very small shunters which often have two axles are used, especially to move smaller numbers of wagons. Sometimes they are also used in underground or suburban train networks for the towing of defective vehicles, especially if special operational conditions, such as axle load limits on older bridges or small structure gauges like those characteristic of the tunnel routes of Berlin's underground network, require the use of small vehicles. Some of these vehicles have been certified, others have not. Especially vehicles used for industrial purposes often have not been certified if they are exclusively used on private premises.

67 At the other end of the market, there are very large shunters with four or six axles which can also be used on main or secondary lines Those vehicles are high-performance vehicles with high starting traction and can be used for both shunting and light mainline services. In addition to all the essential features of a shunter, they are also equipped with the required train control systems and have been certified for mainline services. Such locomotives are used for the formation of trains in shunting yards and to move maintenance trains or freight trains over shorter distances – between several sites of an industrial business, for example.

68 These vehicles differ considerably in terms of complexity and price. At present, only few manufacturers are capable of manufacturing larger shunters. Such vehicles are produced by Vossloh (DE12, DE18), Alstom (Prima H3, Prima H4), Stadler (NG Shunter; still in the design stage), CRRC (AZ-Lok Hamburg/Berlin, not yet certified) and CZ Loko (Effishunter 1000). The company Gmeinder had already produced such a locomotive (D180BB) but went into insolvency during the certification process. Some of the locomotives have not (yet) been certified for operation on the German railway network, but they all meet the general European requirements for certification, the Technical Specifications for Interoperability (in the following: **TSI**). Successful certification additionally also requires the vehicles to satisfy further country-specific requirements.

69 Smaller shunters are offered by a larger number of manufacturers. These include the companies Gmeinder, CZ Loko, Schöma, Reuschling, Socofer, Teraspyora (Steelwheel) and Express Service. Some of these companies specialise in certain uses for shunters, such as mining or rescue services.

70 The parties to the merger are of the opinion that mainline locomotives and shunters belong to the same market. For this reason, the Bundeskartellamt once again assessed several questions regarding the market definition which arise in marginal areas, particularly whether

diesel mainline locomotives or so-called dual-mode vehicles are to be included in the market. In addition, the question whether second-hand vehicles also belong to the market for new shunters is to be clarified.

71 These questions are discussed in the following.

aa. No further differentiation based on performance or features of shunters

72 Despite the significant differences in terms of performance, features and prices of shunters, a more detailed differentiation of the market is neither reasonable nor necessary. For one thing, no distinct criterion for differentiation can be identified and, for another, the various shunter types form a continuum which due to the alternative options available to switch to slightly better or less well-equipped types results in linked responses in the overall market.

73 A conceivable criterion for differentiation is the certification of a locomotive for mainline services. The certification process is complex, the locomotives then have to be equipped with the relevant train control technology and are usually more powerful so that they can meet the demands of (light) railway services in terms of power and speed. In addition, some larger buyers, above all DB, need their dedicated shunters used for train formation in shunting yards to be certified for mainline services. It is, however, easily possible not to install the train control components in certified locomotive models if a customer wishes to use the vehicle on industrial premises only. The vehicle can then be offered at a cheaper price. One and the same locomotive model is thus sometimes delivered with and sometimes delivered without train control technology. Attempting to break down the markets even further would therefore involve a large number of borderline cases which make it impossible to clearly allocate a locomotive to one or the other market.

74 It is, however, not necessary to divide the market any further. Both types of shunters – either certified for mainline services or not – are capable of carrying out the key operations of shunters, that is efficiently moving wagons back and forth during train formation. The certification for mainline services is an additional quality criterion that allows the vehicle to be used in a considerably more flexible way also on the public railway network. Certification is not required for shunting, however. Shunters that have been certified for mainline services are suited for shunting without any limitations. This distinguishes them from mainline locomotives which, as will be explained below (see B.II.1.a.bb), cannot be used for this purpose.

75 Lastly, small shunters and large shunters suitable for mainline services are linked by a chain of substitution. Customers who need a locomotive for use on the public railway network cannot use a small locomotive without certification for the planned purposes. Conversely,

however, locomotive models that have been certified can be manufactured without the specific train control technology and therefore sold at a cheaper price to be used for shunting on private premises. Such vehicles then directly compete with locomotives whose model range has not been certified. Customers who need pure works locomotives can use both a somewhat larger and a smaller-sized locomotive for the shunting operations that have to be carried out at their company. The prices for one and the same model with and without train control technology cannot be completely decoupled, however. In their entirety, these circumstances result in the fact that the overall sector of locomotives suitable for shunting is characterised by interdependencies. Competitive pressure is exerted from one segment to another by customers with a certain degree of flexibility. Products from the same or a related area are more likely to exert competitive pressure than highly differentiated products from the two ends of the spectrum.

bb. Diesel mainline locomotives

76 In its written statement of 15 November 2019, Vossloh first noted that the centre-cab locomotives manufactured by the target company were not only used as shunters but to a large extent also as an alternative to other diesel locomotives for freight services over shorter distances (see p. 793 of the file). Based on this, Vossloh concludes that the assessment of the conditions of competition is to be based on the overall market for diesel locomotives in which Vossloh holds a considerably weaker market position compared to its position in the market for shunters (p. 794 of the file). In their written statements of 17 February 2020 and 27 March 2020, the parties to the merger also point out that electrically powered mainline locomotives with so-called last-mile modules are now offered, which could be used for shunting as well (see B.II.1.a.bb(1)). The parties are also of the opinion that supply-side substitutability is high and producers of diesel-powered mainline locomotives could start producing shunters without investing considerable costs and time (see B.II.1.a.bb(2)).

(1) Lack of substitutability

77 Mainline locomotives can be used for shunting purposes in marginal areas only. Contrary to the opinion of the parties, mainline locomotives are not a substitute for shunters.

78 The parties to the merger state that shunters and mainline locomotives can be substituted in both directions (written statement of 27 March 2020, p. 21). In their statement of 17 February 2020, the parties to the merger already claimed that the boundaries between shunters and other diesel locomotives were becoming increasingly blurred since customers

used off-centre cab locomotives also for shunting. In their statement of 27 March 2020, they provide three examples in which larger industrial companies supposedly opted against the procurement of a DE18 locomotive and instead purchased a Vectron locomotive from Siemens – a typical mainline locomotive. The parties to the merger are of the opinion that the distinction between locomotives with a centre or off-centre cab is no longer important. In their view, even electric locomotives designed for mainline services could be used as shunters. For this purpose, the parties to the merger refer to electric locomotives such as Bombardier's Traxx 3 or Siemens' Vectron, which are both offered with last-mile modules (see written statement of 27 March 2020, pp. 22 f.). In addition, train drivers could ride on the steps of an off-centre cab locomotive. Lastly, the parties to the merger are of the opinion that DB's currently ongoing tender procedure for a dual-mode locomotive paradigmatically stands for the trend towards locomotives that can be used universally (see written statement of 27 March 2020, p. 25).

79 Based on the investigations carried out by the Bundeskartellamt, the view of the parties to the merger cannot be supported: Diesel-powered mainline locomotives and especially electrically powered mainline locomotives are not to be included in the shunter market. According to the Bundeskartellamt's investigations, the substitutability between shunters and mainline locomotives is only a one-way substitutability. It is true that certain shunters can also be used as mainline locomotives, provided that they have been certified accordingly, are equipped with the relevant train control systems and reach the required speed and power. Due to the specific nature of shunting, mainline locomotives can, however, be used only for very specific tasks which represent only a small part of shunting operations, such as the marshalling of passenger trains in terminal train stations. They cannot, however, replace shunters especially not with regard to the main task for which shunters are used, namely train formation.

80 According to the Bundeskartellamt's findings, mainline locomotives are not specifically used for shunting in practice and they are not suited for replacing shunters for economic and technical reasons.

81 The surveyed diesel locomotive manufactures have all but one stated that off-centre cab locomotives – mainline locomotives are usually equipped with one cabin at each end of the locomotive – cannot be used systematically for shunting. Therefore, 94% of the companies consider mainline locomotives to be unsuited for shunting. And even the only company that answered this question in the affirmative stated that in order to use a shunter for its typical purposes the cab must be located in the centre so that the driver does not have to exit the cab whenever he changes direction. This explanation suggests that the company (domiciled abroad) might have possibly misunderstood the question.

82 This corresponds to the results of question 5 of the questionnaire sent to manufacturers. The companies surveyed estimate that on average 13% of the locomotives their customers use as shunters are mainline locomotives, the median value of 5% is even significantly lower.[1] The differences between the average and the median value suggest that there are high outliers. In fact, the average value is distorted by the information provided by a company which estimated that the share of mainline locomotives was 70%. The next highest value also provided by only one company is 20%, three companies stated 10%, four companies 5%, one company 2%, one company 1% and five companies 0%. Contrary to the opinion of the parties to the merger (see written statement of 27 March 2020, pp. 23 f.), this information does not allow the conclusion to be drawn that substitutability exists but instead that the possibility to use mainline locomotives is limited to marginal areas. Individual outliers provided in the answers do not change this.

83 The responses to the questionnaire sent to buyers have provided a very similar result. Accordingly, also 90% of the buyers surveyed responded that they did not use off-centre cab locomotives for shunting. Based on the explanations given by those companies that provided a differing answer, it can be seen that the use of these mainline locomotives for shunting is only a marginal phenomenon at these companies and predominantly involves construction traffic or moving a train over short distances at the final destination if no shunter is available. The other reasons for using off-centre cab locomotives as shunters also suggest that in most cases company-specific needs play a role: One company, for example, states that the use of such locomotives depends on vehicle dispatching or is based on specific performance requirements; another company mentions a large percentage of chartered train traffic and fewer scheduled activities. No company has stated, however, that it specifically uses mainline locomotives for train formation.

84 The manufacturers' assessments regarding the qualifying characteristics of shunters also suggest that mainline locomotives cannot be deemed a substitute for shunters. "Acquisition costs" were mentioned as the main characteristic, which on a scale from 1 to 5 was ranked at an average value of 4.6 (the figures refer to the following meaning: 1 = negligible, 2 = irrelevant, 3 = relevant, 4 = quite important and 5 = very important). The median value even is 5.0. The characteristics "ongoing costs" (average value 4.4; median value 5.0), "reliability" (average value 4.4; median value 4.5) and "durability" (average value 4.4; median value 4.5) were considered similarly important. The next most important characteristic was

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[1] By way of explanation, the median value divides the answers (in this case: the percentage of off-centre cab locomotives used for shunting) in two parts so that, as a result, the values on one side are less than or equal to the median value and the values on the other side are greater than or equal to the median value. In specific cases, the median value is more informative than the average value because it is less affected by outliers in the data.

“remote operation” with an average value of 4.1 (median value 4.0), followed by “automatic coupling” (average value 3.7; median value 4.0) and “centre cab” (average value 3.6; median value 4.0). Other characteristics mentioned by individual companies are “deliverability”, “availability of maintenance facilities” and “availability of spare parts”. These characteristics were, however, not systematically rated by all companies surveyed so that the results are not comparable.

85 Individual companies further explained in discussions why it is not possible to use mainline locomotives for shunting. For example, the acquisition costs for a mainline locomotive are usually significantly higher than those for shunters, resulting in the fact that it would not be cost-effective to use a mainline locomotive for shunting purposes. Another important aspect in this regard was the effort involved in changing direction (back/forth): With regard to centre-cab locomotives, the driver simply turns around and operates the vehicle using the other driver’s position (“master”); with regard to off-centre cab locomotives, however, the driver has to walk through the entire vehicle before he can drive in the other direction. Since the direction has to be changed frequently during train formation, this may lead to the shunting operations taking considerably longer when using a mainline locomotive. Another aspect is the possibility for shunting staff to safely ride along on the vehicle’s steps in order to quickly and comfortably descend the vehicle to couple wagons together. In addition, locomotives drive at low speed during shunting. Mainline locomotives are, however, designed for higher speeds so that the motor of a mainline locomotive is often driven in too low a gear during shunting. This results in greater wear and tear. The design of the vehicles is also important for the next aspect, namely the fact that starting traction plays a decisive role for shunting. In order to ensure the high starting traction required, shunters are equipped with suitable transmissions.

86 The answers regarding the necessary characteristics of a shunter provided by the buyers show that mainline locomotives cannot be regarded as a substitute for shunters. On a scale from “very important” to “irrelevant”, the buyers were asked to classify the importance of the characteristics (to facilitate evaluation, the Bundeskartellamt assigned school grades to the individual ratings, i.e. very important = 1, important = 2, neutral = 3, less important = 4, irrelevant = 5). The importance of the characteristic “centre cabin” was on average rated 2.0 by the buyers, “remote operation” 2.02 and “acquisition costs” 1.4.

87 The Bundeskartellamt’s assessment is lastly also supported by the Acquirer CRRC, which in its response to the request for information of 3 December 2019 notes that off-centre cab locomotives can, in its view, not be used as shunters whereas centre-cab locomotives can be used both as shunters and as mainline locomotives.

88 Due to the reason alone that shunters and mainline locomotives differ significantly in price, the assessment of the parties involved that only universally usable locomotives will be in demand in the future is not convincing. The technology necessary for mainline services is complex and expensive. Customers that intend to use the locomotives predominantly on their works premises do not need train control systems and are therefore not likely to buy universally usable shunters that are also suitable for mainline services for reasons of cost alone.

89 According to the Bundeskartellamt's assessment, the need for shunting will – contrary to the statements made by the parties involved – not continue to decline in the medium term. The study conducted by SCI Verkehr and cited by the parties as evidence to support their hypothesis of a decreasing need for shunting (see written statement of 27 March 2020, p. 25) has been superseded by political developments: Where the study still assumes that fewer shunters will be needed, this is explained by the decline in single-wagon transport. Single-wagon transport means that individual wagons are collected at the customer's premises and combined with wagons of other customers to be transported together on the main lines before being delivered to several customers again. Contrary to the block train model with regard to which entire trains are transported from A to B, this type of rail freight transportation involves a great deal of shunting. Over many years, wagonload freight has been reduced in Germany. The key issues paper adopted by the so-called climate cabinet of the German Federal Government on 20 September 2019 provides for a strengthening of single-wagon transport, which is contrary to DB's previous strategy. DB's currently ongoing tender procedure for a dual-mode locomotive is directly connected to this; this is not least illustrated by the charts provided by the parties to the merger on p. 26 of their written statement dated 27 March 2020. The large number of 200 locomotives that are to be acquired through this tender procedure emphasises the importance of this paradigm shift. This change in the policy framework was not yet foreseeable at the time SCI Verkehr prepared its study. SCI Verkehr repeatedly explains the declining need for shunting by the further decline of single-wagon transport. However, this forecast has been invalidated due to the changes in the policy framework. The parties involved are likely to be aware of this. It is surprising that despite the direct connection to the tender procedure for a dual-mode locomotive the parties to the merger claim that there is "an increasing shift in traffic from single-wagon transport to block trains" (see written statement of 27 March 2020, p. 25).

90 Contrary to the understanding of the parties involved, the tender procedure for a dual-mode locomotive is, against this background, not an indication of increased substitutability between shunters and off-centre cab mainline locomotives. It is rather an expression of the

revival of a special area of use for locomotives which can be used for shunting. It is indeed true, as has also been emphasised several times by the parties to the merger on p. 25 of their written statement dated 27 March 2020, that the new locomotives' ability to be used for shunting is an important aspect in DB's tender procedure for the dual-mode locomotive. For instance, the tender specifications require shunting steps and the vehicle's ability to run over rail brakes – devices used in shunting yards to slow down wagons coming down shunting humps. Optional remote control operation and the ability to be used on shunting humps are also included. The dual-mode locomotive thus features the decisive criterion to be included in the shunter market: It can be used for shunting without restrictions and is therefore (also) included in the shunter market.

91 However, it is precisely the conclusion desired by the parties to the merger that mainline locomotives are suitable for use as shunters that cannot be drawn from this development. On the contrary, the fact that DB still has to procure separate locomotives suitable for shunting in order to expand single-wagon transport rather suggests that the mainline locomotives available to DB are not sufficiently equipped for shunting. However, the ongoing tender also includes a distinct innovative aspect so that no clear conclusion can be drawn. In any case, the argument brought forward by the parties that mainline locomotives could also be used as shunters is not supported by referring to dual-mode locomotives: The reason for this is that this vehicle precisely is not a pure mainline locomotive but a vehicle which is obviously included in the shunter market as defined by the Bundeskartellamt since this locomotive features all special characteristics of shunters.

92 It could be considered, at best, whether in light of the, in fact, increased demand for shunters that can be used for mainline services an additional market for universally usable locomotives would have to be defined. So far, this would only lead to Vossloh's market shares skyrocketing since significantly fewer companies produce shunters suitable for mainline services than previously included in the defined market for shunters. At present, however, the Bundeskartellamt does not consider it necessary to assess this additional segment separately**.** The competitive particularities of universally usable diesel locomotives can be sufficiently taken into account by considering both the market for shunters and the market for mainline locomotives; this may change, however, should this segment indeed become more important in economic terms.

93 The few cases referred to by the parties to the merger in their written statement of 27 March 2020 in which customers supposedly preferred a mainline locomotive produced by Siemens or another manufacturer over a DE18 do not prove the claimed substitutability of shunters with mainline locomotives either. In these cases, the companies concerned already own mainline locomotives and it is unclear whether the locomotives procured were intended for

shunting. It is undisputed that shunters suitable for mainline services can indeed be used for mainline services. But the examples mentioned by the parties involved do not provide any indication of inverse substitutability, which the parties to the merger believe to be correct. Even if the mainline locomotive produced by Siemens were used for shunting in individual cases – Siemens itself assumes that the rate of the locomotive's use as a shunter is below 5% (see para. 173) – this is not tantamount to a general substitutability between mainline locomotives and shunters. Overall, the investigation results outlined in detail above clearly suggest that there is no substitutability.

94 In detail:

- is a company that, among other services, also provides logistical services for . The company has locomotives, of which are used for long-distance freight transport. Most recently in 2019, two Siemens Smarttron electric locomotives were procured. Based on the fact that procured a mainline locomotive it cannot be concluded that this locomotive is used as a shunter. In addition, the company already has several shunters, which allows the company to choose not to use the newly acquired Vectron for shunting. The specific use of the Vectron for this purpose is not mentioned by the parties involved. In view of the company's structure, this possibility is not necessarily evident.

- operates passenger trains. The company runs . It also operates charter trains. It is not clear to what extent the company is in need of shunting services. The need for mainline locomotives is, however, evident. The claimed substitutability of a shunter with a mainline locomotive cannot be concluded from this example either.

- is also a company that owns both shunters and mainline locomotives. Also in this case, it is not clear whether the relevant locomotive was intended for shunting or mainline services.

- With regard to the purpose for which the locomotive was intended to be used is also unclear. The company provides locomotive maintenance services and rents out locomotives to be used, for example, as maintenance trains. This example does not allow any conclusions to be drawn as to the specific purpose of use – and especially as to whether a mainline locomotive is in fact intended to be used for shunting.

- With regard to the parties themselves state that this case referred to the substitution of mainline locomotives with a Vossloh shunter suitable for mainline services; therefore, based on the parties' statement this example is already irrelevant for the question that is to be answered here.

95 The considerations concerning mainline locomotives apply all the more to the substitution of a shunter with an electric locomotive equipped with a last-mile module. Last-mile modules are diesel generators which are installed in electric locomotives as auxiliary motors in order to be able to use the locomotives also on shorter routes without overhead lines for individual shunting operations, especially on works premises and in harbours. In addition to the economic and technical disadvantages of diesel mainline locomotives, the power output of these vehicles is low, resulting in the fact that the locomotives' performance is very limited. Both Siemens' last-mile module for the Vectron and Bombardier's last-mile module for the Traxx each have a power output of 180 kW. This power output is similar to that of a car. It is inconceivable how such a locomotive is supposed to replace a shunter for the purpose of train formation. In addition to the extremely high acquisition costs for such heavy electric locomotives, the traction power of such locomotives is low when used in diesel mode. The net weight of a Traxx 3 with a last-mile module alone amounts to 87 tonnes. The acceleration rate of this locomotive is correspondingly low when used in auxiliary diesel mode. Last-mile modules are suitable only for covering shorter distances without overhead lines, especially at the beginning and at the end of a route on which a block train is transported, for example in harbours, container terminals or industrial facilities. It seems rather far-fetched to regard such a vehicle as a substitute for shunters.

(2) No supply-side substitutability

96 The considerations of the parties to the merger regarding supply-side substitutability between mainline locomotives and shunters are also unfounded.

97 The parties to the merger are of the opinion that the Bundeskartellamt neglected the supply-side substitutability when defining the market (written statement of 27 March 2020, p. 26). This was "incomprehensible since the Bundeskartellamt clearly affirmed such a supply-side substitutability elsewhere" (loc. cit.). The parties to the merger also refer to the fact that Alstom, Stadler, Toshiba and supposedly also CAF recently entered the market or announced that they would enter the market as proof of supply-side substitutability, which they assume exists.

98 This view cannot be supported, however, since the parties to the merger fail to recognise the requirements for the existence of supply-side substitutability and moreover confuse different legal institutions with different requirements.

99 Supply-side substitutability is mentioned in Section 18(3) no. 7 GWB as one of the relevant criteria for assessing a company's market position. It is shown to exist if a manufacturer is able to shift its supply to another specific good without incurring significant costs or additional time. According to the Commission Notice on the definition of relevant market (OJ 1997, C 372/5, para. 23), supply-side substitutability would not be shown to exist if this entailed additional investments, strategic decisions or time delays.

100 In the present case, both investments and a considerable amount of time are necessary for a manufacturer to be able to offer a shunter in addition to mainline locomotives. It is indeed true – as has been rightly noted by the parties – that the production plants for rolling stock can switch from producing one type of locomotive to another within a short amount of time without this involving a considerable amount of costs (for more details see para. 586 below). This applies only to the adjustment of the production plants, however, and requires a fully developed product:

101 If a manufacturer of mainline locomotives first has to develop a shunter and have it certified because it does not yet offer such a model on the market, the usual costs for development and certification have to be borne by the manufacturer. Such costs are considerable (see B.II.2.b below): Development costs alone amount to several million euros and it can be expected that the development will take at least two years. On top of that, there are the costs and the time involved in the certification process, which also takes several months and usually also entails significant costs. In light of this, it cannot be said that shifting supply is possible without investing a significant amount of time and money.

102 In their assessment, the parties disregard the costs involved in product development and only want to focus on the costs associated with adjusting production. However, the costs and time involved in product development must also be taken into account when assessing the question as to whether companies such as Siemens or Bombardier, which are indeed important mainline locomotive manufacturers but do not offer shunters on the market, are also included in the market. They have to make considerable investments and cannot supply a product without considerable delay. Such companies are therefore no viable supply alternative. The Bundeskartellamt's results referred to by the parties to prove their hypothesis concern the question as to the capacity of a plant to manufacture locomotives. In this context, it is true that merely the costs for shifting production are relevant. These results cannot, however, simply be applied to the market definition, which the parties seem to prefer. This would result in the fact that another important category of costs – with regard to which the decision provides the necessary findings – would be ignored.

103 The recently implemented or announced market entries are, contrary to the assessment of the parties to the merger, not to be regarded as proof of supply-side substitutability (see written statement of 27 March 2020, p. 27). At best, they serve as an indication of the level of entry barriers and – in this connection – of the competitive pressure created by potential competition. These aspects are addressed in the context of market entry barriers (for more details see B.II.2.b).

cc. Dual-mode vehicles

104 In its written statement of 15 November 2019, Vossloh additionally noted that providers of dual-mode vehicles exert considerable competitive pressure on the distribution of shunters (p. 793 of the file).

105 According to the investigations carried out by the Bundeskartellamt, dual-mode vehicles are not to be included in the market, however.

106 First, two manufacturers of dual-mode vehicles pointed out in their response that they do not produce shunters but different machines. One of these companies stated that it was not able to comment on this sector since the products it produces are completely different from shunters. One company explained that dual-mode vehicles were entirely different products for entirely different purposes. The other company stated that dual-mode vehicles always served as a supplement to locomotives but not as a replacement.

107 Dual-mode vehicles are vehicles which can run on both tracks and wheels. In some cases, these vehicles are equipped with control stands – especially when used on the road – and sometimes they are exclusively operated by remote control. The company Windhoff pointed out that dual-mode vehicles are usually powered by batteries, but they are also available with diesel motors. When used on tracks, dual-mode vehicles are usually driverless, the vehicle is manned only for derailing and rerailing. Limit switches along the route are often used so that it is impossible for the vehicles to leave the designated shunting area in the first place. Shunters, in contrast, can move freely on the premises and occasionally also end up on mainline tracks. In most cases, the vehicles are not certified but classified as a mechanical system. Lastly, the price difference is huge: Whereas shunters cost more than EUR 1 million, dual-mode vehicles cost around EUR 250,000.

108 The fact that dual-mode vehicles are not included in the relevant market is confirmed by the results of the questionnaire. According to the responses provided by the manufacturers, the average price for a shunter amounts to approx. EUR 2.3 million. The buyers also stated that the average price for a shunter was almost EUR 2 million and the price for a dual-mode vehicle amounted to approx. EUR 317,000.

109 Only one fourth of the buyers surveyed actually use a (small) number of dual-mode vehicles as shunters. One company stated that the reason why companies specifically used dual-mode vehicles for shunting purposes was that they were used for light shunting operations; another company stated that the acquisition and operating costs in relation to the shunting operations that needed to be carried out at the relevant site were relevant in this regard. The responses show that also in this respect company-specific factors are important, which is yet another argument that there is no general substitutability.

110 This is confirmed by the fact that 90% of the buyers surveyed answered the question as to whether dual-mode vehicles could fully replace shunters in the negative. When asked about the reasons for this, most of the companies stated that no full substitutability existed because dual-mode vehicles did not have enough traction power in order to carry out the operations needed by the companies. Other arguments that were mentioned were susceptibility to failure, very high maintenance costs, disadvantages in infrastructure and a lower level of robustness.

dd. Used vehicles

111 Furthermore, the parties to the merger are of the opinion that also used locomotives are to be included in the market. They consider the distinction between new and used vehicles to be artificial; in their opinion, a used locomotive requires more maintenance than a new locomotive but due to the lower acquisition price the overall costs are significantly below the costs of a new locomotive (see written statement of 27 March 2020, p. 30). For professional buyers a “new locomotive” is of no individual value compared to used cars on the automobile markets.

112 Including used locomotives in the market for new vehicles would constitute a fundamental deviation from other vehicle markets, which would be justifiable only due to the special characteristics of shunters. This would be the case especially if a used shunter was as reliable and durable as a new locomotive, which would require that shunters are subject to practically no wear and tear.

113 This is not the case, however: It is true that if maintained well and serviced regularly, shunters can be used for a very long time. The average age of shunters in Germany is estimated to be over 35 years (see market study “Diesel Locomotives – Global Market Trends 2017” carried out by SCI Verkehr GmbH, p. 49). In European countries other than Germany, railway companies also have locomotives whose average age is relatively high. The responses provided by buyers have shown that the average age of the locomotives

owned by the companies surveyed is approx. 28 years, the average value based on the respective stock of existing locomotives is approx. 32 years.

114 Nevertheless, the service life of shunters is not indefinite because various parts are exposed to wear and tear and have to be replaced despite their robust construction. Maintenance costs increase with age and especially spare parts are increasingly difficult to obtain. Therefore, used shunters generally cause higher maintenance costs and thus cannot be compared with new shunters that have not yet been subject to wear and tear. With regard to shunters certified for mainline services by the German Federal Office for Railways (**EBA**), the need for maintenance is manifested in the obligation to regularly and periodically subject shunters to a so-called main inspection. According to the information provided by the EBA, the main inspection causes an idle time of several weeks and a six-figure sum (in euros) for repair costs.

115 In addition, the increased need for maintenance goes hand in hand with reduced reliability. With regard to shunters, availability is – as is the case with rolling stock in general – an important criterion. This can already be seen based on the responses provided by the competitors which gave the criterion reliability the average grade 1.65 – thus ranking it between “quite important” and “very important”. The buyers consider the criterion “reliability” to be even more important; rated 1.3, it was ranked the most important criterion. This seems plausible because a shunter’s downtime caused by a defect may result in the fact that processes are considerably impeded or services can no longer be rendered. This is inacceptable both at an industrial company where shunters are needed to transport production material or finished products from one location to another and in a shunting yard. Especially if there is the risk of longer downtimes caused by a defect, e.g. due to the cumbersome procurement of a spare part for an old locomotive which is no longer produced, such downtimes may result in production stoppage, which causes costs that are as high as those involved in quickly arranging for a replacement vehicle or keeping a back-up locomotive available for use.

116 Against this background, it is to be ruled out that with regard to shunters it is irrelevant for buyers whether a new or a used vehicle is procured. However, the opinion of the parties to the merger is to be followed to the extent that in marginal areas the procurement of a used locomotive may be an alternative. Depending on the tasks for which the locomotive is procured, this is, however, not the case with regard to a significant number of buyers – as is clearly shown by the importance of the criterion “reliability” outlined above. Procuring a used locomotive is therefore a form of imperfect substitution which is not included in the market, however. It is taken into account with regard to competitive pressure (for more details see B.II.2.e).

117 Completely overhauled (“modernised”) shunters constitute a special case. The extent of the overhaul varies and may be determined by the customer. In some cases, only individual components such as bearings and wheel sets, the brake system, the train control system, train control parts or the engine are exchanged, sometimes the old locomotives are fully stripped of old technology until merely the frame and the bogie remain and all components including the motor and the chassis are exchanged. Locomotives that have been fully modernised in this way can be compared to new locomotives in terms of expected service life.

118 In addition to the extent of modernisation, two economic models are to be distinguished with regard to overhauled locomotives: In one case, the owner of a locomotive instructs a manufacturer to modernise the locomotive already available to the owner or the owner carries out the modernisation of the locomotive internally. In the other case, a manufacturer buys an old locomotive, completely overhauls the vehicle and then resells the locomotive to another company. It is only the latter case which can be compared to distributing newly produced locomotives; in the former case, modernisation constitutes a maintenance service. For a buyer, it makes a difference whether such a buyer already has to own a used locomotive with regard to which the buyer then also bears the economic risk associated with the necessary repairs or whether the buyer can purchase a new locomotive from the manufacturer without having to satisfy any other requirements. Finally, without a change in ownership, a locomotive is not sold and merely services are provided.

119 Against this background, only extensive modernisations are to be included in the market with regard to which all technical components including the engine and the chassis are exchanged so that merely the frame and the bogie are reused and the overhauled locomotive is then sold by the manufacturer to another company other than the original owner. Other used locomotives are not to be included in the market for new vehicles also with regard to shunters.

120 To the extent the parties to the merger are of the opinion that modernised shunters are to be fully included in the market (see written statement of 27 March 2020, p. 30), they contradict their statement that diesel-hydraulic shunters are no longer in demand. Modernising locomotives – especially if they are not extensively overhauled – involves significant efforts to exchange the traction technology since this requires a complex modification of the vehicle’s structure. Therefore, diesel-hydraulic locomotives usually stay diesel-hydraulic locomotives. Especially if a leap in technological is pursued, modernising a locomotive is in many cases not an alternative to acquiring a new shunter.

121 Modernised locomotives are also undoubtedly in demand. This demand differs, however, from a company's demand for a shunter which is intensively used, permanently available without incurring high consumption costs or long down times and for which it is not necessary to keep a back-up vehicle.

122 Ultimately, what becomes clear from the statements provided by the parties to the merger is merely that the demand for shunters is highly diverse. Including used locomotives in the market for new vehicles is, however, not adequate with regard to shunters.

b. Geographic market definition

123 The geographic market definition is also based on demand-side substitutability. In this respect, the area which is affected by the merger project is to be regarded as the relevant geographic market. In addition to determining the buyers affected by the merger, it is another requirement for the definition of a relevant market that the competitive conditions in the area are, for one thing, sufficiently homogenous and, for another, noticeably distinguishable from the competitive conditions in neighbouring areas (BGH decision of 16 January 2008, KVR 26/07, WuW/E DE-R 2327, 2336, para. 69 - Bad Neustadt regional hospital with reference to Article 9(7) of the Merger Regulation and the Commission Notice on the definition of relevant market for the purpose of Community competition law, OJ EG 1997 C 372/6, para. 8). Ultimately, the geographic alternative options available to buyers are decisive (BGH decision of 6 December 2011, KVR 95/10, WuW/E DE-R 3591 para. 34 - Total/OMV; BGH decision of 19 December 1995, KVR 6/95, WuW/E BGH 3037, 3042, para. 21 - Raiffeisen; as cited in juris).

124 In their most recent cases, both the Bundeskartellamt and the COM assumed that the markets for rolling stock spanned the EEA – including Switzerland in some cases (see BKartA, B9-166/11, para. 66; COM, M.5754, para. 40 ff.; M.7871, para. 24; M.8677, para. 126). In earlier decisions the COM had still based its assessment on national markets (COM M.2139, para. 7).

125 The investigations carried out by the Bundeskartellamt have not provided an entirely uniform picture. With regard to shunters, there are significant aspects which suggest that the market spans across the EEA including Switzerland, but there are also indications suggesting that the markets are smaller in geographic terms. However, the Bundeskartellamt is not entirely convinced that the markets are smaller than the EEA including Switzerland. This decision is therefore based, to the advantage of the parties to the merger, on the larger market spanning the entire EEA including Switzerland. If the Western European and Eastern European markets were considered separately, the market

shares held by the parties to the merger in the Western European part of the market region would increase significantly.

126 The question as to whether shunters can be certified for operation in several Member States is crucial for defining the market in geographic terms. This is difficult against the backdrop that for historical reasons some railways in the European Member States significantly differ in technical terms, especially with regard to train control and traction current; the latter is, however, irrelevant for diesel locomotives. The new European Train Control System ETCS is slowly being introduced in parallel with the existing train control systems. If a vehicle is to be used for cross-border traffic, it thus has to be equipped with several train control systems. The differences between the individual systems are considerable and the locomotives have to be certified separately for operation in each country in which they are intended to be used. For this purpose, not only the TSI but also the notified national technical rules (in the following: **NNTV/NNTR**) have to be observed, which may result in additional tests and expert reports and which in some cases may also require technical changes to be made to the vehicle.

127 In reality, manufacturers of shunters rarely obtain certification for their shunters in several countries. The vehicles of the manufacturers surveyed are on average certified for operation in 1.5 countries, the median value is 1.0. A large number of vehicles is not certified at all (10 cases), 15 models are certified in one country, only six models are certified in two countries and a total of fewer than five models are certified in three, four or more countries (a more detailed breakdown is not possible in order to protect confidential information). This picture clearly differs with regard to other types of rolling stock, especially with respect to mainline locomotives: In this segment, the relevant models are certified for use in significantly more countries at the same time.

128 The companies surveyed consider the costs and time involved in the certification process for shunters to be considerable. The Bundeskartellamt asked the market participants to provide a range for the estimated costs associated with the first certification of a three-axle and a four-axle shunter. For a three-axle vehicle, the average minimum value amounts to EUR 2,153,846 (median value EUR 1,250,000) and the average maximum value is EUR 3,634,615 (median value EUR 2,250,000). In the view of the companies surveyed, the average estimated time required for the certification process is 22.5 months (median value 19.5 months). The figures for a four-axle shunter are slightly larger, namely an average minimum value of EUR 2,664,286 (median value EUR 1,500,000) and an average maximum value of EUR 4,103,571 (median value EUR 3,000,000). The average estimated time required for the certification process is 24.4 months, the median value is 20.0 months.

129 Roughly speaking, the market participants expect the financial costs involved in the first certification to range between 2 and 4 million euros and the time required for this to amount to almost two years. Some – especially larger – companies even stated significantly higher costs amounting to up to EUR 10 million for a three-axle locomotive and EUR 12 million for a four-axle locomotive. Other companies considered the costs to be considerably lower.

130 Even the costs for certification in another country after initial certification were described as significant by the companies surveyed. According to the responses, the average minimum costs for another certification of a three-axle vehicle are EUR 760,714 and the average maximum costs are EUR 2,300,000 (median values: EUR 500,000 and EUR 1,300,000, respectively); for a four-axle vehicle, the average minimum value is EUR 826,667 and the average maximum value is EUR 2,446,667 (median values: EUR 500,000 and EUR 1,650,000). The average estimated time required for a three-axle shunter to be certified is 15.0 months (median value: 12.0 months), for a four-axle locomotive it is 17.7 months (median value: 12.0 months).

131 Despite the considerable time and costs involved, the assumption that the market spans the EEA including Switzerland appears to be correct also with regard to shunters.

132 It is true that the certification in several Member States involves technical and administrative effort, which discourages some market participants from having their vehicles registered for cross-border use. But the costs for this certification process referred to as homologation are still only a fraction of the costs involved in developing a new locomotive. Development costs are roughly four times the costs involved in first certification (for more details see B.II.2.b); compared with homologation in another country, the development costs are even about eight times higher. In this context, it always has to be taken into consideration that, also when developing a new model, the relatively high costs involved in first certification have to be borne in addition to the development costs.

133 Moreover, it should be noted that on a European level intensive efforts are being made to facilitate the certification process for vehicles that are to be used in cross-border traffic. For this purpose, especially the Technical Specifications for Interoperability (TSI) have established a European set of rules which has harmonised major parts of the provisions that are to be adhered to. However, additional country-specific Notified National Technical Rules (NNTR) still have to be complied with. Further simplification of the certification process is to be achieved through the initiation of a certification procedure with the European Union Agency for Railways (in the following: **ERA**) domiciled in Valenciennes/France. Since 2019, vehicles that are to be used in several Member States are to be registered directly with the ERA. Only if the use is limited to a single Member State

can vehicles be registered with the railway authorities of the Member States (in Germany this is the Federal Office for Railways, in the following: **EBA**).

134 Switzerland has adopted the TSI as technology and diligence rules with the result that the basic sets of rules are identical and supplemented by further national regulations.

135 Against this background, cross-border certifications are already possible in the EEA and are certainly implemented – although in comparatively few cases in the shunter sector. In addition, it is already foreseeable that the certification requirements are to be further aligned in the coming years. This justifies the assumption that the market covers the EEA including Switzerland.

2. Competitive Assessment

136 The merger project does not fulfil the requirements for prohibiting a merger.

137 The competitive assessment of the present case is very specific. For one thing, this is due to the relevant market which concerns goods with a long service life and in which comparatively few transactions are carried out. For another, CRRC is about to enter the market and is only establishing its market position. So far, the company has received only a few shunter orders but it has not yet been able to deliver any of the corresponding vehicles. Accordingly, CRRC's historical market share provides only limited information on the company's future market position. What is even more relevant is the forecast as to how CRRC's market share will develop with or without the merger based on the competitive conditions. This forecast also has to take into account the fact that CRRC is a state-owned company which is particularly supported by the People's Republic of China in its capacity as (indirect) owner within the framework of its industrial strategy "Made in China 2025".

138 In the following, the requirements for assessing the merger effects are first outlined by presenting the development of the market participants' market position (for more details see B.II.2.a) and taking a look at the structural characteristics of the market and the actual competition (for more details see B.II.2.b to B.II.2.f). Based on this, it is then examined how the market positions of the parties involved develop with and without the merger (for more details see B.II.2.g and B.II.2.h).

a. Market structure

139 The shunter market is relatively small compared to other rolling stock markets. Each year approximately 75 shunters were sold in the EEA including Switzerland. The prices for

shunters range from one to four million euros. From 2014 to 2018, the average annual market volume amounted to around EUR 140 million.

140 Approximately half of the shunters sold in the EEA were sold in Germany in the past five years. According to the investigations carried out by the Bundeskartellamt, the market volume in Germany totalled EUR 65.0 million in 2018. Therefore, the market is not a minor market.

141 In the following, the specificities regarding the demand for shunters and the consequences for the competitive analysis resulting from such specificities are first outlined (see B.II.2.a.aa). Subsequently, the activities of the essential market participants are described (see B.II.2.a.bb) before the market structure including the development of the market shares is examined (see B.II.2.a.cc). Lastly, the actual market activities and the competitive proximity of the market participants are analysed (see B.II.2.a.dd).

aa. Determination of market shares and forecast period

142 Shunters are very durable goods. On the one hand, this affects the determination of the historical market shares and, on the other hand, this results in special circumstances regarding the forecast. In particular, in view of the long period between ordering and delivering a locomotive the forecast period has to be longer than the usual three to five years.

143 The parties to the merger object to the way in which the Bundeskartellamt has determined the market shares on which its decision is based. They are of the opinion that determining the market shares on the basis of actual sales volumes is fundamentally flawed (written statement of 27 March 2020, p. 35). Instead, they consider it necessary to rely on orders received as was done by the COM in the Siemens/Alstom proceedings. In their view, this is necessary because merger control proceedings should be about forecasting the future market situation (written statement of 27 March 2020, p. 36).

144 In the following, the particularities in terms of time are first addressed with regard to the forecast period and the determination of market shares, which result from the special characteristics of shunters (see B.II.2.a.aa(1)). Subsequently, the basis for determining the market shares in the present case is discussed (see B.II.2.a.aa(2)); in this context, the objections brought forward by the parties involved are also discussed.

(1) Period for determination of market shares and forecast period

145 The service life of shunters usually is 25 to 30 years. The actual service life is even significantly longer; the average service life of the shunters owned by the companies surveyed is 33.1 years, the shunter fleets of several European state-owned railway companies are on average more than 40 years old.

146 In addition, processing larger orders takes relatively long. In many cases, there are two to three years between placing an order and delivering the product, especially if the customer requests special features that still have to be developed and possibly certified. Changes in sales volumes are therefore noticeable only after a certain delay. For instance, in 2008 DB ordered 130 shunters ("Gravita" from Voith); these locomotives were delivered between 2010 and 2014. A similarly long period passed with regard to an order placed by SBB relating to 47 dual-mode shunters; the order was placed in late 2015 and so far, early 2020, only few units have been delivered by the manufacturer Alstom.

147 These special market conditions make it impossible to determine the competitive potential of the market participants by considering one single year. In order to determine the historical market position of a company, the average figures of the past five years have to be taken into account. The shunter market is a typical sector with a low number of orders, which are placed irregularly, at least by state-owned railway companies. Industrial customers, however, order shunters on a more regular basis in the context of comparatively small orders. In light of the usually high-volume, irregular orders placed by state-owned railway companies, reliable information on the market position and the competitive potential of a company not distorted by coincidences can be obtained only if a longer period of time is taken into consideration.

148 During the period under consideration, the market shares were subject to noticeable fluctuations due to the nature of shunter sales: The market volumes can change from year to year due to large orders, especially if large state-owned companies issue tenders – as was the case with regard to DB's Gravita tender procedure mentioned above. Winning or losing one single contract can thus result in major changes to the companies' sales volumes for the next three to four years. The effects of large-volume tender procedures on the market volume can be of such a large extent that a company's market shares change due to the changes in the denominator even if its own sales remain unchanged.

149 In their notification, the parties involved suggested considering a period of three years, the Bundeskartellamt considers it reasonable to base the assessment on a period of five years. This corresponds to the COM's approach in the Siemens/Alstom proceedings (M.8677,

para. 140 ff.) in which it was discussed (but ultimately left open) whether a five or a ten-year period was more appropriate.

150 Furthermore, the long period prior to the delivery of shunters also affects the forecast period. With regard to the products relevant in this case, the Bundeskartellamt deems a forecast period of five to ten years appropriate. This is necessary because when forecasting the merger effects the developments that have already occurred and will predictably affect the market situation in coming years have to be taken into account. When applying the usual forecast period of three to five years, larger orders placed in the next three years could no longer be fully considered in the forecast of the market position. Due to the delay, which occurs with regard to larger orders as well as customer-specific adjustments that require a certification process, changes to the market conditions are not directly noticeable even if the event triggering such changes has already taken place.

151 A delivery period of several years is characteristic of the market; this can be avoided only if a shunter customer buys a standard model from a larger manufacturer that has unused production capacities and offers a model already available on the market for which the necessary certification has been obtained. Delivery periods of less than one year can be observed with regard to individual mainline locomotives; this is not usually the case with regard to shunters, however. Executing and completing larger shunter orders in particular takes a very long time. With regard to such products requiring a long development and production time the market situation changes more slowly. Applying the usual forecast period to such a market would present an incomplete picture. This can be countered by applying a longer forecast period. Taking into account the typical period for developing and certifying a shunter and the observable production times for larger orders, the Bundeskartellamt deems a forecast period of five to ten years appropriate.

(2) Determination of market shares

152 To determine the market shares, the Bundeskartellamt uses the actual sales figures as a starting point. The products actually sold on the market seem to form the most reliable basis for determining the historical market position since the actual sales figures also include disruptions in the processing of orders and any additional deliveries. In the forecast, these sales figures are adjusted based on the foreseeable changes, which especially result from the companies' orders received.

153 This is indeed a deviation from the approach taken by the COM in the Siemens/Alstom proceedings (M.8677, para. 147), which used the orders received to determine the market shares. In its legal substantiation, the COM argues that this corresponds to the market

participants' practices regarding the calculation of market shares. Moreover, this approach may also be due to the line of reasoning followed by the COM in its decision which is strongly based on data generated from the analysis of tender procedures. In the market relevant in the present case, however, tender procedures are not nearly as important as with regard to high-speed trains on which the decision rendered by the COM focussed. This is, for one thing, due to the fact that a substantial part of shunters is sold to private industrial companies and railway operators not subject to public procurement law. In addition, even state-owned railway companies do not award all contracts in the context of public tender procedures in this sector, which is shown by Deutsche Bahn AG's order placed in 2018 with regard to which 100 shunters were directly ordered from Toshiba. Against this background, the historical market position in the shunter sector cannot be determined based on public tender procedures. Instead, it is necessary to examine the order and sales figures in detail.

154 The parties to the merger consider it important to base the assessment on the number of orders received instead of the actual sales volumes (written statement of 27 March 2020, p. 34). They point out that this is necessary due to the delay between placing an order and delivering the product. According to the parties, this is exemplified by Toshiba, which has received an order from DB regarding 100 shunters but has not yet delivered any locomotives. In their view, basing the assessment on the number of orders received is also necessary in order to reflect changes in the competitive conditions.

155 Despite the objections raised by the parties to the merger, the Bundeskartellamt considers it correct to base the forecast on the actual sales figures. The parties involved pursue the aim of ensuring that Vossloh's reduced competitiveness is taken into account to the maximum extent possible. The Bundeskartellamt has, however, fully taken account of this issue in the context of the forecast. The Bundeskartellamt agrees with the parties involved that foreseeable changes in the market position of the parties involved have to be considered in the forecast. However, contrary to the opinion outlined by the parties involved in various sections of their written statement, this may work not only to their advantage but, especially with regard to the development of CRRC's market position, also to their disadvantage.

156 Basing the assessment on the number of orders received as desired by the parties to the merger is not advisable for several reasons:

157 From a legal point of view, it should first be considered that a historical market share reflects the actual development with as little distortion as possible since all changes that may occur during order processing are already included in the actual sales data: Possible changes to orders due to defects, cancelations, additional orders, etc. are included in the figures. The

order numbers, however, present several disadvantages. Historical order numbers such as those used in the Siemens/Alstom case would, in the event of deviations, first have to be adjusted based on the corresponding factors. It would also be unclear how to deal with options and orders based on framework agreements. When considering the number of orders received it is also unclear in which year the ordered locomotives were actually delivered; this is particularly important with regard to major contracts – as already described above. When relying on order numbers, the actual sales figures would, in practice, have to be consulted for a significant part of the period under consideration.

158 Another problem of the analysis based on order data is well illustrated by the example of DB's order placed with Toshiba, which is mentioned by the parties to the merger in their written statement of 27 March 2020: The project is very much behind schedule. According to market rumours, it was not even clear during part of the procedure whether the contract would still be implemented. In this case, a phantom market share would have been taken into account in the context of the competitive assessment. Meanwhile, it has become clear based on a public statement that the locomotives are in fact being built. But this example nevertheless illustrates the uncertainties involved in basing the assessment on order numbers.

159 Lastly, when basing the analysis on order numbers, there is the problem that only long-term (major) contracts are taken into account. Orders that are placed at short notice during the forecast period cannot be included, however. In order to avoid this, the order data would also have to be corrected in this regard by adding estimates based on the historical sales figures. Especially in the market in question, which to a significant extent consists of smaller orders placed by industrial customers and private railway companies, orders are, however, often placed at short notice. Vossloh in particular sells products in the context of such smaller orders . If the number of orders received were taken as a basis, Vossloh's market position would be systematically underestimated.

160 The usual approach under competition law to first determine the market position based on the actual sales made is in light of the above preferable also with regard to the market in question. However, in its forecast the Bundeskartellamt also includes the development of the orders received in addition to the market structure in order to be able to assess the facts available to as great an extent as possible when projecting the future market position based on the historical market data.

161 In terms of facts, it is also impossible in this present case to calculate the market shares based on the number of orders received because the order data relating to an important market participant, CZ Loko, are not available.

162 At this point, the problems arising from the restricted investigation powers limited by applicable law with regard to investigations of markets spanning the EEA become apparent: In response to the first voluntary request for information, CZ Loko did not even provide turnover data but only sales data, which were also corrected by the company on several occasions. Data on the number of orders received – which are even more sensitive in terms of competition – were not provided either by CZ Loko or by numerous other foreign market participants. After it became clear that CZ Loko had a German minority shareholder, this company was sent an official request for information. CZ Loko then sent additional historical turnover data. The disclosure of order data would, however, have required an enforcement procedure against the German parent company. In light of the deadline at that time, such an approach did not seem expedient, especially since CZ Loko had sent a production forecast for the coming years. Based on these data, it is, however, impossible to calculate market shares relating to the volume of orders. The number of orders CZ Loko received in the individual years would have had to be estimated.

163 In light of the spurious accuracy of this calculation, a numerical determination of market shares based on order volumes would not have provided any advantages compared to the approach chosen here to take the development of Vossloh's competitiveness into account qualitatively when making the forecast. The information emphasised by the parties involved that Vossloh's competitiveness suffered due to the lengthy sales process and that it had no innovative models in its product range has been fully considered in the forecast, however, and has been taken into account with regard to many aspects.

bb. Profiles of the most important shunter providers

164 In addition to the parties to the merger, the following companies are also active in the shunter market spanning the EEA (in the following, only companies are mentioned that generated sales between 2014 and 2018 as well as Siemens, Bombardier and CAF as manufacturers of mainline locomotives which could at least potentially enter the shunter market).

165 **Alstom S.A.** (in the following: **Alstom**) is a globally active French group domiciled in Saint-Ouen-sur-Seine. Alstom operates exclusively in the transport sector in all areas of railway traffic. The company mainly produces rolling stock for long-distance and regional traffic as well as underground and tram vehicles. In the shunter sector, Alstom has been active since

2015 and with its models Prima H3 and H4 (hybrid and dual-mode locomotives) offers three and four-axle locomotives with centre cabs. According to information that is publicly available, the group reached sales revenues of almost EUR 8.1 billion in the 2018/2019 fiscal year and in 2016 employed approx. 35,000 employees. The company has subsidiaries in around 100 countries across the globe. Alstom is currently planning to take over Bombardier's railway technology division (outlined in para. 174 below).

166 **Stadler Rail AG** (in the following: **Stadler**) is a rolling stock manufacturer domiciled in Bussnang, Switzerland, and predominantly active in the EEA. Stadler Rail's product portfolio includes multiple units, light-rail vehicles and locomotives. In the shunter sector, Stadler has offered various models over the past years, such as two-axle dual-mode locomotives referred to as "Butler". Stadler has only recently introduced a new generation of high-performance shunters and mainline locomotives with the four-axle NG shunter, which is available with diesel-electric drive, as dual-mode version and as hybrid version. According to information that is publicly available, Stadler Rail has approx. 15 subsidiaries (mainly in the EEA) and employed more than 8,000 employees worldwide. The turnover amounts to EUR 1.8 billion.

167 **Gmeinder Lokomotiven GmbH** (in the following: **Gmeinder**) is a German company domiciled in Mosbach. In 2012, the company was newly founded under the name mentioned above under the umbrella of the Zagro Group. Gmeinder's product range includes two, three and four-axle shunters. The company offers shunters with diesel and diesel-electric traction systems, several of Gmeinder's models are also available as hybrid versions. The company is a relatively small company with fewer than 500 employees and a turnover of less than EUR 50 million.

168 **Christoph Schöttler Maschinenfabrik GmbH** (in the following: **Schöma**) is a German company domiciled in Diepholz. The company produces tunnel and narrow gauge locomotives as well as shunters and special vehicles. In the shunter sector, the portfolio is limited to two-axle shunters with diesel drives. The company is a medium-sized company with fewer than 500 employees and a turnover of less than EUR 50 million.

169 **Westfälische Lokomotiv-Fabrik Reuschling GmbH & Co. KG** (in the following: **Reuschling**) is a German company domiciled in Hattingen. The company produces only three-axle diesel locomotives. Reuschling is a comparatively small company with fewer than 500 employees and a turnover of less than EUR 50 million

170 The medium-sized company **Express Service OOD** (in the following: **Express Service**) is domiciled in Ruse, Bulgaria, and produces two and four-axle diesel-hydraulic locomotives

exclusively for industrial use. Express Service is a comparatively small company with fewer than 500 employees and a turnover of less than EUR 50 million.

171 **CZ Loko a.s.** (in the following: **CZ Loko**) is a relatively young Czech company domiciled in Česká Třebová and produces diesel shunters and mainline locomotives as well as electric mainline locomotives. CZ Loko specialises in modernisations but in the past few years, it has taken up the production of new shunters, which it was able to successfully place on the market. CZ Loko offers two or four-axle shunters exclusively with diesel drives. Referred to as the “Effishunter” model range, CZ Loko distributes various models, including the HybridShunter 400, a small two-axle hybrid locomotive. So far, the company has been active only in Italy and Eastern Europe. CZ Loko entered into a strategic partnership with the Caterpillar distributor Zeppelin and in this way has good access to modern engines. According to information that is publicly available, the company reaches a turnover of approx. EUR 90 million and employs approx. 700 employees.

172 **Toshiba Corporation** is an international technology corporation domiciled in Tokyo, Japan. The railway logistics division at Toshiba is part of the “Toshiba Infrastructure Systems & Solutions Corporation”. The company produces high-speed trains and shunters. For the Japanese market, the company produced the hybrid locomotive HD300, which is used by Japan Freight Railway Company. In Europe, the company is represented by Toshiba Railway Europe GmbH domiciled in Germany. For the European market, Toshiba developed the Toshiba HDB800 model, a four-axle shunter offered as a diesel-electric hybrid locomotive and essentially based on the HD300 model. The HDB800 model is supposed to be the next generation of heavy locomotives used at DB Cargo. DB Cargo has ordered 100 shunters from Toshiba. According to information that is publicly available, Toshiba Corporation generated a turnover in the amount of approx. EUR 30.8 billion and in 2019 employed approx. 140,000 employees worldwide.

173 **Siemens AG** (in the following: **Siemens**) is a globally active technology corporation domiciled in Munich and Berlin. Siemens’ railway-related transport business is bundled in the “mobility” segment. Siemens produces regional, inter-city and high-speed trains, underground, tram and light-rail vehicles, passenger carriages, autonomous vehicles and locomotives. For the European market, Siemens produces four-axle off-centre cab locomotive models for mainline services, some of which can also be used with a last-mile module to cover shorter distances without overhead lines. Siemens’ portfolio does not include shunters. Siemens estimates that the percentage of vehicles predominantly used as shunters by its customers is below 5%. According to information that is publicly available, the company generated a turnover of approx. EUR 86.8 billion in the fiscal year and employed approx. 385,000 employees.

174 **Bombardier Inc.** (in the following: **Bombardier**) domiciled in Montreal is a Canadian manufacturer of airplanes and railway technology; the company is divided into the aerospace and transportation segments, which each generate 50% of the turnover. In the transportation segment, the company produces locomotives, multiple units, trams and light-rail vehicles, underground and suburban train vehicles. With its Traxx 3 model, Bombardier offers an electric locomotive which is equipped with a last-mile module; this makes it possible to use the locomotive also for shunting. According to information that is publicly available, the company employed almost 70,000 employees and reached a turnover of approx. US$ 16.2 billion in 2018.

175 Another provider of rolling stock in the EEA and Switzerland is the Spanish company **Construcciones y Auxiliar de Ferrocarriles (CAF)**. CAF manufactures underground railway vehicles, tram vehicles, mainline locomotives and regional, suburban and high-speed multiple units. According to information that is publicly available, the company generated a turnover of EUR 342 million in 2019. The company received its first shunter order in the EEA in 2017. This was a contract with the French metro operator RATP regarding the provision of purely electric shunters, i.e. without diesel engine.

cc. Market position of the companies

176 By conducting a full survey of all shunter manufacturers, the Bundeskartellamt determined the market shares for the period from 2014 to 2018. To the extent that competitors did not respond in writing, the Bundeskartellamt tried to determine their competitive position by making telephone inquiries and comparing information that is publicly available. In this regard, the assumed sales volumes were estimated and a safety margin was added.

177 The parties to the merger consider the way in which the Bundeskartellamt determined the market shares to be incorrect. They criticise, in particular, that the investigations are incomplete because the Bundeskartellamt did not receive responses from several buyers domiciled abroad (written statement of 27 March 20, p. 38). They are of the view that based on the investigations no conclusions can be drawn as to the market volume or the target company’s market share because the Bundeskartellamt received information from only one third of the buyers. They therefore hold that the conclusion drawn by the Bundeskartellamt that roughly half of the market is based on sales in Germany is incorrect. In their opinion, the sales in other countries of the EEA and Switzerland are extremely understated since only few companies domiciled outside Germany responded to the questionnaire (written statement of 27 March 2020, p. 38). In addition, the parties hold that the Bundeskartellamt incorrectly included Vossloh’s locomotives used for mainline services by customers (written

statement of 27 March 2020, p. 39) and that the Bundeskartellamt also incorrectly included Vossloh's locomotives which the company sold to its own rental pool (written statement of 27 March 2020, p. 40).

178 First, it is to be noted that the assumption of the parties to the merger that the market volume is incomplete seems to be based on the presumption that the Bundeskartellamt determined the market volume by surveying buyers. However, the Bundeskartellamt surveyed the supply side to determine the market volume. A full survey was carried out with regard to manufacturers, which was not done with respect to the demand side. The central complaint brought forward by the parties to the merger is therefore irrelevant. This and the other objections raised by the parties involved are discussed in detail following the outline of the market structure below.

179 The investigations have shown the following sales volumes and market shares for the period from 2014 to 2018:

Volume	2014		2015		2016		2017		2018		2014-2018	
	Units	%	Units	%	Units	%	Units	%	Units	%	Units	%
CRRC	0		0		0		0		0		0	
Vossloh	40-50	50-60	40-50	55-65	20-30	30-40	20-30	40-50	20-30	30-40	150-200	40-50
Stadler	0	0	<5	<5	<5	<5	0		0		0-10	<5
Alstom	<5	<5	<5	<5	5-10	10-20	10-20	10-20	5-10	5-10	20-30	5-10
Siemens	0		0		0		0		0		0	
Bombardier	0		0		0		0		0		0	
Gmeinder	<5	<5	<5	<5	<5	<5	<5	<5	5-10	5-10	10-20	<5
CAF	0		0		0		0		0		0	
Schöma	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0-10	<5
Reuschling	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0-10	<5
Toshiba	0		0		0		0		0		0	
Express Service	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	10-20	<5
CZ Loko	20-30	20-30	10-20	10-20	10-20	20-30	5-10	10-20	20-30	30-40	75-100	20-30
Others	10	10-20	10	10-20	10	10-20	10	10-20	10	10-20	50	10-20
TOTAL:	**87**		**78**		**72**		**60**		**79**		**376**	

Table 1: Sales volumes and market participants' market shares based on sales volumes from 2014 to 2018

180 Based on this, the market volume for the period from 2014 to 2018 was between 60 and 87 units. This results in an average annual market volume of approximately 75 shunters in this period.

181 In the shunter sector, the market volume fluctuates considerably: In 2014, the market volume reached its peak with 87 locomotives; in 2017, however, the market volume dropped to roughly 60 locomotives before it then significantly increased again. This phenomenon is, however, sufficiently taken into account by assessing a five-year period to determine the market shares (see para. 147 above). These fluctuations will also occur in the future, especially if major contracts are put up for tender by previously state-owned railway companies: In 2015, the Swiss company SBB awarded a contract relating to 47 dual-mode locomotives to Alstom; in 2018, DB directly awarded the contract relating to the research, development and subsequent production of 100 shunters to Toshiba; in early 2019, another major contract was awarded to the Swiss rolling stock manufacturer Stadler by the Finnish railway company VR Group; this contract sets out the provision of 60 heavy shunters. Although these orders are not fully delivered in the same year, it is nevertheless foreseeable that from 2022 the market volume will be significantly higher due to these three orders alone.

This will apply all the more as soon as DB awards the contract relating to the provision of 200 dual-mode locomotives currently tendered (in the following: DB dual-mode locomotive). AKIEM, which belongs to SNCF, is also considering the procurement of further shunters.

182 In terms of the value-based market shares, the investigations have shown the following results (with regard to “others”, the calculation of the fictitious turnover has been based on the average prices of the other market participants, which due to the high prices charged by Vossloh and partly also by Alstom are relatively high):

Turnover	2014		2015		2016		2017		2018		2014-2018	
	€ million	%	€ million	%	€ million	%	€ million	%	€ million	%	€ million	%
CRRC	0		0		0		0		0		0	
Vossloh	80-90	60-70	80-90	60-70	50-60	40-50	60-70	40-50	70-80	40-50	350-400	50-60
Stadler	0	0	<5	<5	<5	<5	0		0		0-10	<5
Alstom	<5	<5	5-10	<5	20-30	20-30	20-30	20-30	30-40	10-20	90-100	10-15
Siemens	0		0		0		0		0		0	
Bombardier	0		0		0		0		0		0	
Gmeinder	<5	<5	<5	<5	<5	<5	<5	<5	5-10	5-10	20-30	<5
CAF	0		0		0		0		0		0	
Schöma	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0-10	<5
Reuschling	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0-10	<5
Toshiba	0		0		0		0		0		0	
Express Service	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	10-20	<5
CZ Loko	10-20	10-20	5-10	5-10	10-20	10-20	5-10	5-10	30-40	20-30	90-100	10-15
Others	15.2	10-20	16.5	10-20	17.5	10-20	21.7	10-20	23.5	10-20	94.3	10-20
TOTAL:	**132.0**		**128.5**		**125.9**		**130.0**		**185.5**		**702.0**	

Table 2: Turnover and market participants’ market shares based on turnover from 2014 to 2018

183 In past years, Vossloh therefore clearly was the market leader with regard to the distribution of shunters in the EEA and Switzerland. This becomes particularly clear when considering the value-based market shares. They are more informative with regard to the market position since shunters are highly differentiated products, especially in terms of performance and the ability to be used for mainline services. By considering the value-based market share, the ability to manufacture the more complex, higher-quality products is already reflected in the market shares.

184 To the extent that the parties to the merger assume in their written statement of 27 March 2020 that the market volume could be understated because only around one third of the buyers were surveyed (see written statement 27 March 20, pp. 38 f.), this consideration falls short because the market volume was not determined by surveying the demand side but the supply side. The fact that the Bundeskartellamt decided not to carry out a full survey of the buyers does not affect the market volumes determined because the Bundeskartellamt collected the data regarding these transactions by conducting a full survey of the opposite market side, the shunter manufacturers.

185 The parties involved do not provide specific indications suggesting that the investigations of the providers are incomplete. In particular, they fail to specify the providers which the Bundeskartellamt may possibly not have taken into account or not have considered properly. Instead, their general objections are limited to the statement that it has to be "assumed or, in any case, it cannot be ruled out that significantly more than 50% of the overall sales are not generated in Germany" (see written statement of 27 March 2020, p. 38).

186 According to case law, the parties to the merger are, however, required to substantiate their submissions if they intend to dispute the investigation results reached by the Bundeskartellamt. It is not sufficient to voice general doubts as to the reliability of the data collected and the analysis of such data. The decision can be based on the investigation results unless the submissions made by the parties involved or the facts as such provide reasons not to do so after careful consideration of all available possibilities (see BGH decision of 11 November 2008, KVR 60/07 – *E.ON/Eschwege*, para. 32 f.; text cited from juris).

187 Due to their knowledge of the market, the parties to the merger would indeed be able to point out companies which were not taken into account properly. They have not made any submissions in this regard, however. If there were other providers producing a substantial number of shunters (and only such providers could cause visible changes in the market situation), the target company could be expected to be aware of such providers due to its knowledge of the market.

188 There are no other indications suggesting that the investigation results reached by the Bundeskartellamt could be incorrect. Against the background that the Bundeskartellamt carried out the investigations both of the competitors and the buyers based on the address lists provided by the target company, it is not very likely that the results are incomplete. With regard to these companies alone, it became clear that a large number of these companies do not even produce shunters but special vehicles or dual-mode vehicles which are not

included in the market. The essential aspects of the investigation results reached by the Bundeskartellamt also correspond to the description of the market situation which, based on a study carried out by the market research firm SCI Verkehr GmbH, the parties to the merger have taken as a basis for their notification.

189 To the extent the parties to the merger criticise that the Bundeskartellamt also included those Vossloh locomotives that are in fact used as mainline locomotives in the calculation of the shunter market shares (see written statement of 27 March 2020, p. 39), this argument cannot be upheld. Vossloh delivered exactly the same product to customers using this locomotive as a mainline locomotive and to customers using it as a shunter. Against this background, breaking Vossloh's sales of DE12/DE18 locomotives down into separate markets for mainline locomotives and shunters is already ruled out on legal grounds. DE12/DE18 mainline locomotives are perfect substitutes for shunters of the same model. Due to the practical difficulties which would be caused by having to assign the locomotives to different markets depending on how the customer specifically uses the vehicle, it is impossible to reach a different conclusion. In particular, whenever a customer subsequently changes the purpose of use, this would lead to a shift in the market situation. This would not be compatible with the purpose of defining the market to determine the competitive forces affecting market participants.

190 The view of the parties involved is the extension of their opinion that mainline locomotives are also to be included in the market for shunters already extensively discussed in the context of the market definition. However, as already outlined above (for details see B.II.1.a.bb), smaller mainline locomotives can be substituted with high-quality shunters but this substitutability does not apply the other way round. For the sake of clarity: The fact that shunters which are equipped accordingly and used for mainline services are also to be included in the market for shunters does not conversely mean that all mainline locomotives are included in the market for shunters. The decisive question is whether a locomotive has the specific characteristics of a shunter and is therefore fully suited for shunting; this has already been discussed in the context of the market definition.

191 The view of the parties involved that some of the locomotives sold by Vossloh were not to be taken into account when calculating the market shares, which was first mentioned in their written statement of 27 March 2020, cannot be accepted either. The parties to the merger are of the opinion that the locomotives sold to Vossloh's "rental pool" are not to be regarded as sales (see written statement of 27 March 2020, p. 40). In their view, the rental pool is an instrument to balance production when demand is low. For this purpose, locomotives are produced in the hope that the company will be able to rent out or sell these vehicles later.

192 Contrary to the view held by the parties to the merger, these locomotives are also to be included in the market. Reasons for this include

This rental model essentially constitutes a special form of financing: The acquirer rents a new locomotive so that the acquirer does not immediately have to pay the acquisition costs in full; the locomotive is paid through a rental model instead. The differences to the highly common car leasing models are therefore minor. In addition, the locomotive is delivered and used as a new locomotive. Once the contract ends – irrespective of whether the term is short or long – and the locomotive is returned, the manufacturer merely receives a used locomotive which can no longer be sold as a new vehicle. Nevertheless, the locomotive is put into service as a brand new vehicle also in this case. This has to be taken into account when determining the market situation because otherwise locomotives sold in the context of a rental pool would not be included in any way when determining the market situation.

193 The distribution of the market shares outlined in tables 1 and 2 above also shows that CRRC was not able to deliver any shunters in the geographically relevant market during the period under consideration but was merely awarded a contract from DB relating to the provision of hybrid shunters. CRRC's market position is therefore addressed only in the context of the forecast below (for details see B.II.2.g.cc).

194 The difference in market shares between Vossloh and the second largest competitor is considerable. The second largest provider in the market is the company CZ Loko, which reached a market share of 20-30% in terms of volume and 10-15% in terms of sales. Alstom is ranked third with a market share of 5-10% in terms of volume and 10-15% in terms of sales. The medium-sized company Gmeinder is another important provider in Germany; its volume-based and sales-based market shares did not exceed 5%, however. To date, Gmeinder offers only vehicles for secondary lines, which do not require certification.

195 The Swiss railway technology manufacturer Stadler did not play a significant role from 2014 to 2018; the company merely sold individual smaller shunters, which is why its market share was below 5%. However, in April 2019 the company was awarded a contract with the Finnish VR Group regarding the provision of 60 locomotives for shunting and light mainline services. For this purpose, Stadler will develop a new generation of diesel shunters. It is to

be expected that Stadler will strengthen its activities in the shunter sector within the forecast period and gain additional market shares not only due to the contract awarded by VR Group.

196 None of the other companies' market shares exceed 5%; these companies also offer only vehicles for use on secondary lines. The companies in this regard are the medium-sized companies Westfälische Lokomotiv-Fabrik Reuschling GmbH & Co. KG, Christoph Schöttler Maschinenfabrik GmbH and the Bulgarian company Express Service OOD.

197 At present, Siemens and Bombardier are not active in the shunter business. Due to their technical knowhow, these companies would be able to enter this market without any problems. Should they decide to enter the market, however, these companies would still have to put in the considerable time and costs involved in developing a new shunter (with regard to the level of entry barriers see B.II.2.b above).

198 Until 2014, the competitor Voith also offered shunters. However, the company discontinued its shunter production in 2014. In 2008, Voith was awarded a contract with Deutsche Bahn AG regarding the production of 130 Gravita shunters. This order was processed in the subsequent years and in 2014 the last [5-10] units of this major contract were delivered. Voith was not able to secure any follow-up orders regarding its diesel-hydraulic shunters. As a consequence, the company exited the shunter market.

199 When assessing the conditions of competition, it has to be taken into account that especially CZ Loko is currently not able to limit Vossloh's competitive scope of action in most Western European countries. This particularly also applies to Germany, which is by far the country with the largest sales volumes for shunters and which accounts for roughly half of the market volume. This is mainly due to the fact that CZ Loko does not yet offer a product that has been certified for operation in Germany or France. As already explained in the context of entry barriers, this certification is not a mere formality. Due to the strict technical requirements for certification in Germany, it may be necessary to completely redesign the vehicles produced by CZ Loko in order to be able to sell locomotives for use on the German railway network. The company is therefore in no way able to limit Vossloh's scope of action in several, from Vossloh's point of view very important, states due to the lack of necessary certifications.

200 In addition, the fact that in 2018 CZ Loko sold almost as many quantities as Vossloh must not conceal the fact that the difference in sales between the two companies is considerable when looking at the entire period from 2014 to 2018. CZ Loko's sales volumes vary considerably from year to year. The sales volume achieved in one single year is therefore of no informative value especially with regard to assessing CZ Loko's market position. For instance, the quantities sold were halved as well as tripled from one year to the next.

According to the company's forecast, this will not change in the next years. Against this background, it is, especially with regard to CZ Loko, necessary to consider a longer period of time in order to be able to make a reliable statement regarding the company's competitiveness. If the five-year period from 2014 to 2018 is considered, Vossloh is twice as large as CZ Loko in terms of volumes sold alone. This applies all the more if it is taken into account that the products manufactured by CZ Loko are considerably cheaper than the locomotives produced by Vossloh. When comparing merely the sales generated in 2018, CZ Loko reached a market share that was only half of Vossloh's market share. When considering the five-year period from 2014 to 2018 – which is decisive due to the fluctuations in CZ Loko's sales figures –the actual difference in size between CZ Loko and Vossloh becomes clear: In this period, Vossloh was roughly four times the size of CZ Loko.

201 Against this background, the assessment outlined by the parties involved in their written statement of 27 March 2020 (p. 51) that the importance of CZ Loko was underestimated by the Bundeskartellamt is to be rejected. In fact, the opposite is likely to be the case: In light of the missing possibility to compete with Vossloh for customers in Germany and France, CZ Loko's importance is even overestimated. CZ Loko is a very distant competitor of Vossloh. The limiting effect CZ Loko has on Vossloh's scope of action is even overstated by the market shares outlined above.

202 In connection with the assessment of the market shares, a particularity regarding the target company's sales is to be pointed out, which does not become apparent when considering the five-year average: The volumes sold by Vossloh clearly declined in terms of quantities from 2015 to 2016. This was connected to a change in the company's product range switching to high-priced products since the production of the smaller G6 model produced in large quantities and the production of other models was discontinued. At the same time, this is, however, reflected in the rise of Vossloh's value-based market shares, which in 2016 increased more sharply than reflected in the volume-based figures.

203 In past years, Vossloh reached the following volume-based and value-based market shares:

	Amount (units)	Share	Turnover (EUR million)	Share
2014				
2015				
2016				
2017				
2018				

2014-2018

Table 3: Development of Vossloh's sales and turnover (2014 to 2018)

204 In the individual years of the period under consideration, Vossloh's market shares also fluctuated considerably. This is, however, less due to Vossloh's sales volumes than due to CZ Loko's greatly differing sales figures, which result in significant differences between the market volumes reached in the individual years. The change in Vossloh's model range resulted in a decline in sales figures falling from [40-50] to [20-30] vehicles and a significant decline in volume-based market shares. At the same time, Vossloh's turnover increased significantly after the decline in 2016 with the result that the decline in Vossloh's value-based market shares is considerably lower than the decline in Vossloh's volume-based market shares. In particular, Vossloh's value-based market shares were in every year above the threshold for the assumption of dominance provided for under German law. This development reflects the company's change in model range to larger, more powerful and at the same time more expensive shunters.

205 In terms of numbers, the threshold for the assumption of single firm dominance pursuant to Section 18(4) GWB was nevertheless exceeded with regard to the relevant value-based market shares in every single year of the period under consideration, especially also in 2018 and with regard to the average market share reached in the last five years.

206 The statement made by the parties to the merger that the Bundeskartellamt had mentioned a lower market share in the discussion with the parties involved on 28 January 2020 is correct. This is explained by the fact that at this time the Bundeskartellamt was able to base its assessment only on volume-based market shares since CZ Loko, pointing out the voluntary nature of the questionnaire – as already mentioned above (see para. 162 ff.) – had not provided turnover figures. Therefore, it was not possible to calculate the actual, relevant value-based market share at this time. Information regarding turnover figures was provided later when CZ Loko's parent company Zeppelin GmbH, which indirectly owns 49% of CZ Loko, responded to the request for information. At the time of the discussion, this information was not yet available, however.

207 When considering Vossloh's sales figures, a clear tendency can be seen which is also important for the question of Vossloh's market dominance: Whereas Vossloh produced between [40 and 50] locomotives each year in 2014 and 2015, sales dropped to [20 to 30] locomotives in 2016. In the following years 2017 and 2018, sales remained almost stable. These questions, especially also as to the expected development in the next years, will be addressed in detail when forecasting Vossloh's market position without the merger (see B.II.2.g.bb below).

dd. Actual competitive situation and competitive proximity

208 When considering the actual situation of competition, it can be seen that Vossloh holds a prominent position in the market and Alstom is to be regarded as its closest competitor. The analysis of the actual competitive situation also shows that CZ Loko plays a less important part in the market despite its relatively large sales figures. It also becomes clear that providers with (low) market shares in the market, such as Schöma, Reuschling and Express Service, actually play a very minor role. These findings are decisively based on the results of the bidder analysis carried out and the results of the buyer survey, especially the buyers' categorisation of shunter manufacturers as preferred suppliers or best and second-best alternatives as well as the evaluation of providers carried out by buyers.

209 With regard to the results, it is to be noted that the analysis is predominantly based on the information provided by buyers domiciled in Germany since the Bundeskartellamt received information particularly from these companies. This is the reason why the parties involved raise doubts as to the significance of the investigation results with regard to the actual competitive situation and even consider the results to be "unusable" (see written statement of 27 March 2020, p. 46, p. 50 and p. 51). The Bundeskartellamt contests this allegation. At this point, the Bundeskartellamt notes, for one thing, that in many cases the buyer surveys conducted by the Bundeskartellamt do not (and cannot) constitute full surveys, especially if the markets are larger than national markets, which makes it difficult to conduct investigations due to the Bundeskartellamt's lack of powers outside Germany. In addition, carrying out a full survey of all buyers is in many cases impractical within the framework of statutory merger control provisions and not a requirement for analysing the actual competitive situation.

210 For another, the Bundeskartellamt received written responses from altogether 45 companies in the present case, 18 of which are domiciled in (mostly Western) European countries other than Germany. In view of the fact that Germany is the most important market for shunters, which accounts for half of the shunter sales in the EEA and Switzerland, the Bundeskartellamt is of the opinion that the answers can be used to draw an informative picture of the actual competitive situation at least by approximation. If the analysis of the actual competitive situation is to be put into perspective in the individual case, the Bundeskartellamt will address this separately in the following. The Bundeskartellamt is therefore of the opinion that the analysis of the actual competitive situation based on the survey of buyers provides an overall coherent picture of the situation despite the fact that Vossloh's position is slightly overstated due to the data basis and the position of, for example, CZ Loko is slightly understated.

(1) Analysis of bidders

211 Analysing bidders makes it possible to make statements especially about the shunter manufacturers that usually participate in the tender procedures, i.e. which and how many competitors compete with one another in the tender procedures, how often they are awarded the contract, how often the parties to the merger are competitors in tender procedures and how often they compete with other manufacturers.

212 The analysis of bidders carried out by the Bundeskartellamt is based on a total of 51 invitations to tender issued by altogether 18 of the buyers surveyed (industrial customers and railway customers, five of which from outside Germany) from 2008 up to and including 2019.

213 In their written statement of 27 March 2020, the parties involved criticise that in the course of the proceedings Vossloh and CRRC were merely asked about their participation in tender procedures from 2014 while the buyers were asked about tender information regarding the past ten years (written statement of 27 March 2020, p. 48); it is not clear how this could limit the interpretation of the analysis of bidders. It is common practice to base the analysis of tender procedures on data provided by the buyers; checking the plausibility of all of the buyers' tender procedures with the information provided by all suppliers might be necessary only if the database available gives rise to doubts. The parties notifying the merger do not make any submissions in this regard, however.

214 In so far as the parties involved voice their criticism to the effect that the assessment only insufficiently takes into account Vossloh's lower success rate from 2014 onwards, reference is made to the results gained from the analysis of the participation rates, in which nuanced considerations are made for each period of time and Vossloh's declining role is indeed taken into account.

215 The database mentioned above (51 invitations to tender issued by 18 of the companies surveyed; 5 of these companies are domiciled outside Germany) shows that not all of the companies surveyed provided information on tender procedures. According to the findings of the Bundeskartellamt, this is less due to the fact that – as assumed by the parties to the merger – buyers for which the target company is of minor importance had little "incentive" to respond to the questionnaire (written statement of 27 March 2020, p. 48) but due to the fact that many buyers surveyed stated that they had not issued any invitations to tender during this period.

216 The Bundeskartellamt refutes the statement implicitly made by the parties to the merger that the underlying database is reliable only to a limited extent because the individual tender

procedures cannot be clearly assigned to types of locomotives (written statement of 27 March 2020, p. 46). The Bundeskartellamt analysed the information regarding the individual tender procedures and – based on the criteria known to the parties to the merger – adjusted the database excluding tender procedures/direct awards not concerning shunters.

217 First, it must be added that approx. 50% (24 cases) of the tender procedures on which information was provided in the present case are non-competitive tenders or awards (either direct awards or only one manufacturer participated in the tender procedure). The parties notifying the merger are right in saying that the buyers provided information not only on pure tender procedures involving more than two bidders but also on direct awards, which shows that direct awards play an important role in the market (written statement of 27 March 2020; p. 47).

218 The parties to the merger welcome the fact that the direct awards were included in the analysis but at the same time criticise that they were taken into account (written statement of 27 March 2020, p. 47). In this regard, it is once again to be noted that in the following a distinction is made between participation rates and encounter rates. With respect to participation rates, the competitive tenders including more than two participants were considered separately. The pair-based encounter rates of course refer only to competitive tender procedures since the term “encounter” inherently implies that a minimum of two participants are involved.

219 In general, the parties notifying the merger are right in saying that the analysis of the tender procedures is of limited importance due to the fact that most of the answers were provided by companies domiciled in Germany.

220 Based on this analysis, the statement can be made that Vossloh is an important shunter supplier whose market power has, however, decreased over the past few years. CZ Loko, a company with relevant market shares operating in the market, plays a minor role; in this respect, it is to be pointed out that the responses provided by buyers domiciled in Germany were overrepresented. Gmeinder was involved in numerous tender procedures, its rate of success, however, was significantly lower than Vossloh’s rate of success. Alstom’s importance has increased during the period under consideration. Due to having participated in tender procedures in the most recent period under consideration, CRRC is already to be regarded as a competitor in the market.

221 Table 4 shows how often the parties to the merger and other manufacturers of locomotives have participated in tender procedures. When interpreting this and also the following tables in this section, it is to be noted that the value “<5” also includes the value “zero” for reasons

of non-disclosure of business secrets. Vossloh has the highest participation rate – both with regard to competitive and non-competitive tender procedures. Vossloh participated in altogether [70-80]% of the 51 tender procedures considered here. Vossloh participated [20-30] times ([90-100]%) in the 24 tender procedures involving at least two participants. Gmeinder participated in altogether [50-60]% of the competitive tender procedures on which this analysis is based and is followed by Alstom with its rate of participation in competitive tender procedures reaching [40-50]%. Voith's participation rate is the same; however, the company was active in the market only in the first half of the period under consideration. Reuschling and Windhoff rank considerably lower than Alstom; both companies each participated in [10-20%] of the competitive tender procedures. Stadler, which has entered the market fairly recently, did not participate in any of the competitive tender procedures to a relevant extent during the period under consideration.

Company	Number of tender procedures and direct awards participated in	% of total number	Participation in competitive tender procedures	% of competitive tender procedures
Vossloh	40-50	[70-80]%	[20-30]	[90-100]%
Gmeinder	10-20	[30-40]%	[10-20]	[50-60]%
Alstom	10-20	[20-30]%	[10-20]	[40-50]%
Voith	10-20	[20-30]%	[10-20]	[40-50]%
Reuschling	<5	[5-10]%	<5	[10-20]%
Windhoff	<5	[5-10]%	<5	[10-20]%
CRRC	<5	[5-10]%	<5	<5%
Stadler	<5	<5%	<5	<5%
CZ Loko	<5	<5%	<5	<5%
Schöma	<5	<5%	<5	<5%
Vollert	<5	<5%	<5	<5%
HFM (Vossloh)	<5	<5%	<5	<5%
Toshiba	<5	<5%	<5	<5%
Others	< 5	[5-10]%	<5	[5-10]%
Total number of tenders	51		24	

Table 4: Number of tender procedures participated in and participation rates

222 During the period under consideration, CRRC participated in a total of <5 tender procedures/direct awards, of which no less than <5 tender procedures were competitive ones. CZ Loko is less frequently represented in the available data on tender procedures despite its significant market share in the overall European market; the company

participated in only <5 tender procedures. The reason for this is, however, that the data on tender procedures were predominantly provided by companies that operate in Germany.

223 For one thing, this indicates that CZ Loko's market shares are achieved due to providing products only to a limited group of buyers (mainly in Eastern Europe; CZ Loko does not yet offer any shunters certified for use in Germany and France). For another, this shows that CRRC's growing role in the competitive situation is not yet reflected in the assessment of the market shares, which is based on deliveries already made.

224 Table 5 shows the number of competitive tender procedures in which the companies participated in different periods of time. When analysing these data, the very low number of cases in the induvial periods of time has to be taken into account; this makes it impossible to provide statistically reliable statements but merely allows to describe tendencies. With all due caution, the data indicate that Vossloh participated in most of the competitive tender procedures between 2011 and 2016; however, the participation rate declined in the most recent period from 2017 to 2019. In contrast, the participation rates of Alstom and Gmeinder Lokomotiven increased. This reflects the fact that the importance of both companies increased in the period under consideration. Voith still participated in tender procedures until the period from 2014 to 2016; Voith's participation rate of [40-50]% therefore results from a significantly higher participation rate in the years prior to its exit from the market. CRRC first came into the picture between 2017 and 2019.

	Sum total	2008-2010	2011-2013	2014-2016	2017-2019
Vossloh	[20-30]	<5	[5-10]	[5-10]	<5
Gmeinder Lokomotiven	[10-20]	<5	<5	[5-10]	<5
Alstom	[10-20]	<5	<5	<5	<5
Voith	[10-20]	<5	[5-10]	<5	0
Reuschling	<5	<5	<5	<5	<5
Windhoff	<5	<5	<5	<5	<5
CZ Loko	<5	<5	<5	<5	<5
CRRC	<5	<5	<5	<5	<5
Schöma	<5	<5	<5	<5	<5
Vollert	<5	<5	<5	<5	<5
HFM (Vossloh)	<5	<5	<5	<5	<5
Others	<5	<5	<5	<5	<5
Total number of competitive tender procedures	24	4	8	8	4

Table 5: Number of tender procedures participated in involving at least two participants, categorised according to periods and companies

225 The analysis of the companies that won the competitive tender procedures between 2008 and 2019 shows that Vossloh's success rate is the highest ([50-60]%); however, the frequency of the successful awards decreased over time. The fact that Vossloh's success rate was only [30-40]%, at least from 2014, as stated by the parties to the merger (written statement of 27 March 2020, p. 49) does not contradict this. Gmeinder's success rate of [20-30]% is significantly lower but increased over time. CZ Loko's success rate is <5% as is Schöma's success rate.

226 The analysis of the frequency with which the individual companies encountered each other in tender procedures shows the following results (see table 6):

If participation of...	Then also participation of...											
	Vossloh	Alstom	Gmeinder	Voith	Stadler	Reuschling	Windhoff	CZ Loko	CRRC	Schöma	Vollert	Others
Vossloh		[40-50%]	[60-70]%	[40-50%]	<5%	[10-20]%	[5-10]%	<5%	[5-10%	<5%	<5%	[5-10]%
Alstom	[90-100]%		[60-70]%	[30-40]%	<5%	[30-40]%	<5%	<5%	[10-20]%	<5%	<5%	<5%
Gmeinder	[90-100]%	[40-50%]		[20-30]%	<5%	<5%	[10-20]%	<5%	[5-10]%	<5%	<5%	<5%
Voith	[90-100]%	[30-40]%	[30-40]%		<5%	[30-40]%	[10-20]%	<5%	<5%	<5%	<5%	[20-30]%
Stadler	<5%	<5%	<5%	<5%		<5%	<5%	<5%	<5%	<5%	<5%	<5%
Reuschling	[90-100]%	[90-100]%	<5%	[90-100]%	<5%		<5%	<5%	<5%	<5%	<5%	<5%
Windhoff	[60-70]%	<5%	[60-70]%	[30-40]%	<5%	<5%		<5%	<5%	[30-40]%	[30-40]%	<5%
CZ Loko	<5%	<5%	<5%	<5%	<5%	<5%	<5%		<5%	<5%	<5%	[90-100]%
CRRC	[90-100]%	[90-100]%	[90-100]%	<5%	<5%	<5%	<5%	<5%		<5%	<5%	<5%
Schöma	<5%	<5%	<5%	<5%	<5%	<5%	[90-100]%	<5%	<5%)		[90-100]%	<5%
Vollert	<5%	<5%	<5%	<5%	<5%	<5%	[90-100]%	<5%	<5%	[90-100]%		<5%
Others	[50-60]%	<5%	<5%	[50-60]%	<5%	<5%	<5%	[20-30]%	<5%	<5%	<5%	<5%

Table 6: Manufacturers' **pair-based** encounter rates in competitive tender procedures

227 In this respect, it is to be noted that the analysis of the pair-based encounter rates is of course based only on competitive tender procedures involving at least two participants. Since 50% of the data relating to tender procedures concerned direct awards it is to be pointed out here that the analysis of the pair-based encounter rates is only of limited informative value. It shows that in [40-50]% of the tender procedures (altogether [10-20] tenders) in which Vossloh took part, Alstom also submitted a bid. In [60-70]% of the cases in which Vossloh participated in a tender procedure, Gmeinder also submitted a bid. The many encounters between Vossloh and Voith are – as already mentioned above – due to the intense competition between the two companies prior to Voith exiting the market.

228 CRRC and Vossloh were pitted against each other ; this is, however, the Contrary to the assumption of the parties to the merger, this is not

It therefore appears that the parties to the merger are already to be regarded as competitors and that CRRC was previously not to be considered a close competitor of Vossloh.

(2) Preferred suppliers

229 The Bundeskartellamt asked the buyers about their preferred suppliers.

230 19 of the companies that responded to the corresponding question named Vossloh as their preferred supplier. The second-best company Alstom was mentioned six times. Gmeinder was mentioned three times and CZ Loko only twice. Alstom was mentioned nine times as the best alternative, Vossloh four times, Gmeinder three times and CZ Loko once.

231 Vossloh was mentioned 25 times altogether either as preferred supplier, best alternative or second-best alternative, Alstom 17 times, Gmeinder seven times and Stadler six times. This shows that Alstom can be regarded as a close competitor of Vossloh. As a provider with a relevant market share, CZ Loko was, however, rarely mentioned as preferred supplier, best alternative or second-best alternative; other providers with (small) market shares in the period under consideration, such as Reuschling, Schöma and Express Service, are not mentioned at all as preferred suppliers or (second) best alternatives. Voith, which exited the market in 2014, was mentioned once as preferred supplier and only once as best alternative; one of the companies mentioning Voith added the explanation that it procured used locomotives from this company.

232 To the extent the parties to the merger doubt that the results are representative and of informative value (written statement of 27 March 2020, p. 49) due to the analysis essentially being based on information provided by buyers domiciled in Germany, this view is to be refuted here. For one thing, it is to be taken into account that some of the buyers surveyed (both domiciled in and outside Germany) were not able to clearly answer the question as to their preferred suppliers. For another, no less than 11 of the remaining 30 companies are domiciled outside Germany and four of these companies mentioned Vossloh as their preferred supplier.

233 The objection raised by the parties to the merger that the question regarding the preferred supplier merely concerns the buyers' "perception" and is not intended to gather reliable data

relating to orders and the market is incomprehensible. According to the parties notifying the merger, tender procedures and direct awards are also combined here (written statement of 27 March 2020, pp. 49 f). In this respect, the parties to the merger do not seem to consider the fact that the question regarding the preferred supplier has been common practice in numerous merger control proceedings conducted by the Bundeskartellamt and constitutes only one aspect of the competitive analysis. In addition, it remains unclear in how far the question regarding the preferred supplier has to be broken down into tender procedures and direct awards; the parties to the merger fail to provide more detailed information in this regard.

234 The analysis shows that CZ Loko as well as Reuschling, Schöma and Express Service cater to specific customers, some of which have special demands, and play a minor role in the overall market.

235 The fact that none of the buyers mention CRRC as preferred supplier or best/second-best alternative is not surprising since at least the suppliers surveyed have not yet been able to gain sufficient experience so as to provide a corresponding evaluation.

236 The following chart once again shows Vossloh's importance as perceived by the buyers:

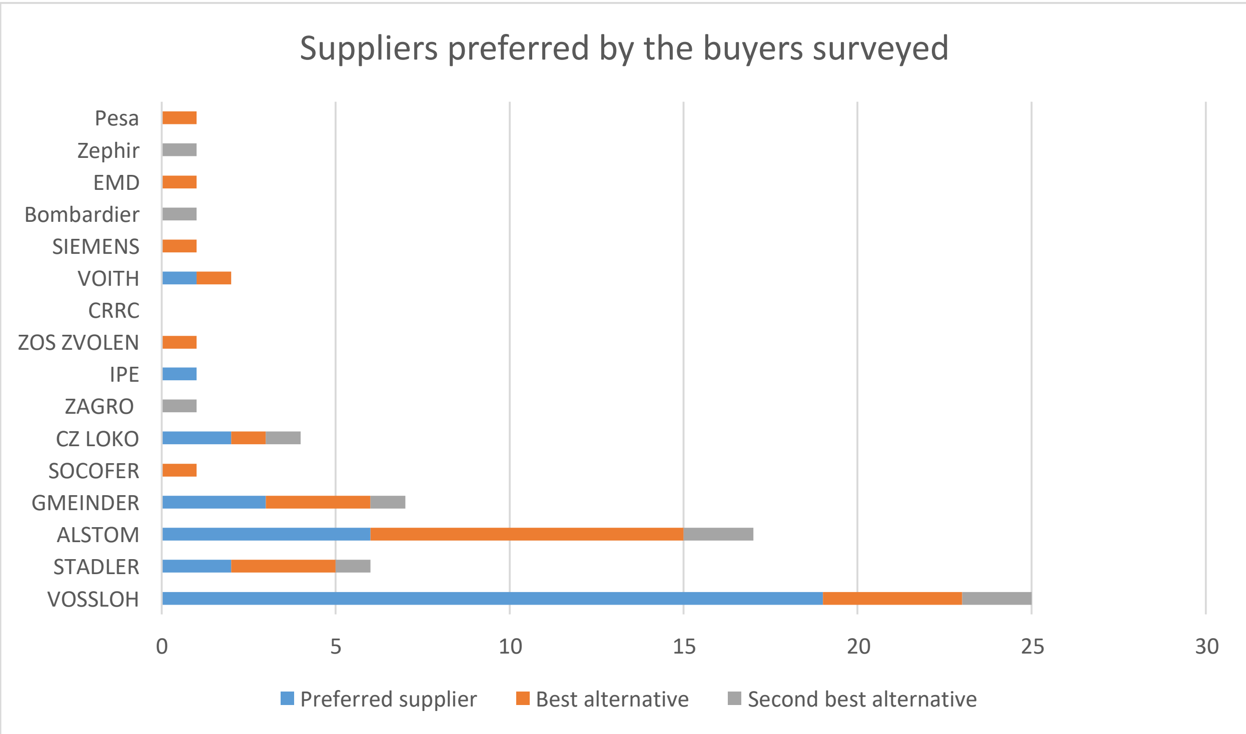

Diagram 1: Suppliers preferred by the buyers surveyed

(3) Evaluation of manufacturers

237 The Bundeskartellamt also asked the buyers how suitable they thought the shunter manufacturers were. The buyers had the option to evaluate all manufacturers (the categories provided were “unknown”, “unsuitable”, “less suitable”, “suitable”, “very suitable” and “particularly suitable”). When categorising the evaluation according to school grades (particularly suitable = 1, etc., and unsuitable = 5; “unknown” was not categorised) it becomes clear that Vossloh ranks best: On average, Vossloh’s score was 1.82.

238 The second-largest competitor Alstom was rated 2.58, Gmeinder and Stadler were each rated 2.5. The score of the medium-sized companies Schöma and Reuschling was 3.64 and 3.32 respectively and they were categorised as “unknown” by 29 and 20 buyers respectively; Express Service was categorised as “unknown” by 41 buyers and was not evaluated by a single buyer. The analysis of the manufacturers’ evaluation also shows that CZ Loko received only a medium rating of 3.06 and was not even known to 24 buyers.

239 CRRC’s ranking was 3.38 and therefore CRRC at least performed better than Schöma. The company was categorised as “unknown” by 25 buyers.

240 With regard to evaluating the manufacturers, the parties to the merger once again criticise the supposedly inadequate database (written statement of 27 March 2020, p. 51) and, as a result, the low number of evaluations CZ Loko received as well as Vossloh’s positive evaluation. In this respect, it is once again pointed out that the question regarding the evaluation of the manufacturers was answered by almost all 45 companies surveyed, 18 of which are domiciled outside Germany. Against this background, it should rather be emphasised that approx. 16 companies domiciled in Western Europe were able to evaluate CZ Loko (at least “less suitable”) despite the fact that the company is predominantly active in Eastern Europe and does not offer a single shunter certified for operation in Germany and France – the most important markets for shunters in the EEA.

(4) Differences in the ranking of the companies

241 The results of the bidder analysis seem plausible since the range of shunters on offer is highly diverse. Depending on the area of specialisation, the products offered by individual companies are more alike, which is why the competitive pressure exerted on each other is higher than compared to other companies.

242 The core areas of the individual market participants were already outlined under B.II.2.a.bb above. This shows that especially Alstom and Stadler are Vossloh’s closest competitors since they offer high-performance locomotives that can be used for mainline services. Both

companies are large railway technology manufacturers with great technical knowhow. Somewhat smaller vehicles of the same type are offered by CZ Loko but so far have been certified only for use in Eastern Europe and Italy. In addition, CZ Loko's key business areas also include modernisation. CZ Loko already is one of Vossloh's distant competitors (see also para. 199). At present, Gmeinder produces only vehicles without certification and the company's production capacities are very limited. Therefore, the company mainly competes with Vossloh in terms of providing shunters to industrial customers. The other providers are small manufacturers of small locomotives that cannot be certified; they exert only little competitive pressure on Vossloh.

b. Buyers' assessment of the proposed merger

243 In the context of its market investigations, the Bundeskartellamt asked the buyers (industrial customers and railway companies) to assess the proposed merger. Whether buyers evaluate a proposed merger as negative or positive does not have a prejudicial effect. It is, however, possible that more detailed explanations regarding the evaluation may play a role in the context of assessing the merger. In the Bundeskartellamt's view, there are no indications suggesting that the buyers answered this question strategically.

244 In particular, the Bundeskartellamt asked the buyers which changes they expected to occur in the shunter market after Vossloh's acquisition by CRRC. The Bundeskartellamt also asked the buyers about the strategy they expect CRRC to adopt in the individual European markets for rolling stock after the merger.

245 With regard to the changes expected due to the merger, the responses provided by the buyers were varied. Some buyers were not able to provide a statement regarding the changes to be expected. Other buyers expect the merger to boost innovation with regard to the development of shunters equipped with sustainable technology (dual-mode and hybrid locomotives). Some buyers also state that the merger will (financially) stabilise Vossloh as a provider. In addition, some buyers expect prices for locomotives and maintenance services to drop.

246 Other buyers raised their concern, however, that the merger would eliminate a competitor. In their view, this would lead to reduced competition in the shunter market and in the medium to long term result in higher prices for locomotives and also spare parts. In individual cases, the fear of poorer service was expressed.

247 When asked about CRRC's strategy following the merger, several buyers stated that CRRC would use the acquisition of Vossloh to enter the European rolling stock market based on

references in the shunter sector and the acquisition of certification knowhow in order to be able to offer its entire product range there.

c. Barriers to entry

248 Manufacturing shunters involves considerable barriers to market entry.

249 In addition to the availability of corresponding production facilities, manufacturing shunters, especially powerful shunters also suitable for mainline service such as those produced by Vossloh, requires extensive technical knowhow. Developing a shunter generally requires the knowledge of numerous technical standards and the availability of qualified engineers. Particular difficulties result from the certification requirement since the certification procedure for rolling stock requires compliance with a number of provisions already during the construction phase. When planning to enter the market, a company therefore has to cover the high development costs in advance; such costs are possibly further increased due to the costs for certification. In addition, with regard to successfully entering the shunter market, references from previous projects play a large role in order to be able to participate in tender procedures for major contracts in the first place.

250 This is also pointed out by the parties to merger in their written statement of 17 February 2020 in which they emphasise the difficulties involved in the certification procedure and the importance of references for participating in public tender procedures for major contracts (see written statement of 17 February 2020, p. 22). They consider the barriers to market entry to be significant (written statement of 27 March 2020, pp. 52 f.). The parties to the merger also emphasise that entering the European market requires the company's presence in Europe involving its own production and maintenance facilities. However, such facilities can be established only if the company has received corresponding orders because otherwise the investment is economically not viable; in their view, this is a typical chicken-and-egg problem (loc. cit., p. 53). The parties to the merger also add that the importance of the barriers to market entry varies depending on whether the manufacturer is already established and has the necessary knowhow, references from neighbouring sectors and the necessary production facilities, or whether the manufacturer is a newcomer (see written statement of 27 March 2020, p. 54). In connection with the supposedly high degree of supply-side substitutability, the parties to the merger refer to the market entries of Alstom, Stadler, Toshiba and CAF (see written statement of 27 March 2020, p. 27; in this regard also see B.II.1.a.bb(2) above).

251 The statements made by the parties to the merger do not contradict the findings of the Bundeskartellamt. In detail:

252 Shunters that are exclusively used on private industrial premises do not have to be certified. In particular, they do not need to be equipped with sophisticated train control technology. An operating permit issued by the competent regional authority in accordance with the Ordinance on the Construction and Operation of Connecting Railways (**BOA**) is sufficient. If a company wishes to produce only smaller shunters that are not certified for mainline services, it is considerably easier to enter the market than with larger shunters suitable for mainline services.

253 Vehicles that are also to be used occasionally on secondary lines require special technical equipment and have to be certified by the Federal Railway Office (EBA) or the European Railway Agency (in the following: **ERA**). This especially applies to shunters that are also used for light mainline services. In addition, the power and therefore also the design of the vehicles differ significantly depending on the purpose of use.

254 A particular challenge in manufacturing rolling stock is the certification process. However, this barrier to market entry is relevant only for shunters that are (also) to be used on the public railway network.

255 Shunters with and without mainline certification differ considerably in terms of their complexity. This is already reflected in the development costs for a new shunter, which are considerably higher if a vehicle is supposed to be suited for mainline services. The costs for the certification process, which has to be undergone for each individual country in which the vehicle is to be able to operate on the public railway network, are to be added to the higher development costs.

256 The parties to the merger are right in stating that there are individual railway companies which can overcome the barriers to market entry more easily than companies that are entirely new to the market. If a company already produces other locomotives, it has the production facilities, at least a substantial part of the knowhow necessary for having a shunter successfully certified for mainline services, and references. Nevertheless, such companies still have to bear the costs involved in developing and certifying a shunter in order to enter the market. These costs are also considerable for such companies and pay off only if they are directly connected to the award of a major contract – often awarded by a state-owned railway company. In this way, Toshiba and Stadler entered the market in the past years. These companies were able to secure major contracts and thus enter the market. The parties to the merger point out themselves that for these companies the question as to whether “the segment seems economically interesting to them” is decisive (written statement of 27 March 2020, p. 54). This primarily means that the costs involved in developing and certifying the vehicle can be recovered through the order.

257 The costs involved in developing a new shunter are high. In this regard, the differences in how shunters are equipped are also reflected in the development costs. In the context of surveying the competitors, the Bundeskartellamt asked the rolling stock manufacturers to estimate the amount of development costs involved in various versions of a shunter. In this regard, the companies were asked about the minimum costs and the maximum costs for developing a three and a four-axle shunter, including the costs for having such a vehicle certified (homologation), and the time required for this.

258 This resulted in very considerable costs for both size classes. On average, the companies surveyed estimate that the minimum costs for developing a new three-axle locomotive amount to EUR 9,857,143, the median value is EUR 4,000,000. The average maximum value is EUR 14,571,429, the median value is EUR 8,000,000. The average estimated time required for the certification process is 28.7 months, the median value is 24 months.

259 In this regard, it is striking that especially large companies provided significantly higher figures than smaller market participants both with regard to the costs and the time required. The reasons that can be considered in this regard are manifold. It seems logical that this is connected to the offered equipment the locomotives come with– especially in terms of compliance with the TSI requirements and the national provisions of one or several countries with regard to design in order to make it possible for the vehicle to be certified by the railway authorities at a later time. It is also conceivable that the higher development costs are connected to the greater extent of in-house production pursued by larger companies whereas smaller manufacturers more often rely on purchasing ready-made sub-systems from other providers. It is, however, not necessary to conclusively answer this question since the development costs are in any case considerable.

260 The situation with regard to larger four-axle locomotives is similar but on a higher level. On average, the companies estimated that the minimum development costs amount to EUR 11,960,000, the median value is EUR 6,250,000. The average value regarding the maximum development costs amounted to EUR 17,960,000, the median value was EUR 11,000,000. The average estimated time required was 32.1 months, the median value was – like with regard to three-axle locomotives – 24 months.

261 If shunters are supposed to be suitable for use on the public railway network, the time and costs involved in the vehicle certification process (homologation) are to be added to the development costs outlined above.

262 In the context of the certification process, compliance with the applicable provisions and the approved technical rules has to be demonstrated by providing technical descriptions, inspection reports and expert opinions. In particular, compliance with the Technical

Specifications for Interoperability (TSI) and the Notified National Technical Rules (NNTR) has to be demonstrated. The TSI constitute a European set of rules describing the requirements regarding the design and operation of rolling stock in Europe. Since 1996, the TSI have been developed in various European directives and regulations; the currently applicable legal basis is Directive (EU) 2016/797. Some parts of the TSI are supplemented by national provisions, for instance, in order to ensure compatibility with the existing technical infrastructure of a country's railway network. This particularly concerns the different train control systems still used in Europe today and the differing vehicle recognition systems (see p. 561 of the files). In Germany, the national requirements notified to the EU COM are very extensive. The manufacturer has to prove compliance with the TSI and the NNTR to the Notified Body (**NoBo**) and the Designated Body (**DeBo**) based on corresponding design documents but also test runs and simulations. The competent national authority, in Germany the EBA, reviews the documents provided including the certificates issued by the NoBo and the DeBo (and other bodies, if applicable) and certifies the vehicle, as the case may be.

263 The market participants and the parties to the merger unanimously describe the certification process as very complex. In this context it was also pointed out that merely knowing the large number of relevant provisions provided for in various sets of rules which have to be observed when building a locomotive was not enough. Some of the rules had been developed over many years and the importance of a provision could be understood properly only if the historical context and the purpose of the rule was known. Against this background, it is the competitors' understanding that even engineers at competent manufacturers domiciled abroad had little chance of understanding all approval requirements without problems.

264 It is true that, in general, consulting engineers and service providers with experience in certification processes are available and can externally provide knowledge regarding the certification process. Large buyers such as DB also have extensive knowledge regarding the certification process. But the availability of external expertise cannot replace internal knowledge of the relevant provisions because the design is often linked to the certification processes and the subsequent correction of design deficits that become apparent only during the certification process can cause great expenses. Against this background, the availability of external service providers can only supplement a manufacturer's specific knowledge of the certification process but it cannot replace it.

265 The relevant knowhow is apparently so complex that even a large company such as CRRC is not able to simply establish it on its own. The technical provisions applicable in Germany and China differ considerably (see p. 558 of the file). The way in which such a certification

process is conducted in Germany and in China also differs substantially. CRRC assumes that the company would have to invest a considerable amount of time and money in order to have a shunter successfully certified for operation in Germany (see p. 565 of the file).

266 The results of the corresponding question in the market survey have already been discussed in detail in the context of the geographic market definition (see B.II.1.b). This resulted in the rule of thumb that the costs for the initial certification of a shunter in the geographically relevant market are roughly one fourth of the development costs; the costs for certification in another country are roughly one eighth of the costs. Furthermore, there is the significant amount of time required; with regard to the initial certification this was stated to be one and a half to two years and with regard to any additional certifications it amounted to one and a half years.

267 Another barrier to market entry is the fact that especially in larger tender procedures documentation of successfully concluded projects has to be provided. Providing these references is a requirement for participation in a large number of tender procedures. Whether and what kind of references are required is decided by the buyers. In this respect, references primarily serve to minimise the buyers’ risk associated with the contract by having a manufacturer demonstrate its ability to overcome the technical market barriers prior to submitting a bid. For this purpose, past exemplary projects which usually also include successful certification are required. In this way, the buyers try to ensure that long delays in executing the order are avoided.

268 In their written statement of 17 February 2020, the parties involved listed the references required in a range of recent tender procedures. By way of example, the following proof had to be provided in these individual tender procedures:

- The successful delivery of at least one electric multiple unit (EMU) including certification for the geographically relevant market;
- At least five diesel locomotives certified in the EU;
- At least one new mainline vehicle (i.e. no modernisation) in Germany, Austria or the Netherlands certified in the past five years;
- One reference each regarding the manufacture, certification, obtained access to the network and maintenance of electric mainline vehicles in the geographically relevant market;
- At least one new mainline vehicle (i.e. no modernisation) in the EU certified in the past seven years and a reference list regarding the manufacture of certified mainline vehicles in this period;
- At least two different vehicles certified in the geographically relevant market.

269 If a company is not able to meet these requirements, it is already excluded from the pre-qualification phase of a tender procedure (a kind of pre-procedure in which especially the capacity of potential suppliers is to be ensured). This barrier has posed great difficulties also for CRRC over the past years (see p. 2371 of the file).

270 Without references the market can be entered only if a company secures one of the few contracts with regard to which no references have to be provided. In practice, the common requirement to provide references constitutes a considerable barrier. Against this background, participating in tender procedures for certified locomotives is possible only with a preparation time of several years by first producing vehicles in the context of a smaller order and successfully concluding the certification process for this vehicle. This requirement to provide references results in delays of at least three years.

271 Both CRRC and its competitors consider Vossloh's knowledge regarding the certification process to be a very central aspect with regard to facilitating CRRC's entry into the European market. The buyer survey shows the same result. The buyers are of the opinion that the lack of experience with certification processes is CRRC's central shortcoming.

272 It is likely that the harmonisation of provisions in the context of establishing the ERA will reduce the complexity of certification processes but it will still take some time before these changes actually affect the market. And even this will lower the entry barrier established by the approval process only to a limited extent.

d. Development of market volume

273 In the context of its market investigations, the Bundeskartellamt reached the conclusion that the market volume is expected to increase during the forecast period. This is due to the following factors on the demand and supply side: First, the current average age especially of the locomotive fleets of state-owned railway companies is very high. Second, innovations introduced by suppliers result in the fact that buyers, especially state-owned railway companies, are more inclined to replace shunters with new ones before they reach their maximum age of use. Third, in this context the procurement behaviour of state-owned railway companies recently observed suggests an increase in the market volume. In addition, the specifically planned procurement figures of the buyers surveyed indicate that the market volume is expected to increase.

274 The parties to the merger reject this assessment. They are of the opinion that the market volume is unlikely to increase (written statement of 27 March 2020, p. 5 and p. 55). For this purpose, they refer in particular to SCI Verkehr's study already mentioned, which expects the market volume to decrease. They are of the opinion that the recent tenders issued by

state-owned railway companies are not a manifestation of increased demand (loc. cit., p. 56). In their view, the Bundeskartellamt should not expect the market to grow based on mere speculation; instead, the agency is, in their view, obliged to prove its assumption by conducting investigations (loc. cit., p. 56).

275 Even in light of the objections raised by the parties to the merger, the Bundeskartellamt assumes that the market volume will increase in the next few years.

276 In the following, the framework conditions for the development of the market volume will first be outlined (on the age of the fleets see B.II.2.d.aa, on the current boost in innovation see B.II.2.d.bb). The arguments brought forward by the parties to the merger will be addressed in the context of the description of the procurement behaviour of state-owned railway companies (see B.II.2.d.cc) and the procurement projects identified in the course of the investigations (see B.II.2.d.dd).

aa. High age of shunter fleets owned by buyers

277 According to the Bundeskartellamt's investigations, the shunter fleets are very old. This is indicated in SCI Verkehr GmbH's market study presented by the notifying parties; this is also specifically shown by the authority's own market investigations. According to the SCI study, diesel locomotives in Europe (also including mainline locomotives, however) are, on average, more than 35 years old. The buyer survey conducted by the Bundeskartellamt resulted in an average age of 28 years, the volume-weighted average age is almost 33 years. With regard to state-owned railway companies in particular, the average age has, according to the investigations carried out by the Bundeskartellamt, reached approximately 40 years.

bb. Innovations

278 At present, it appears that there will be a shift in technology with regard to shunters. New energy-saving drive technologies are developed, which, due to savings in terms of operating expenses, make new procurements more favourable than (repeated) modernisations.

279 In this regard, the market participants are particularly pursuing two paths of development: First, the development of diesel-hybrid vehicles with regard to which a diesel-electric locomotive is additionally equipped with powerful storage batteries in order to be able to recuperate energy while slowing down. Especially the use in shunting yards involves starting and stopping the vehicle numerous times. In this way, comparatively large amounts of energy can be regained from braking frequently so that it seems possible to save a

considerable amount of fuel. Second, an increasing number of dual-mode locomotives is developed; basically, such locomotives are diesel-electric locomotives which are equipped with a current collector in order to be operated electrically with overhead lines and also with a powerful auxiliary diesel engine in order to be used on non-electrified secondary lines and for shunting. Eight of the companies surveyed have stated that they are currently developing a diesel-hybrid locomotive, nine companies negated this. Six companies are actively working on developing a dual-mode locomotive, 12 are not.

280 At present, diesel locomotives with diesel-hybrid drive are offered by the companies Alstom (Prima H3), Gmeinder (DE 60 C) and CZ Loko (HybridShunter 400). These locomotives have a capacity of around 700 kW, the capacity of CZ Loko’s HybridShunter 400 is about half of that. Stronger locomotives with hybrid drive are currently being developed by the companies Gmeinder (DE 75 BB) and Stadler (NG Shunter). CRRC also offers hybrid locomotives in China, but apparently they are not equipped with diesel aggregates but only come with electric motors. A hybrid electric shunter is currently also being developed by the Spanish manufacturer CAF for the metro operator RATP in Paris.

281 The dual-mode locomotive segment is currently supplied by Alstom (Prima H4) and prospectively by Toshiba. In the context of an order placed by DB, Toshiba is currently developing a dual-mode hybrid locomotive which in addition to overhead line operation can also be used in self-sufficient mode; for this purpose, the locomotive has two powerful diesel aggregates and additional storage batteries. According to information publicly available, the certification process has not yet commenced. Based on information publicly available, Stadler also intends to develop a dual-mode version of its NG Shunter.

282 The costs associated with these innovations are significant. According to the companies surveyed, such costs are expected to be as high as the costs for the development of a new shunter.

283 On average, the companies surveyed expect the costs for developing a hybrid drive to amount to EUR 16,125,000, the median value is merely EUR 4,000,000. The average time the companies estimate this requires is 35 months, the median value is practically identical and is 36 months. In this regard, there are very large differences in the amount of development costs expected; they typically increase with the size of the company.

284 On average, the companies surveyed expect the costs for a dual-mode locomotive to amount to EUR 13,219,231. Also in this regard, the median value was significantly lower and amounted to EUR 6,000,000; this, in turn, shows the wide range of numbers provided. The time required was estimated at 36 months; the mean and median value are thus identical.

285 The extent to which the new drive technologies will succeed in the market is difficult to predict at present. The information provided by the competitors surveyed regarding the percentage of hybrid locomotives sold varies widely. This is partly due to the fact that individual companies – such as Toshiba, for example – offer only hybrid locomotives and thus state that the percentage of sold hybrids is 100%. On average, however, the companies expect to see an increase in the importance of hybrid technology in the market. They expect the share to amount to 21% from 2020 to 2022, to 28% from 2023 to 2025, and to 42% from 2026 to 2028. The buyers were also asked to provide an estimate regarding the share of the various drive types with regard to the periods mentioned above; the answers varied greatly, however.

286 New drive technologies create additional demand particularly from state-owned railway companies operating large shunter fleets. While in recent years the market volume was primarily characterised by orders placed by industrial companies, some state-owned railway companies have recently also issued invitations to tender. These are usually major contracts which temporarily result in a considerable increase in the market volume. These new procurements may also have been triggered by stricter environmental protection requirements as well as the availability of lower-emission diesel motors and new drive technologies. Based on an estimate provided by CRRC, the parties to the merger expect the market to grow at an annual rate of only [<5]% (see written statement of 17 February 2020, p. 44). This would not even amount to per year. In view of the procurement plans of which the buyers already informed the Bundeskartellamt in the context of the survey, this does not seem realistic.

287 The French company Akiem (an SNCF subsidiary), SBB, DB and the Finnish VR Group have placed major orders. The contract with Akiem was awarded to Vossloh, the other contracts were awarded to competitors. Several of these contracts involve new drive technologies. DB ordered a large number of hybrid locomotives from Toshiba (100 units). With regard to dual-mode locomotives, SBB has already placed the order regarding the manufacture of 47 vehicles and DB is currently conducting a tender procedure for 200 dual-mode locomotives (also referred to as "Zweikraftlok"). Akiem and VR Group, in contrast, have ordered low-emission but conventional diesel locomotives.

288 The 44 Vossloh locomotives ordered by Akiem and the 47 Prima H4 locomotives SBB ordered from Alstom are now being delivered. However, in the considered period until 2018, only few units of both the DE18 and the H4 locomotives were handed over to Akiem and SBB respectively. The 100 Toshiba locomotives ordered by DB are to be delivered between 2022 and 2025 as are the 60 Stadler locomotives ordered by VR Group. In the next few

years, these orders alone will result in a market volume of around 50 additional locomotives per year (based on a five-year period) without taking into account any smaller orders.

289 In addition, DB Cargo AG is currently conducting a tender procedure for at least 200 “dual-mode locomotives for shunting and mainline services”. On the one hand, these locomotives must be equipped with more powerful electric motors to be used under overhead lines and, on the other hand, also have a smaller diesel motor in order to be able to self-sufficiently use secondary lines and industrial tracks. The electric motors require an output of 2,000 kW; this is only slightly above the output of Vossloh’s DE 18 diesel engines of 1,800 kW. DB’s tender procedure permits both off-centre and centre cabs. In addition, the vehicles must have shunting steps at the front of the locomotives and sufficient ground clearance to roll over retarders. DB Cargo AG wants remote radio control for shunting as optional additional equipment (humps are also optional) and automatic shunting couplings. The ongoing tender procedure also covers locomotives that can be used for shunting and thus affects the relevant market. The result of the tender procedure has not yet been announced.

290 The large-volume tender procedures especially issued by DB and SBB suggest that for railway operators the innovations in the area of drive technology constitute an additional reason to replace their vehicles, which were often built in the 70s and 80s, with new ones.

291 The developments mentioned above suggest that the state-owned railway companies are currently already renewing their existing fleets (partly by replacing old vehicles with low-emission shunters). There are indications that this is to be expected to continue during the forecast period. For example, one of the railway companies surveyed stated that it was highly likely to procure new shunters in the next five years. The reason for this was environmental protection and (also) noise restrictions. The shunters of the railway company surveyed are (only) 15 to 20 years old. The policy framework increases the pressure on railway operators to act, especially since such companies often present themselves as offering environmentally friendly means of transport, and therefore have to keep an eye on how the exhaust emissions of their vehicles develop.

cc. Procurement behaviour of state-owned railway companies

292 According to the Bundeskartellamt’s investigations, the procurement behaviour of the state-owned railway companies differs from the procurement behaviour of industrial customers. With regard to industrial customers it can be seen that vehicles are procured on a continuous basis, i.e. the planned annual procurement volumes do not seem to vary considerably. One of the industrial customers surveyed stated that the number of shunters

to be procured annually was determined for a period of several years, making it necessary to approve only the final budget.

293 State-owned companies, however, do not procure their shunters on a continuous basis over several years. In addition, they are less likely to have a long-term procurement plan; instead, the considerations and projects regarding new procurements seem to be irregular. The decision to actually procure new vehicles is often made swiftly and depends on the policy framework, possible environmental requirements and the budget distribution and decision.

294 These circumstances – in combination with the technological developments and the high average age of existing shunters mentioned above – suggest that the railway companies which were not surveyed are very likely to procure new locomotives during the forecast period and that the railway companies surveyed are also very likely to procure additional locomotives during the forecast period (see below).

dd. Specific procurement plans of the buyers surveyed

295 The Bundeskartellamt determined the number of shunters the buyers surveyed will procure in the coming years up until and including 2028. This resulted in a planned procurement volume of [140-150] shunters for the years 2020-2022, a planned procurement volume of [210-220] shunters for the years 2023-2025 and a planned procurement volume of [150-160] shunters for the years 2026-2028, and consequently an average of [40-50] shunters per year during the first period, an average of [70-80] shunters per year during the second period and an average of [50-60] shunters per year during the third period.

296 The parties to the merger point out that according to these investigations the previous market volume of 75 locomotives is reached only during one period – from 2023 to 2025 (see written statement of 27 March 2020, p. 56). In their view, the Bundeskartellamt cannot assume on the basis of speculations that additional large-volume procurements will be made, which the authority is not able to prove based on its investigations.

297 The figures mentioned above result from the responses given by the 45 buyers surveyed; in this regard, only two thirds of the buyers mentioned or were able to mention specific figures. These buyers did not include important European railway companies; based on the overall shunter stock of the buyers surveyed (approx. 3,000), the market survey covers only approx. one third of the market (according to the market study "Diesel Locomotives – Global Market Trends 2017" conducted by SCI Verkehrs GmbH, the existing diesel shunter stock in the EEA is almost 9,000, see p. 49). Two thirds of the market were not covered by the survey; these companies were thus not able to provide information on the planned procurement figures. However, the planned procurement volume of the buyers surveyed

alone almost reaches the average annual market volume of approximately 75 shunters of the past years (2014 to 2018), at least with regard to the second period.

298 To the extent the parties to the merger criticise that this cannot even prove that the market volume remains unchanged, this objection falls short in two respects:

299 Firstly, this consideration does not include most of the major orders from state-owned railway companies which have already been placed or at least tendered. The major contracts with state-owned companies which are already known – they have already been described in detail above (see B.II.2.d.bb above) – will almost reach the previous market volume of 75 shunters per year in the next years. The Bundeskartellamt is aware of the following major contracts (fixed orders only, excluding options):

- Akiem (awarded to Vossloh): 44 locomotives
- SBB (awarded to Alstom) 47 locomotives
- DB (awarded to Toshiba) 100 locomotives
- VR Group (awarded to Stadler) 60 locomotives
- DB (still open, ongoing tender procedure for dual-mode locomotives) 200 locomotives
- TOTAL: 451 locomotives

300 This is almost exactly the six-fold amount of the previous market volume of 75 locomotives per year (this would be 450 locomotives). Even if it is taken into account that the currently tendered major contract with DB regarding dual-mode locomotives will probably not be fully executed by the end of 2025, it is nevertheless shown that the major contracts with the state-owned railway companies alone will ensure that the previous market volume will more or less be reached in the next six years.

301 In addition to the demand from the state-owned companies, there are smaller orders placed by industrial customers and private railway companies. In the past five years from 2014 to 2018, this demand from private companies largely accounted for the market volume. The few units from the Gravita order placed with Voith by DB and the H4 order placed with Alstom by SBB are exceptions. CZ Loko also delivered some shunters to the Czech state-owned railway company ČD during this period; according to sources publicly available, this concerned 12 small shunters. In this period, the state-owned companies did not receive any other deliveries worthy of mention. During this period, orders were merely placed; these orders were not, however, included in the market volume by the Bundeskartellamt but will be important only in the context of the forecast, as already mentioned under B.II.2.a.aa above). The sales volumes of the past five years amounting to 75 locomotives per year therefore largely reflect the demand from private customers.

302 There are no indications suggesting that the demand from private customers will substantially decline over the next years. The information referenced by the parties to the merger regarding a statement to the contrary made by the market research company SCI Verkehr, which assumed a decline in demand due to a further decrease in wagonload freight, has become obsolete due to policy changes (see para. 89 above). Contrary to the expectations mentioned there, wagonload freight will be expanded, at least in Germany; this is reflected in DB's major tender procedure for a dual-mode locomotive.

303 When forecasting the market's development, it is to be taken into account, however, that the currently ongoing major tender procedures of state-owned companies partly serve to replace old shunters, which will possibly be resold as used locomotives. This is pointed out by the parties to the merger in their written statement of 27 March 2020 (p. 31 and p. 58). It is likely that only some of these vehicles are available to the used vehicle market since these shunters are very old and have been used intensively and therefore need to be modernised extensively. Nevertheless, these locomotives may be an alternative for some of the private customers, at least for purposes with regard to which reliability and operating costs do not play a decisive role. This is then also reflected in the market volume since some of the expected sales of new locomotives are replaced by used vehicles.

304 Against this background, it is altogether to be expected that in the next five years approximately 75 locomotives will be sold per year due to the major contracts with state-owned railway companies already known today. In addition, there is the demand from private customers, which in the past few years also amounted to roughly 75 locomotives per year; some of these vehicles will, however, be replaced by used locomotives, which are offered on the market for used vehicles due to the major contracts with state-owned railway companies. The Bundeskartellamt has not collected detailed data on the share of vehicles that can be substituted since the parties to the merger commented on this only within the context of the discussion paper and thus after the investigations had been conducted. With regard to the buying habits reflected in the data concerning tender procedures, which for many companies include procuring new locomotives on a regular basis, it seems conceivable that roughly one third of the previous market volume will be substituted. This amounts to 25 locomotives per year; over a period of five years, this totals 125 locomotives. This is likely to already include a considerable safety margin in favour of the parties.

305 Overall, the basic demand from those two groups of buyers is expected to amount to roughly 125 locomotives per year – 75 due to major contracts, 50 due to the reduced demand from private customers. This already constitutes a substantial increase compared to the sales volumes of the previous five years.

306 The demand volumes determined, which based on the result of the buyer survey total a planned procurement volume of [140-150] vehicles for the period 2020-2022, [210-220] vehicles for the years 2023-2025 and [150-160] shunters for the years 2026-2028, are not even included in this.

307 Despite the objections raised by the parties to the merger, the Bundeskartellamt is of the opinion that this information does not reflect the entire demand that is to be expected.

308 The reason for this is that, for one thing, the investigations of the companies surveyed cover only one third of all shunters currently existing in the EEA and Switzerland. In contrast to the survey of shunter manufacturers, the survey of the buyers was not a full survey of all buyers. It therefore can be concluded that other companies are also in demand of shunters, which has not been determined, however. It is true that due to the fact that the random sample lacks representativeness the demand cannot be extrapolated on a straight-line basis, but with regard to a major part of the companies that were not surveyed it can at least be expected that the demand is not fully included.

309 For another thing, the investigations carried out by the Bundeskartellamt have shown that the procurement planning horizon of some of the companies in the market is very short – and in some cases covers only the next year. Naturally, such companies are therefore unable to provide information on their demand in that part of the forecast period that exceeds their planning horizon. By stating that the Bundeskartellamt could not expect additional major procurements based on assumptions and asking the authority to prove the findings based on its investigations (see written statement of 27 March 2020, p. 56), the parties to the merger fail to recognise that it is impossible to solve this problem by carrying out investigations. This issue concerns a forecast of future behaviour the result of which, due to the nature of the matter, cannot be determined in advance by carrying out investigations. Only the facts available can constitute formal evidence. The Bundeskartellamt has, however, collected as many facts as possible in this regard. The forecast regarding the further development has to be made on this basis, taking into account all circumstances. This is exactly what the Bundeskartellamt has done. Against this background and after having reviewed the facts once again, the Bundeskartellamt still is of the opinion that companies which have stated that their planned procurement volume for the next years was "0" may still need additional vehicles; this was confirmed by a railway company which, according to the information provided by itself, has a planning horizon of five to seven years.

310 The accuracy of the Bundeskartellamt's forecast that other state-owned railway companies are expected to issue invitations to tender relating to major contracts was confirmed by the

parties to the merger themselves in their written statement of 17 February 2020. In this document, they stated that the European railway companies are expected to issue invitations to tender and reported on the project of the Austrian state-owned company ÖBB, which had announced to the parties that it intended to put a contract relating to up to 80 centre cab locomotives up for tender soon. This procurement project is not included in the Bundeskartellamt's buyer investigations. In this way, the parties to the merger even confirm the Bundeskartellamt's expectation that there will be other major contracts in the forecast period in addition to those already known.

311 Ultimately, this aspect is not even decisive: The demand from state-owned railway companies and private customers already shows that the market volume will be substantially higher in the next five years compared to the market volume between 2014 and 2018. Due to the results of the buyer investigations it might be expected that the market volume will be even higher than the expected minimum number of 125 locomotives per year. It is, however, not possible to precisely predict the extent of the further increase because due to the investigation approach applied it cannot be fully ruled out that the information provided by the buyers and the information on the major contracts mentioned above overlap to some extent so that in some cases some of the information might have been counted twice. The question as to whether additional locomotives that have not been determined have to be added to the [140-150] locomotives determined for 2020-2022, the [210-220] locomotives determined for 2023-2025 and the [150-160] shunters determined for 2026-2028 cannot be quantified; this is, however, not even relevant since the further increase can be specified only as a tendency due to the problem of counting information twice.

312 Ultimately, there is no doubt that in the next five years the market volume will be substantially higher than the volume from 2014 to 2018.

e. Competitive pressure due to modernisation

313 The possibility to extend the service life of shunters through modernisation exerts competitive pressure on the market for the manufacture and distribution of new shunters. The reason for this is that companies already in possession of a shunter can decide to overhaul their existing vehicle instead of buying a new one. This alternative is, however, available only to companies that already possess their own vehicles and there are economic and technical limitations to modernisation. The effect of this competitive pressure is also limited; for instance, over the past few years, it has not been possible to prevent

considerable price increases due to new emission standards (see SCI Verkehr, The Market for Diesel Locomotives in Europe, p. 50 – p. 2638 of the file).

314 Several of the buyers surveyed state that they intend to have a certain number of locomotives modernised between 2020 and 2028. These include both railway companies and industrial businesses.

315 When comparing the number of shunters that are intended to be newly procured and the number of shunters that are to be modernised in the overall period from 2020 to 2028, it becomes clear that the number of locomotives that are to be modernised totals approx. 60% of the number of locomotives that are to be procured. In any case, modernising existing shunters as an alternative to procuring new locomotives apparently plays a relevant role with regard to the buyers surveyed.

316 As already mentioned elsewhere, full modernisations also involving a change in the locomotive’s ownership are, in any case, to be included in the market, according to the Bundeskartellamt’s view.

317 In addition, modernisations that do not lead to a general overhaul of the vehicle and are therefore not part of the market can in any case also exert competitive pressure on the shunter manufacturers. In the context of these modernisations (sometimes also referred to as “refurbishments”) merely individual components of the vehicle are exchanged. These modernisations are sometimes carried out by the buyers themselves, especially railway companies have their own workshops for this. One of the railway companies surveyed stated that it was currently running a project in the context of which it was considering whether it would still pay off to modernise the existing fleet or whether it should be replaced by new shunters.

318 There are, however, limits to these modernisations; especially in economic terms, such modernisations are likely to pay off if the shunter has a long service life after modernisation and only minor modifications are necessary. It is, however, more difficult to put new drive technologies into effect with regard to older vehicles. Against this background, new drive technologies which result in lower running costs or are necessary due to image reasons or due to regulatory provisions encourage new procurements.

319 The possibility to modernise a shunter merely postpones the procurement of a new shunter but does not replace it. Also, the parties to the merger do not deny that the service life of shunters cannot be prolonged indefinitely (see written statement of 27 March 2020, p. 60). They merely suspect that the substitute would be procured outside the forecast period. However, they fail to mention specific indications for this assumption. The procurement projects of state-owned railway companies and private buyers identified in the context of

forecasting the market volume (see B.II.2.d.dd for details) prove, however, that this general statement is incorrect. If it were correct, these procurement projects could not exist – at least not those that serve to substitute old shunters. By way of example, reference is made to DB's major order placed with Toshiba and the Finnish VR Group's major order placed with Stadler, which are precisely intended to replace old vehicles.

320 The reference made by the parties to the merger to DB's HELMS project (hybrid electro-mechanical shunter) in the context of which DB intends to equip up to 300 shunters of its 294 shunter series with an electro-mechanical diesel-hybrid drive system (see written statement of 27 March 2020, p. 60) does not change this. Projects such as this simply show that the service life of shunters can be prolonged beyond the vehicles' intended service life if the owner is willing to invest a considerable amount of money. Assuming there are 9,000 existing shunters, 300 shunters would have to be renewed each year based on a service life of 30 years. The market volume regarding new locomotives did in fact amount to merely 75 new vehicles in the past years. Consequently, 225 vehicles would have to be modernised each year or no longer needed due to lack of demand. This does not contradict the results reached by the Bundeskartellamt: Modernisations are still carried out in addition to new procurements. Modernisation projects such as the HELMS project make it possible to increase the vehicles' service life beyond their intended service life. In view of the sheer difference between regular replacement and the actual market volume, a large number of modernisations are necessary in order to keep a shunter fleet operational. This applies even if it is assumed – based on SCI Verkehr's outdated forecast – that the overall number of existing shunters will decrease significantly.

321 The statement made by the parties to the merger that the decision regarding the modernisation of a shunter or the procurement of a replacement is made by professional buyers of rolling stock based on the costs incurred over the service life of a locomotive (see written statement of 27 March 2020, p. 60) is correct. However, this does not change the fact that maintenance costs increase with increasing age, some parts can no longer be obtained and in some cases regulatory requirements, such as emission standards, can no longer be satisfied by the existing vehicles. As a result, the older a locomotive and the greater the desired technological progress, the higher the need for replacement and the more expensive modernisation becomes. Consequently, modernising an old locomotive can be unprofitable.

322 As a result, the competitive pressure on the market for the manufacture of shunters triggered by the possibility to modernise vehicles is assessed as noticeable by the Bundeskartellamt. However, there are limits to extending service life and the competitive pressure due to modernisation decreases the greater the desired technological progress.

f. Buyer power

323 The power of shunter buyers is not always sufficient to compensate for the market power exercised by a dominant manufacturer. The reason for this is that although individual buyers may find themselves in an advantageous position with regard to certain tender procedures due to the high volumes of these orders, this does not automatically benefit the entire market. Manufacturers do not have to offer all buyers the same price but are free to set different prices for large and small buyers, for example. Especially small buyers are therefore not able to profit from the buyer power of large railway companies.

324 The parties to the merger, in contrast, are of the opinion that the providers of shunters are subject to a particularly strong form of demand competition while the target company has almost no supply power (see written statement of 27 March 2020, p. 65). The parties to the merger refer to the Bundeskartellamt's "Guidance on Substantive Merger Control" (in the following: Guidance on Merger Control, available at https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Leitlinien/Guidance%20-%20Substantive%20Merger%20Control.pdf?__blob=publicationFile&v=6)%20as%20a%20benchmark%20for%20the%20existence%20of%20buyer%20power). In their view, orders placed by state-owned railway companies are indispensable for manufacturers since they are necessary for developments to pay off – irrespective of whether such developments are implemented to ensure competitiveness or gain access to a market (loc. cit., p. 66). The parties are of the opinion that state-owned railway companies dictate terms by setting specifications for tender procedures and tender requirements that are largely non-negotiable (loc. cit.; pp. 68 f.). In their view, such companies are always in a position to make it possible for a new competitor to enter the market in the EEA, which is exemplified by DB's contract for 100 shunters directly awarded to Toshiba. VR Group's contract for 60 shunters in Finland awarded to Stadler in their opinion also shows that large contracts may result in market entries.

325 In the parties' view, also smaller industrial customers have superior buyer power since they are able to strategically control their procurement behaviour and wait for an opportune moment to place an order (loc. cit., p. 71). They hold that the irregular award of major contracts results in the fact that manufacturers are repeatedly dependent on acquiring smaller contracts in order to ensure basic capacity utilisation to cover their fixed costs. In their written statement of 17 February 2020, the parties to the merger point out that the market consists of a number of very small orders so that if comparatively low-volume contracts are awarded, the buyer power is already correspondingly high (see written statement of 17 February 2020, p. 32).

326 For legal reasons alone this view of the parties cannot be accepted. It is true that the parties to the merger correctly base their initial considerations in their written statement on the requirements specified by the Bundeskartellamt on p. 33 of its Guidance on Merger Control. However, they fail to mention the additional requirement set out in the previous section that countervailing market power is not able to have a sufficiently limiting effect “if only certain customers possess countervailing buyer power, or if countervailing buyer power is limited to certain parameters” (Guidance on Merger Control, p. 30). However, this is precisely the case here – even according to the parties themselves:

327 With their large-volume tender procedures, the state-owned railway companies raise considerable interest among manufacturers. Manufacturers depend on such orders to ensure a basic workload for their production facilities. However, state-owned railway companies no longer have a strong position if they need vehicles with special equipment. This is shown by the example of the AZ locomotive which DB procured for the suburban train systems in Hamburg and Berlin: No company other than CRRC submitted a bid in this tender procedure. Even the state-owned railway companies have a certain degree of market power only with regard to a fraction of their demand.

328 This applies all the more to private buyers: They cannot buy the large volumes procured by state-owned railway companies. Consequently, they do not automatically benefit from the favourable conditions that state-owned railway companies are able to realise in the market with regard to individual major contracts. Manufacturers can differentiate prices since the individual customers are known. The situation is different if stock market prices or otherwise practically non-negotiable prices apply, for example in supermarkets or at petrol stations. This is not the case here, however. Prices can be adjusted depending on the individual customers. The parties to the merger point out themselves that many small buyers are active in the market. Their buyer power is not in any way comparable to that of state-owned companies tendering a major contract.

329 Pointing out that the orders placed by smaller companies are also important to fully use the manufacturers’ capacities does not change this. Even if individual buyers time their demand and are able to wait until a manufacturer is inflexible in terms of its offer and reliant on the conclusion of a contract, this does not apply to all buyers. Fluctuations in capacity use caused by major contracts occur in cycles of several years since major orders are often executed over several years. It is unrealistic to assume that all buyers could without problems bring investment projects ranging between one and four million euros forward or postpone them by several years.

330 Ultimately, this argument only shows that ensuring the plants' basic capacity utilisation is important with regard to the products here to generate profit contributions. The buyers' good negotiation position is then due to the overall demand for shunters having been low in the past few years. During such a weak market phase, manufacturers work hard to also secure orders from small buyers. This is exactly what the parties to the merger describe when they point out that industrial customers predominantly place their orders at a time when providers compete to undercut prices in order to use free capacities (see written statement of 27 March 2020, p. 71). Since major orders are not placed on a regular basis, there are, in their view, always structural phases in which providers endeavour to use their production capacity otherwise.

331 This situation is, however, not due to the negotiation power of (smaller) buyers but the particularities of the providers. Against the background of the deliberations regarding the development of the market volume outlined above (for more details see B.II.2.d), it is to be expected that capacities will not continue to be underused to the same extent. The parties to the merger reject this forecast (see written statement of 27 March 2020, p. 71), but this contradicts their own statements made on the same page where they talk about the moment at which "a buyer market is shown to exist" and describe the possibilities of industrial buyers to postpone their demand and wait for times at which capacities are underused. Shortly thereafter they themselves point out that major orders are not placed on a regular basis so that production capacities have to be used otherwise. In this way, they themselves admit that the market is not always a buyer market but only in specific phases.

332 The fact that industrial customers periodically have the opportunity to receive competitive offers from manufacturers that were not successful in tender procedures for major contracts in any case does not suffice – contrary to the opinion apparently held by the parties to the merger in their written statement of 27 March 2020, p. 72 – to compensate for the market power of a dominant manufacturer. Buyer power cannot mean that buyers have to purchase from an unsuccessful manufacturer and neither can it depend on the time at which a buyer seeks to buy products. Several conditions would have to be fulfilled in order to affirm the existence of countervailing market power, including the fact that the buyers in question are of such economic significance that a possible loss cannot be compensated for in the short term by acquiring other buyers. However, in the relevant market this does not seem to be the case with regard to industrial customers, not even in the parties' view.

333 Ultimately, the parties' argument that large buyers such as DB have the power to specifically engage in market development and establish new providers also cannot substantiate the claim that any scope of action not sufficiently controlled by competition is systematically limited by buyer power. Large buyers cannot be told that due to the buyers' existing market

power they should switch to in-house production or establish completely new suppliers. The Toshiba example mentioned by the parties to the merger is therefore from the outset not suitable to plausibly explain the supposedly existing buyer power.

g. Forecast of market positions without the merger

aa. Particularities of the forecast

334 A forecast of the market positions of both Vossloh and CRRC must take into account several particularities.

335 For one thing, both Vossloh's and CRRC's market positions are currently undergoing changes. Vossloh's market position was very strong in past years but has come under pressure due to market entries and strategic decisions made by the company. CRRC, on the other hand, is only about to enter the market and has so far only begun to establish its market position. Although first orders have been placed, no sales have been achieved so far. It is to be expected that the market position will increase. In both cases the forecast of market positions cannot solely be based on the historical market positions (for more details on this see B.II.2.g.aa(1)).

336 For another thing, CRRC is a Chinese state-owned company. This raises the question of how the forecast of the market situation should take into account the circumstance that a state-owned company from a centrally planned economy is competing for business in an open market economy (for more details on this see B.II.2.g.aa(2)). This raises new questions to be answered by competition law: So far, we have not seen any centrally controlled economies planning to have their state-owned companies target markets in other countries, which is what the People's Republic of China has been doing for some years. During the Cold War the Eastern European states focused on their own territories, foreign trade contacts were an exception. Never before has a decision been required regarding a scenario where, as in the present case, the worldwide leading manufacturer in a specific sector which has not yet established any significant business in the relevant geographic market intends to acquire the local market leader, resulting in a significant combination of resources.

337 These circumstances will be examined in more detail in the following sections.

(1) Dynamic market phases

338 At present, the market for shunters is in motion.

339 Vossloh's market shares have decreased over the last few years. Apart from internal strategy decisions this is also due to the market entry of three larger rolling stock manufacturers.

340 At the same time the Acquirer, CRRC, is entering the market. Although the company has so far only received relatively small orders from DB AG and the Hungarian RCH in the market for shunters, it can be expected to be able to develop a sustainable market position.

341 Furthermore, the market volume is changing. After years of very low demand, some state-owned railway companies have again entered the market as buyers intending to replace their very old rolling stock with new shunters. Apart from the considerable age of the rolling stock it is an important fact that, also in the sector for locomotives, experiments are made with new traction technologies such as diesel hybrid or dual mode locomotives and that substantial savings in operating costs appear to be possible in this sector (for more details on this, see B.II.2.d). The market entries of Alstom, Stadler and Toshiba must also be considered against the background of the first major invitations to tender issued by state-owned railway companies in which these companies have been successful.

342 Instead of a more static approach which is typically used in forecasts where markets are not undergoing any major changes, it is essential in this case to take dynamic factors into account. Both Vossloh's and CRRC's market shares are in motion, albeit in opposite directions. A static assessment would lead to inadequate results. Ultimately, the parties to the merger share this view as, in their opinion, merger control proceedings should focus on the forecast of future market conditions and not on the assessment of historical competitive relationships (see written statement of 27 March 2020, p. 37).

343 In order to apply competition law in static markets, the typical approach would be to start by extrapolating the historical market position based on the assumption that the market shares will basically remain unchanged. This analysis based on historical data is the standard approach under competition law as it reflects the experience that historical market shares generally express the economic capabilities of a company. A company is in the position to use its economic capabilities in the future and it can typically be expected to do so. The continuous, parallel efforts made by all market participants to maintain the market position they achieved against their competitors result in a relative stability of market shares. In most of the Bundeskartellamt's cases where market shares were examined over longer periods of time these market shares have in fact largely remained stable.

344 In the present case, the assessment of the market positions that Vossloh and CRRC would be expected to hold without the merger, i.e. the basis for the assessment of the effects of the concentration, would lead to a significantly wrong conclusion if it were based on an

extrapolation of the companies' market positions in the past. In the case of Vossloh, the future market share would be overestimated. In the case of CRRC, on the other hand, its future market position would be underestimated if historical results were simply applied to the future.

345 The foreseeable changes in the respective market positions must therefore be taken into account in the forecast. It is the very nature of a forecast to anticipate foreseeable changes that are yet to come. However, these changes cannot be determined by mathematical calculations. Dynamic developments place tight constraints on the options for more exact quantification. It is an acknowledged fact that even simulation models, the use of which is sometimes called for within the framework of an effects-based approach, fail to take into account dynamic aspects (see Kerber/Schwalbe, in: Münchener Kommentar zum Europäischen Wettbewerbsrecht, introduction, para. 401). In a changing market the forecast must therefore be based on qualitative aspects and an overall analysis of all relevant influencing factors.

346 Taking into account qualitative changes will result in an increased forecast uncertainty. Ultimately, however, this increase in uncertainty is not caused by the consideration of qualitative factors in the forecast but by the fact that the market is subject to changes.

347 This poses particular challenges in the application of competition law. Forecasts used in merger control proceedings must always meet the standards of proof required in administrative decisions. This means that the competition authority generally bears the burden of proof for its decision to intervene (unless this burden is eased by a presumption such as provided for under Section 18 GWB). Nevertheless, the circumstance that a market is currently in a dynamic phase cannot mean per se that any concentration has to be accepted as unobjectionable. It is always necessary to examine the extent to which the structural change caused by the concentration is likely to have a negative effect on the dynamic market development within the forecast period. Accordingly, Section 36(1) no. 2 GWB stipulates that in the case of newly emerging markets, merger control must intervene regardless of the market volume.

348 The uncertainty of the forecast increases with the degree of change in the market. Greater uncertainty increases the range of market results that appear to be plausible (e.g. the expected future market shares of the companies involved), depending on the development of the market concerned. In order to produce a forecast, different scenarios of market development must be considered which take into account the different possible developments of the relevant influencing factors.

349 These scenarios will only come into conflict with the standards of proof required by competition law if, in the evaluation of evidence, reasonable doubts remain as to whether the preconditions for prohibition are shown to exist for all realistic market developments. Or, in other words: If, in the forecast, some of the realistic market developments lead to the fulfilment of the preconditions for prohibition while at least one development makes the proposed concentration appear uncritical, the project would have to be cleared by a decision based on the burden of proof unless the presumption rule applies. The following grounds for the authority's decision are thus mainly based on the consideration of different scenarios and the likelihood of their occurrence.

(2) State-owned companies from centrally planned economies

350 The special feature of the case to be assessed here is that a well-resourced state-owned company from a centrally planned economy intends to acquire the market leader in Europe.

351 The incumbent market participants are concerned about an uncontrolled expansion of CRRC's market position if the company should successfully enter the European markets for rolling stock. They pointed out substantial distortions of competition which made it impossible for them to fend off the competitive advances of the Chinese state-owned company. Several of the competitors surveyed concluded that CRRC might gain complete control of the market for shunters in the EEA and Switzerland.

352 In the Bundeskartellamt's view it will hardly be possible for CRRC to reach a dominant market position in the medium term solely based on internal growth. It cannot be denied, however, that CRRC is able to benefit from its close links with the Chinese state which are not available to privately run companies or even state-owned companies from market economies.

353 The parties' view is that the particularities of Chinese state-owned companies are not relevant for the assessment of the proposed concentration (see written statement of 27 March 2020, p. 96). They are opposed to the picture the Bundeskartellamt painted of CRRC, which in their view describes a non-transparent company active in all the railway technology sectors, a company which, by means of joint ventures, has easy access to the expertise and product portfolios of all major manufacturers of railway technology and, due to its links with the Chinese state as its indirect majority shareholder, unlimited financial resources (see written statement of 27 March 2020, p. 9).

354 Contrary to the opinion of the parties, the framework conditions for the operation of Chinese state-owned companies cannot be disregarded when examining the case under merger control rules. In the assessment of the market behaviour of Chinese state-owned

companies in the territory of the Federal Republic of Germany, i.e. the relevant territory in this case, these conditions make it necessary to take into account particularities that lead to substantial deviations from the assumptions that are typically used in assessments under competition law. The reason for this is that the scope of action and the limits applicable to private companies, on the one hand, and state-owned companies domiciled in centrally planned economies, on the other hand, differ substantially.

355 In contrast to private companies, state-owned companies from centrally planned economies generally not only focus on maximising profits but also on pursuing further objectives such as the fulfilment of plans. Alignment with the objectives of (five-year) plans can cause state-owned companies to orient their market behaviour not only towards economic (and thus economically rational) goals, but also towards political objectives set by the country's authorised policy makers. These objectives can include the country's prestige, employment policy, strategic economic or military development, personal influence and many other factors. Such factors cannot be covered by the objective of profit maximisation on which the economic models of the neoclassical approach, in particular, are based.

356 Against this background, it is incorrect to state that the statements on the particularities of activities by state-owned companies from centrally planned economies are "largely irrelevant" (as claimed in the written statement of 27 March 2020, p. 96). It is, in fact, essential to be aware of the framework conditions under which the Acquirer operates in order to be able to identify particularities that make it necessary to deviate from the typical assumptions about a company's conduct.

357 However, by far not all the problematic areas which, according to the market participants, distort competition are actually relevant under competition law (see e.g.: Position paper of the German Railway Industry Association (Verband der Bahnindustrie in Deutschland e.V. hereinafter referred to as VDB): "Vorn bleiben. Mind-the-Gap-Strategie für einen freien und fairen globalen Wettbewerb in der Bahnindustrie.“, available (in German only) at https://bahnindustrie.info/fileadmin/VDB-Positionspapiere/VDB-Diskussionspapier-Vorn-Bleiben.pdf). Several aspects concern other legal areas or can only be changed by political decisions. While it might be absolutely understandable that the areas indicated can be problematic and result in competitive disadvantages for the incumbent providers from the EEA and Switzerland, a competition authority's analysis can still take into account only those circumstances that provide a state-owned company with additional scope of action for its market conduct. Although they might have a negative effect on the level playing field in international competition, any other problematic circumstances must be solved in the areas where they arise.

358 The lack of reciprocity, e.g., which is often criticised, is not an aspect competition law could take into account. Competition law cannot and must not correct imbalances in trade relations. Problems arising from this cannot be solved by amending the analytical framework of competition law, i.e. by amendments that do not correspond to the actual conditions of competition. In particular, the fiction of global markets which do not actually exist and do not reflect the economic reality fails to identify the causes of the alleged problems while tending to create new problems as the competitiveness of European companies suffers in the medium term due to the problems inherent in concentrated markets. A sustainable solution regarding the issue of reciprocity can only be achieved by the legislator, i.e. by eliminating the causes for distortions of competition in the area of trade law.

359 Conversely, competition law can and must take into account the aspects that are relevant for the forecast of the market behaviour of state-owned companies. The companies' expected pricing behaviour plays a particularly important role as it has a direct effect on the market position.

360 The borderlines are blurred: The parties to the merger are right in pointing out that striving to expand one's own market position is not at all an anti-competitive endeavour, but inherent in the concept of competition (see statement of the parties of 17 February 2020, p. 46). Under this concept it can also be necessary to accept temporary losses for the purpose of market entry.

361 However, in contrast to the opinion of the parties, it is not correct that pricing behaviour gains relevance under competition law only if it reaches the level of an exclusionary strategy. This may apply to the area of abuse of a dominant position, but for several reasons this is not the right benchmark to be applied in merger control:

362 The primary question to be addressed in merger control proceedings is how the market position of the participating companies will change during the forecast period. On the one hand, low-price strategies significantly above the level where competitors are squeezed out of the market can already be significant if they are suitable to attract a significant part of the demand. On the other hand, not all prices below cost necessarily give rise to competition concerns in merger control review. Depending on the market structure it can also be necessary to accept a considerable initial loss in order to enter the market.

363 Against this backdrop, it is above all the price-setting behaviour during the forecast period which the forecast under competition law must take into account. In this context, the analysis must especially consider the fact that the People's Republic of China is a centrally controlled economy where the state owns a large number of key companies whose behaviour is

subject to central control. This affects both the volume and use of the financial and technical resources available. The possibly resulting scope of competitive action can have significant influence on the conditions of competition, particularly in cases where a state-owned company adopts a low-price policy in order to expand its own market shares.

364 These issues will be discussed in the following.

(i) Participations held by the People’s Republic of China

365 If a state like the People’s Republic of China holds participations in companies, this leads to a situation where there is a great difference between the sheer number of companies controlled by the same owner (in this case: the state) and the size of groups of private companies or the amount of participations held in private sector economies. This can already be seen from the partial list of companies in which the People’s Republic of China holds participations, which CRRC has disclosed at the Bundeskartellamt’s insistence.

366 This information shows that CRRC is associated with a large number of companies which produce input products for the manufacture of locomotives or buy finished rolling stock. The association is organised by entities which directly or indirectly exercise control through central government bodies and regional or local administrative authorities. The Acquirer thus shows a substantial degree of vertical integration. The relevant operations of companies owned by the People’s Republic of China cover a large number of components that are required in the production of rolling stock, e.g. the production of traction motors, traction converters, train control systems, train protection systems, sensors, bearings, transmissions, brake systems and brake components, doors, toilets, window panes, axles, aluminium, steel and many other products. In this case vertical integration not only covers the manufacture of the processed products but is also characterised by a high degree of value creation, often far upstream in the supply chain.

367 Moreover, the information submitted so far not even includes all of the companies in the sector that are affiliated with CRRC. The Bundeskartellamt insisted that at least all of the horizontally or vertically affiliated companies should be identified, in particular joint ventures with Western manufacturers of rail technology, as this is how technology transfer takes place and the information is important for assessing the capacities of the affiliated businesses. The Bundeskartellamt also required that a list of input products be submitted including, in particular, the affiliated businesses supplying steel and batteries. CRRC has not fully met these requirements. It must be assumed that, compared to the information used as the basis of the authority’s present assessment, the group of affiliated companies is even larger and includes further resources in the relevant sector.

368 Internal access to the components described above represents at best only part of the resources that are in fact available to CRRC. However, this already illustrates that together with the other companies owned by the People's Republic of China, CRRC enjoys an unrivalled degree of vertical integration. CRRC can thus purchase input products from affiliated companies within the centrally controlled economic system.

369 This creates three advantages for CRRC:

370 First, the company has priority access to the relevant products in the case of new product developments or shortages. However, such situations are not permanent but only likely to occur in (possibly larger) time intervals.

371 Against this background, the second advantage arising from the affiliation with manufacturers of key input products which has permanent effects can be considered to be more important: Vertical integration enables CRRC to avoid the problem of "double marginalization". This problem occurs in vertical supply chains if several companies add their own profit mark-ups. The resulting multiple profit mark-up reduces the companies' total profit as a higher priced final product reduces the overall volume of purchases. Vertical integration represents an option to solve this problem as it enables a uniform calculation based on the final product. In theory, this option not only increases the companies' profits but also consumer surplus. Ultimately, the possibility of a uniform calculation throughout the value chain provides CRRC with cost advantages over less vertically integrated suppliers.

372 In this context the parties point out two aspects: Firstly, the size of CRRC makes central control impossible, the individual group companies operate as independent businesses (see written statement of 27 March 2020, p. 98). In addition, according to the parties, the Bundeskartellamt failed to investigate the intensity of competition on the sub-supplier markets (loc. cit.). Secondly, in its Guidelines (OJ 2008, C 265/6, para. 13) the EU COM assumed that avoiding double marginalization represented an efficiency gain (see written statement of 27 March 2020, p. 99, with further references) which could not be interpreted to the disadvantage of the companies.

373 The Bundeskartellamt agrees with the parties' view that, in accordance with e.g. the above-mentioned Guidelines of the EU COM, avoiding double marginalization by means of vertical integration represents an efficiency gain which is part of the competition policy acquis. However, the Bundeskartellamt has not in any way interpreted this to the disadvantage of the parties, but only used the efficiency gain to describe the advantages enjoyed by a highly vertically integrated group of state-owned companies. The present case is not about assessing any further integration of China's state-owned companies because the companies owned by the People's Republic of China already operate as a group, and the

merger under review will not make any difference in this respect. The Bundeskartellamt only aims to explain why vertical integration, such as in the case under review, is not at all irrelevant under competition law, as claimed elsewhere by the parties (see written statement of 27 March 2020, p. 11), but can provide a company with advantages.

374 Finally, CRRC can benefit from state aid provided at any point of the vertical supply chain which can be passed on within the group of companies through particularly low prices. This is another option for CRRC to obtain economic cost advantages.

375 The parties argue that CRRC also makes purchases from other companies owned by the People's Republic of China on the basis of "arm's length" conditions (see written statement of 27 March 2020, p. 97). According to the parties, the company has no access to the resources of the People's Republic of China but makes substantial purchases from European manufacturers, in particular for its international business. In their view, this proves that a simple substitution within the group owned by the People's Republic of China is not possible.

376 The parties' arguments do not contradict the authority's assessment. From the perspective of the actors involved, the relationship with other state-owned companies may well have been accurately described. Even in a centrally planned economy tough negotiations with sister companies are not necessarily fiction. However, their perspective differs considerably from the point of view of central planners who carry out strategic control over the individual parts of the Chinese economy, specifically over companies, such as CRRC, which are under (majority) state ownership. This is where parameters determining which companies should receive support and which scope of action they should be given can easily be changed.

(ii) Centrally controlled use of resources

377 It is CRRC's opinion that the assumption under Section 17(2) of the German Stock Corporation Act (*Aktiengesetz, AktG*) is rebutted because, as a publicly listed company, CRRC has to take all its commercial decisions in complete autonomy from the majority shareholder CRRC Group Co. (see written statement of 17 February 2020, p. 4). CRRC invokes as proof the circumstance that CRRC Zhuzhou Locomotives Co., Ltd. had to obtain the approval of its parent company for the acquisition of Vossloh. According to CRRC, this is in compliance with Chinese legal provisions stipulating that state entities responsible for asset management within the framework of state shareholdings should not intervene in commercial matters concerning the independent operations of their affiliated companies. They state that the "Code of Corporate Governance for Listed Companies of the CSRC" e.g. stipulates that at least one third of the board members have to act independently from

the shareholders and have to be solely committed to the well-being of the company (see written statement of 27 March 2020, p. 100). In their view, this independence is also illustrated by the fact that under the statutes of CRRC the Chinese state cannot take any decisions on splitting up, merging or dissolving the company by itself, but has to obtain a qualified two-thirds majority. The parties to the merger emphasise that in a press conference in the context of the 13th People's Congress, the State-owned Assets Supervision and Administration Commission SASAC stressed that state-owned companies should be independent market participants (for more details on this see written statement of 27 March 2020, p. 100).

378 The state's participation in CRRC amounts to 51.34%. This fulfils the requirements for the assumption under Section 17(2) AktG that companies in which a majority interest is held are controlled by the parent company.

379 The references made by the parties regarding rights protecting minority shareholders which apply to publicly listed companies or correspond to standard minority shareholder protection rights that are also provided for under German law (e.g. the requirement of a qualified majority in CRRC's statutes for splitting up, merging and dissolving the company) cannot refute the assumption under Section 17(2) AktG. These types of transactions precisely do not represent regular business transactions on which the assessment of control would have to be based. In terms of sheer numbers alone, the claim that the company's decisions are taken independently also cannot be based on the fact that board members are appointed by a decision taken independently from the shareholders. This applies all the more since in centrally planned economies, personal interdependencies can also be achieved in many other ways, for example through party membership.

380 It appears to be a rather fabricated claim that the influence exerted by state owners in a state which explicitly operates a central planning system for its economy should be more restricted than in the case of privately owned companies. This is precisely what the parties intend to prove by means of the quote from the SASAC press conference.

381 Statements by state entities as well as internal documents CRRC had to submit during the course of the proceeding have shown that this is not the case, however. In the present matter, important circumstances indicate that a controlling influence is in fact exerted on CRRC by the state, which fully reflects the assumption of Section 17(2) AktG.

382 For instance, CRRC is listed as an associated company on the homepage of the State-owned Assets Supervision and Administration Commission of the State Council, SASAC. In their business description ("What we do") SASAC explains on the homepage that its tasks include, among other things, the following tasks (only some are mentioned here): 1.

exercising proprietary rights and supervising the management, […], 3. pushing forward the reform and restructuring of state-owned enterprises, 4. appointing and removing top executives, 5. ensuring the turning over of capital gains to the state, 6. ensuring compliance with the guiding principles, policies, etc. The intention of the company's majority shareholder clearly contradicts CRRC's alleged independence of state requirements.

383 But also irrespective of SASAC's statements, CRRC's account that the company could act independently from its state owner is not convincing. This arises from the fact alone that the economy in China is managed by way of centrally determined five-year plans on which companies base their activities. This especially also applies to CRRC. In response to a reminder issued by the Bundeskartellamt, the company provided the "Development plan of CRRC Corp. regarding the 13th five-year period", among other documents (pp. 987 f. of the file). In the document "Annex 1: Internationalised operation during the 13th five-year period – Development plan of CRRC Corporation Limited" (pp. 1061 ff. of the file), which was eventually made available in an unredacted form, there are several indications suggesting that CRRC indeed bases its business strategy on the requirements of state authorities. For example, CRRC intends

(p. 1063 of the file). Also with regard to the statements on

(p. 1074 of the file).

384 In this regard, the parties to the merger note that the development plan is not a plan subordinate to the 13th five-year plan but an independent business plan. To prove this, they state that also private companies from China, such as Alibaba, also provide five-year business plans which refer to the five-year plan set by the state (see written statement of 27 March 2020, p. 101). In their view, it is not unusual to have a business plan that is in line with the policy framework.

385 It is unnecessary to discuss these submissions in detail since the statements made by the parties to the merger are not suited for legal reasons alone to shake the assumption of dominance in terms of stock corporation law. The criterion based on which this assumption can be refuted is not the fact that the Chinese state does not exert more influence than a private owner would do in its stead. The question as to whether the state really does not exert influence on CRRC is decisive. This is, however, not suggested by the examples provided by the parties to the merger.

386 In addition, it is to be pointed out here that in the present proceeding the Bundeskartellamt has not yet analysed any personal links between CRRC's management and the Chinese Communist Party. By way of example, reference is made to CRRC's CEO, Mr Liu Hualong, who according to CRRC's homepage is CRRC's Party Secretary and at the same time a member of the Chinese Communist Party's central Commission for Discipline Inspection. The close link between the Communist Party and CRRC's management can also be seen with regard to various other central executives by merely taking a look at the company's homepage. This too does not support the parties' refuting of the assumption that the company is controlled by the enterprise holding a majority ownership pursuant to Section 17(2) AktG.

387 For further information on the Chinese economic model and the importance of controlling businesses in a centralised way, especially state-owned businesses, please refer to the COM report "Commission Staff Working Document: On Significant Distortions in the Economy of the People's Republic of China for the Purposes of Trade Defence Investigations" of 20 December 2017 (available at https://trade.ec.europa.eu/doclib/docs/2017/december/tradoc_156474.pdf; in the following: **EU COM's China report**). In this document, the EU Commission has compiled extensive information on the Chinese economic model for the purpose of anti-dumping proceedings. The report also outlines the mechanisms of the centralised influence exerted on the Chinese economy and discusses the legal framework conditions in detail.

388 In their brief statement of 17 April 2020, the Acquirer states that the Bundeskartellamt does not base its conclusions on the financial resources of the company but the financial resources of the entire People's Republic of China and in this way the authority suggests that CRRC is a "puppet" of the Chinese state and able to behave independently of the usual economic rationalities. This is, however, neither claimed nor suggested in general terms. Instead, the Bundeskartellamt assumes based on specific proof – which also includes the internal documents mentioned above – that the Chinese state in fact exerts a specific influence on CRRC (in this regard also see cc(3)(iv)).

(iii) Scope of resources available

389 In the present case, the resources that CRRC can use for its actions in the market are of particular significance.

390 The competitors draw attention to the fact that due to its close connection to the Chinese state CRRC enjoys various advantages which are not available to them to a comparable degree. Therefore, they consider competition to be significantly distorted to their disadvantage.

391 In this respect, they particularly point out hidden funds provided by the Chinese state, which due to the state aid rules of the EU would not even be allowed to be granted to European companies in the first place. In this context, the competitors especially mention the research funds provided by the Chinese state from which CRRC benefits.

392 In their view, CRRC also enjoys cost advantages due to lower wages and lower social standards. The competitors expect that CRRC will not establish local production or only a limited share of local production in the EEA and will try to relocate as much of the value creation process as possible to China where labour costs for production are lower.

393 Several competitors also point out CRRC's extraordinary financial means. In this respect, the competitors first focus on the large profits CRRC generates on the protected domestic market in China. According to CRRC's 2015 and 2016 annual reports, the gross margin regarding the rolling stock sector exceeded 20%. In their view, the Chinese market cannot be addressed by foreign providers (non-reciprocity); CRRC has a de jure monopoly on rolling stock sales in China. In addition, CRRC is specifically supported by the Chinese state and in this way it is able to take particular risks and offer cheap prices others cannot match. The EU COM also addresses distorted input prices, industrial estates at reduced prices and financing below market prices (most recently, for example, COM of 10 October 2019, OJ 2019 L 259/15, para. 70 – Anti-dumping duties on steel road wheels originating in the People's Republic of China).

394 The circumstances addressed have to be dealt with in a differentiated manner.

395 As a starting point, due to the purpose of Section 36 GWB, only those circumstances which can influence a company's market behaviour (especially by expanding a company's competitive scope of action) are important for the assessment under merger control.

396 The forecast of a company's future behaviour must, in principle, be based on behaviour that is compliant with the legal framework: It cannot be assumed that a company will behave in violation of the rules only because it has the possibility to do so. It may be advisable to make exceptions in the individual case if, for example, an area subject to regulation is affected by a systematic underenforcement or if a market participant already has a history of violating regulations – such as anti-competitive behaviour in competition law – and it is to be expected that this unlawful behaviour will be continued if, for example, a merger facilitates such behaviour. If such an exceptional case is not shown to exist, however, conceivable breaches are not relevant for the assessment under merger control. Instead, it is the relevant competent authorities' duty to ensure that companies comply with the provisions of the areas of law in question.

397 The framework conditions described by the competitors relating to CRRC's market behaviour in the EEA and Switzerland are in the following analysed as to their relevance for the assessment under merger control based on this criterion. In its brief statement of 17 April 2020, the Acquirer points out that dealing with trade-law issues such as reciprocity and dumping activities and the considerations resulting from this shows the Bundeskartellamt's mistrust of Chinese state-owned companies, which should not be part of a merger control decision (brief statement of 17 April 2020, p. 2). This view cannot be supported, however. The framework conditions mentioned were addressed by the competitors. Based on the principle of ex officio investigation, the Bundeskartellamt considers it necessary to assess these circumstances. The fact that an issue is primarily important under trade law does not automatically lead to this issue being irrelevant in terms of merger control. If individual particularities of the framework conditions also have a merger control aspect, they must then be included in the assessment and cannot simply remain unmentioned – as apparently expected by the Acquirer. The decision is in general based on the endeavour to distinguish between relevant and irrelevant factors and to assess the relevant influential variables based on substantial facts. For the forecast, only such circumstances are taken into account that are relevant for a company's market behaviour.

(iv) Access to state aid

398 With regard to CRRC, it is still to be assumed that the company has privileged and – at least with regard to the market relevant in this case – theoretically unlimited access to state aids.

399 State aids can considerably distort competition. They allow companies to offer their products at prices that could not have been formed in a competitive environment on the market. In order to exclude any distortions caused in this way, the EU has provided rules on state aid in Articles 107 ff. TFEU regarding trade between Member States; compliance with these rules is monitored by the EU COM, a forceful supranational authority. Within the European Union the corresponding legal framework results in a high degree of transparency as well as official and judicial control in terms of granting state aids. A similar legal framework with a corresponding degree of transparency regarding state aids does not even remotely exist in China.

400 Insofar as the parties to the merger point out in this context that the aids granted are fully recorded in CRRC's annual report and have to be correct in order to meet the transparency requirements for stock exchanges (see written statement of 27 March 2020, p. 102), it is to be stated that transparency requirements under stock exchange law are fundamentally unsuited to uncover hidden subsidies and to establish judicial control to an extent provided for under Articles 107 ff. TFEU.

401 Contrary to the opinion of the parties to the merger, the Bundeskartellamt is not required to extensively investigate the financial flows between CRRC and the People's Republic of China in order to prove previously granted aids in detail. This is, however, exactly what the parties demand when requesting that additional aids not recorded in the annual report be specifically proven. This is in fact neither possible nor necessary for the purposes of the forecast decision to be made in the present case.

402 Investigating additional – especially hidden – state subsidies not recorded in the annual report is obviously not feasible: CRRC itself encountered insurmountable difficulties in disclosing the current orders received by its sister companies in the form demanded in the Bundeskartellamt's request for information of 19 March 2020; information on the customers could not be obtained. If CRRC finds it impossible to provide even simple information such as this, it can be assumed that it is even less likely that the complex financial data necessary for a detailed review of hidden state subsidies could be made available. Theoretically, such investigations could indeed be carried out: If necessary, the Bundeskartellamt could review the financial flows between CRRC and the Chinese state with the help of official information requests and auditors. This would, however, result in a series of information requests, threats of administrative fines and stop-the-clock decisions so that the proceeding would be delayed by months. This may not be in the interest of CRRC or the Chinese state as its owner since this would amount to a de facto prevention of the merger.

403 A detailed, quantifying proof of hidden state subsidies previously granted is, however, also not necessary for the purpose of the present proceeding: For the purpose of the forecast decision to be made pursuant to Section 36(1) GWB it is sufficient to consider the likelihood and possible scope of strategic state aids granted in the future, that is the *access* to state aids, if needed. This depends on the *willingness* of the relevant state to grant state aids and its legal and economic *possibilities* to provide aid. It is therefore to be assumed that CRRC enjoys an immense lead over its European competitors in terms of access to state aids.

404 The Chinese state's general possibility and willingness to grant CRRC state aids already result from the recorded subsidies accounted for in CRRC's annual report: They amounted to roughly EUR 75 million (see CRRC, Annual Report 2018, p. 220, available at https://www.crrcgc.cc/g5251.aspx, last accessed on 26 February 2020) and are not denied by the parties to the merger (see written statement of 27 March 2020, p. 103). According to the information provided in the annual report, these state grants were provided mainly for the purpose of research and development, investment in property, plant and equipment and prepaid lease payments in order to encourage the company's growth (see CRRC Annual Report 2018, p. 220). The exact purpose for which these grants were provided and

particularly the question as to whether these grants were all of the subsidies provided cannot be specifically gathered from this.

405 With regard to the unrecorded hidden subsidies, the competitor Alstom estimates that the state aids granted actually amount to roughly EUR 200 million. The parties to the merger deny this (see written statement of 27 March 2020, p. 103). The exact amount of the subsidies is, however, irrelevant.

406 The reason for this is that the Chinese state's *willingness* to grant CRRC subsidies to support its competitive position has already been established based on other facts:

407 With regard to the general willingness to provide subsidies, reference is first made to the EU COM's China report. This report has been cited in numerous anti-dumping decisions rendered by the EU COM to prove that unlawful state aids have been granted. In these intervening proceedings, the report serves as evidence on which far-reaching measures are based and it has been applied and has remained undisputed on many occasions. If this report can be used as the basis for the findings reached in specific anti-dumping decisions, it can also be used in merger control proceedings for the purpose of assessing the access to state aids. In this report, extensive information on the Chinese economic model has been compiled for the purpose of anti-dumping proceedings. The report describes the effect mechanisms by way of which the state's central controlling influence is ensured in China and how state-owned companies are used to implement the state's strategic objectives in the market. In China, the economy is governed on multiple, differentiated levels by providing abstract objectives that are to be implemented by the individual businesses. At the top planning levels, the planning does not consist of specifying concrete quantities; instead strategic objectives regarding the direction in which the economy in general and the individual businesses in particular are to be developed are determined. These objectives are set out and aligned in various documents which differ in terms of their scope of application and their degree of specification (see also COM of 9 October 2019, VO 2019/1693 – Anti-dumping duties on steel road wheels originating from the People's Republic of China, para. 69). Overarching state strategies regarding the economic development are of key importance; in these strategies, the central government sets out strategic plans for the development of individual sectors that are regarded as future-oriented.

408 In terms of the willingness of the Chinese state to grant aids especially with regard to CRRC, it is to be taken into account that with its product portfolio the company is at the intersection of two especially central state strategies, namely the industrial strategy „Made in China 2025", which also defines the manufacture of modern rolling stock as one of the ten key

sectors, and the „One Belt, One Road“ strategy, which is about infrastructure projects for the purpose of expanding intercontinental trade routes, especially also railway connections.

409 These overarching strategies are implemented in five-year planning periods; the 13th five-year plan is currently applicable. For the 13th five-year planning period, CRRC has been assigned the central task of gaining shares in the worldwide rolling stock market by way of innovative, modern railway vehicles. Having been assigned this task also involves the state’s extensive support in reaching the objectives (for more details including CRRC examples see B.II.2.g.cc(3)(iv)).

410 Under the aspect of the Chinese state’s willingness to grant hidden subsidies, it is also to be considered that CRRC enjoys a de facto monopoly position as provider of rolling stock in the Chinese domestic market, which results from the foreclosure of the Chinese market – brought about by state measures – to foreign providers. This is rightly pointed out by the competitors. Whereas in the European Union public procurement law rooted in Union law ensures that competition for public tenders is as open as possible, participating in tender procedures in China is not open but requires prior approval. This is often linked to establishing local production. Article 10 of the Government Procurement Law of the People’s Republic of China (see http://www.fdi.gov.cn/1800000121_39_2099_0_7.html), for example, establishes a so-called “buy Chinese” rule which only in few exceptional cases allows foreign products to be used. In connection with other rules, this results in discrimination against foreign providers (for more details see “Commission Staff Working Document: On Significant Distortions in the Economy of the People's Republic of China for the Purposes of Trade Defence Investigations” of 20 December 2017, 159 ff.). The Association of the European Rail Supply Industry, UNIFE, has calculated an index for market accessibility. For the period from 2009 to 2011, UNIFE calculated an initial value of 65%; in the period from 2015 to 2017, this value decreased to 18% (see UNIFE, Annual Report 2018, p. 30, available at http://www.unife.org/publication-press/publications/163-annual-report-2018.html, last accessed on 2 March 2020). One example of this mode of action is, for instance, an invitation to tender issued by the China Railway Group regarding 252 high-speed trains in 2014 in which forming consortia was excluded in the tender specifications. As a result, the tender procedure was open only to local Chinese companies (see https://www.railjournal.com/passenger/high-speed/china-issues-tenders-for-232-high-speed-trains/, last accessed on 27 January 2020).

411 Local production is, however, usually possible only in the context of joint ventures and is therefore associated with the transfer of technology.

412 Pointing out that various Western railway technology manufacturers are also successfully conducting business in China (see written statement of 27 March 2020, p. 105) does not change this. If these manufacturers only produce components – as is the case with regard to Knorr Bremse – then this is irrelevant for the question as to a de facto monopoly position in the vehicle market since no entire vehicles are manufactured. And in the case that participating in a tender procedure for vehicles is possible only in a consortium with a Chinese company (CRRC), this at best underscores CRRC's de facto monopoly since it is CRRC that decides within the context of establishing a consortium which competitor it will involve in the project.

413 State aids for the purpose of research and development are particularly apparent within the framework of CRRC's associated companies. These include various collaborations with universities that explicitly serve to develop specific components needed by CRRC. According to its annual report, CRRC spent EUR 1.4 billion on research and development (in the following R&D) in 2018, some of the expenses were financed by the state.

414 Other support measures through which the Chinese state supports state-owned companies in competition are not explicitly mentioned by the competitors but are nevertheless important in this context. These include, among others, reduced prices for inputs, especially low prices for input products, and privileged and/or cheaper access to commercial properties (see COM of 10 October 2019, OJ 2019 L 259/15, para. 70 – Anti-dumping duties on steel road wheels originating from the People's Republic of China, para. 111)

415 The economic and legal *possibilities* to grant CRRC aids if needed in terms of competition are also undoubted:

416 The economic possibilities of the People's Republic of China are – compared to the resources available to the competitors in the relevant market – almost inexhaustible. CRRC could in any event persist longer in a price war in the shunter sector than its competitors. The reason for this is that in the event that the resources of a large state are concentrated on one single market, they by far exceed the possibilities of private competitors which have to base their activity regarding the manufacture of shunters on the capital interests of their shareholders and not on long-term industrial strategic plans.

417 Effective legal barriers against CRRC receiving aids in the sector in question do not exist either: Trade law measures of the European Union are linked to burdensome procedures and also pose the risk of trade policy counter-measures resulting in the fact that the decision regarding such measures is always rather a political than a legal question. In addition, the trade law instruments focus on imposing protective duties on imports, not on preventing subsidiaries located in the EU, such as Vossloh, from receiving subsidies for their

production. A legal framework corresponding to Articles 107 f. TFEU does not exist in China.

418 The question as to whether and to what extent the theoretically almost unlimited subsidies could be used with regard to CRRC is discussed below (for details see B.II.2.h.cc). In this regard, previous market behaviour in particular can provide important indications.

(v) Cost advantages

419 Numerous competitors draw attention to the cost advantages enjoyed by CRRC due to its large proportion of products manufactured in the People's Republic of China and the associated low wages. In their view, CRRC is thus able to offer cheaper prices than its competitors and thus to dominate the market in the medium to long term.

420 The practice of passing on cost advantages in the form of lower prices criticised by the competitors is, however, not fundamentally objectionable from the point of view of competition law. This is rightly pointed out by the parties to the merger (see written statement of 17 February 2020, p. 46). It is indeed conceivable that this will result in considerable increases in CRRC's market shares in the medium to long term. But this is generally considered entrepreneurial achievement which involves (cost) advantages for buyers of rolling stock and improves the efficiency of an economy. Comparative cost advantages are one of the central reasons for the welfare-enhancing effect of open international trade relations.

421 In addition, the parties to the merger point out in terms of facts that the German Economic Institute has determined that the labour costs in China are already higher than in Romania and Bulgaria (see written statement of 27 March 2020, p. 106).

422 The extent to which comparative cost advantages can be used by foreign competitors is not primarily a question of competition law but of trade law. If lower wages or social standards are regarded as a threat to established manufacturers in their own territory, it is the right and the duty of the legislator to readjust trade relations. Competition law is not suited for this purpose. Therefore, it also has to be considered that the legislator has the possibility to stipulate or at least permit the requirement of local production in the context of public tender procedures.

(vi) Financial means

423 As a state-owned company, CRRC has access to the financial resources of the Chinese state. Being a company at the intersection of two important economic strategies of the

central government, it is to be expected that the company will be granted the necessary funds it needs to reach its objectives set out in the currently applicable 13th five-year plan.

424 In addition to direct state aids, granting loans is also an important instrument for providing funds to state-owned companies in China.

425 The Chinese banking sector is characterised by a large share of state-owned banks, which – just like the other state-owned companies – are used strategically to achieve the goals set by state planning. One way to achieve this is to grant loans at interest rates below market level.

426 In its China report, the COM points out that it was ascertained in several state-aid proceedings that the Chinese companies in question received loans at interest rates below market level irrespective of the company's financial situation and its credit risk ("Commission Staff Working Document: On Significant Distortions in the Economy of the People's Republic of China for the Purposes of Trade Defence Investigations" of 20 December 2017, 242 with further references). The companies in question were active in strategically supported sectors.

427 In some sectors of the Chinese industry, this has led to serious credit risks, especially in the coal and steel industries (see "Commission Staff Working Document: On Significant Distortions in the Economy of the People's Republic of China for the Purposes of Trade Defence Investigations" of 20 December 2017, 248 with further references). In cases in which state-owned companies are no longer able to service their loans, the Chinese government prevents insolvency and, despite little prospect of loans being repaid, arranges for refinancing, debt restructuring or a bailout. This phenomenon predominantly affects sectors where there are excess capacities ("Commission Staff Working Document: On Significant Distortions in the Economy of the People's Republic of China for the Purposes of Trade Defence Investigations" of 20 December 2017, 251 with further references). According to press reports that are publicly available, the extent of indebtedness of the state-owned Chinese railway company China Railway, a sister company of CRRC, has already reached critical levels.

428 Another instrument to support state-owned companies is the inconsistent application of insolvency law. The principles laid down in the "Enterprise Bankruptcy Law of the People's Republic of China" of 27 August 2006 are similar to those set out in the insolvency regulations of other countries. However, Chinese insolvency law is not enforced consistently (for more details regarding the applicable rules and the application practice: "Commission Staff Working Document: On Significant Distortions in the Economy of the People's

Republic of China for the Purposes of Trade Defence Investigations" of 20 December 2017, 139 ff.).

429 Overall, these framework conditions provide almost unlimited possibilities for state-owned companies to access financial means in order to finance competitive initiatives in the market. This also applies to the Acquirer, especially against the backdrop that CRRC is at the centre of the trade strategies "Made in China 2025" and "One Belt, One Road".

430 The question as to whether such actions are permissible under trade law is irrelevant for merger control; any problems resulting from this have to be addressed in the state-aid or anti-dumping proceedings designed for this purpose. For the application of competition law, only the fact that the Acquirer has extensive possibilities to finance its actions in the market not available to competitors is relevant.

bb. Forecast of Vossloh's market position without the merger

431 In view of the market entry of three new competitors and CRRC, the Bundeskartellamt assumes that without the merger Vossloh will not dominate the market in the forecast period.

432 Vossloh's volume-based market position has dropped over the past few years, as already described under B.II.2.a.cc in the context of the development of the market structure. Nevertheless, in 2018 the value-based market share exceeded the threshold of 40% based on which a company is assumed to be dominant pursuant to Section 18(4) GWB. From 2014 to 2018, Vossloh's volume and value-based market shares reached [40-50]% and thus clearly exceeded the threshold for the assumption of market dominance. Although the assumption set out in Section 18(4) GWB is thus shown to exist in terms of figures, due to its investigation results the Bundeskartellamt assumes that Vossloh will not dominate the market in the forecast period.

433 The parties to the merger are of the opinion that due to the neglect of the past years Vossloh's competitiveness has suffered irreparably (see written statement of 27 March 2020, p. 77).

434 The arguments brought forward by the parties to the merger are addressed in detail in the context of the forecast. When forecasting the future development of Vossloh's market position, several circumstances are to be taken into account: The competitive situation has changed due to three additional rolling stock manufacturers entering the shunter market (see B.II.2.g.bb(1)); in addition, Vossloh's competitiveness has deteriorated substantially

over the past years due to the lack of investments (see B.II.2.g.bb(2)). When assessing the market shift, the high standing Vossloh enjoys among customers is to be taken into account (see B.II.2.g.bb(3)). Lastly, these influencing factors are assessed in detail and scenarios regarding the market situations which can occur depending on how the individual influencing factors develop are outlined. Especially with regard to Vossloh, the market results that seem realistic thus show significant variations (for more details see B.II.2.g.bb(4)).

(1) Competition due to new providers

435 With Alstom, Toshiba and Stadler, three new shunter providers have entered the market. At least Alstom and Stadler are larger rolling stock manufacturers with an established presence in Europe. Toshiba is a renowned company in the rolling stock sector but its business activities in Europe have not yet reached a noteworthy extent.

436 The parties to the merger are of the opinion that CAF has also entered the market (see written statement of 27 March 2020, p. 76). This is not correct, however: It is true that the Spanish manufacturer CAF has received an order from the French RATP regarding the provision of twelve hybrid shunters with electric drive and traction battery for the metro network in Paris. The locomotives will not be equipped with a diesel motor. These locomotives are special vehicles that cannot be regarded as replacing diesel-powered shunters since it is not possible to use the vehicles as shunters in industrial businesses or shunting yards. This also shows that – contrary to the assumption of the parties to the merger – centre cabs are only one of several criteria to define the market. In addition, the parties to the merger point out themselves elsewhere that “hybrid locomotives with electric drives and without diesel aggregates” are “a different product offered on a different market with completely different requirements” (written statement of 27 March 2020, p. 122). CAF is thus not to be regarded as another competitor.

437 Nevertheless, the effects on Vossloh’s market position of the three market entries which have, in fact, taken place are difficult to forecast. It is hardly likely that Vossloh will manage to reach the market shares of [50-70]%, which it was able to reach in 2014 and 2015, since Alstom, Toshiba and Stadler have managed to secure a certain production workload for the next years due to individual major orders.

438 There are, however, doubts as to whether these companies will manage to secure follow-up orders after having been awarded their first major contract. The changes caused by these three companies entering the market can be forecast only with uncertainties.

439 To date, the market position of the three companies has developed as follows:

440 With regard to its large shunter Prima H4, Alstom was awarded a contract regarding 47 dual-mode locomotives with the Swiss railway company SBB in 2015. The Bundeskartellamt is not aware of any follow-up orders; the order regarding the production of shunters for the Paris-based metro company RATP mentioned above was awarded to the Spanish manufacturer CAF instead of Alstom in 2017. According to press reports, the company had not received any other orders for its Prima H4, at least not to this date. With regard to its smaller three-axle diesel-hybrid locomotive Prima H3, Alstom has regularly received orders the extent of which, however, has been rather limited so far. Contrary to the view held by the parties to the merger, the Bundeskartellamt has indeed taken into account that from 2014 to 2018 Alstom reached market shares of 10-20% essentially based on the sale of the Prima H3 locomotive (see written statement of 27 March 2020, p. 76).

441 In 2018, Toshiba secured an order from Deutsche Bahn regarding the provision of 100 hybrid shunters without a tender procedure. The Bundeskartellamt is not aware of any follow-up orders so far received by Toshiba, but the company is still developing its new vehicle.

442 In April 2019, Stadler announced the plan to develop a new shunter. At that time, the company had been awarded a contract with the Finnish VR Group relating to the provision of 60 heavy shunters. No information on any follow-up orders received by the company with regard to its new shunter is known.

443 The shunter market has previously shown, however, that the appearance of new competitors in the shunter sector does not automatically mean that the companies will be able to permanently reach considerable market shares: Alstom has been a competitor for four years; despite the resources and skills available to the company, this has not yet resulted in a substantial shift in the market conditions. It is indeed true that Alstom has managed to sell some smaller hybrid shunters of its Prima H3 model and in this way to establish a market position with regular sales. However, the company has so far not achieved a breakthrough resulting in a sweeping shift in market conditions.

444 Since Toshiba and Stadler have only recently entered the market, it is still too early to assess the effects of their market entries based on empirical data.

445 In this context, it is to be considered, however, that Voith – a very renowned company in the rolling stock components sector – has not managed to secure further orders for its Gravita shunter model. On the contrary, the company entered the market for a major order placed by DB regarding 130 shunters produced between 2008 and 2013 but subsequently exited the market again. After concluding this order, the company ceased its locomotive production; the plant in Kiel is used for maintenance work only.

446 The parties to the merger emphasise that one single company exiting the market cannot be generalised (see written statement of 27 March 2020, p. 77). In addition, it has to be considered that Voith offered only diesel-hydraulic locomotives, which, in their view, are no longer in demand in the market. In this regard, the account rendered by the parties to the merger has to be corrected in terms of facts since the manufacturers Schalker Eisenhütte and Gmeinder were also insolvent. For the latter company it was possible to continue its business as Gmeinder Lokomotiven GmbH under the umbrella of the Zargo group. In both cases, the companies tried to manufacture a larger shunter certified for mainline services. In the context of the market survey, other views on the market potential of diesel-hydraulic traction systems were also mentioned; these views differed from the assessment repeatedly mentioned by the parties to the merger that this technology was no longer in demand.

447 Against this background, Alstom's difficulties in finding further buyers for its Prima H4 suggest that it is not a given for new market participants – even for established providers – that they will be able to permanently win a substantial share of the market. Especially with regard to industrial customers and private railway companies, it seems difficult for new providers to establish themselves. It can be expected, however, that as established and renowned rolling stock manufacturers at least Alstom and Stadler will be able to develop a lasting and permanent market position. The extent to which this will happen is, however, difficult to predict, especially with regard to Stadler.

(2) Vossloh's competitiveness

448 The target company's competitiveness has suffered over the past few years. This is reflected in a reduced model range and in the deficiencies in developing innovative drive technology. Especially the reduced model range caused the production numbers to drop between 2015 and 2016.

449 The extent to which it may be possible to remedy these deficits is likely to strongly depend on the future behaviour of Vossloh's future shareholders. In the Bundeskartellamt's view, there is much to suggest that the description of the competitive gap between the target company and its competitors and of its technological deficits provided by the parties to the merger is greatly exaggerated. Nevertheless, doubts remain as to whether it is possible for Vossloh to catch up with its competitors in the forecast period.

450 In their written statements of 17 February 2020 and 27 March 2020, the parties to the merger present Vossloh as a company which will continue to become less important over the next few years (see written statement of 17 February 2020, pp. 17 f. and 34 ff.). In their view, the target company is a company that

The parties hold that with its DE12/DE18, Vossloh merely offers a product which in light of current technological changes is no longer competitive. In their opinion, the DE12/DE18 is a mere diesel locomotive with regard to which

In their view, the company rather has to develop a completely new vehicle, putting in the corresponding time and money.

451 The Bundeskartellamt has doubts as to whether this assessment is correct. However, the authority cannot definitively say with certainty that the way in which the parties to the merger present the company is incorrect.

452 It is true that the way in which the parties to the merger present the company in the proceedings contradicts the way in which they presented Vossloh's competitiveness in the context of the sales process. For example, in a presentation for CRRC in summer 2018, Vossloh presented both the range of its product portfolio and its potential for development to be considerably more future-oriented:

453 The time frame is also presented in a much more optimistic way in Vossloh's internal presentation than compared to the statement provided to the authority. A slide presenting the company's development (p. 668 of the file)

454 CRRC also plans to continue to use the DE12/DE18 platforms, which is pointed out by the parties to the merger themselves (see written statement of 17 February 2020, p. 38). A quote from CRRC's feasibility report regarding the acquisition reads as follows

455 The parties to the merger dispute this and point out that the Vossloh presentation cited by the Bundeskartellamt is a sales document and accordingly presents the company's situation in too positive a light (see written statement of 27 March 2020, p. 78). They also emphasise that this presentation is from 2018 and outdated. The parties to the merger explain

456 The specific information provided by the parties to the merger

does not contradict the Bundeskartellamt's assessment since the Vossloh document used by the Bundeskartellamt

In addition, it is not least DB's HELMS Project – to which the parties to the merger themselves refer elsewhere (see written statement of 27 March 2020, p. 61) – which shows that such a configuration can be possible even in an existing locomotive where space is restricted and which has been designed to be exclusively powered by diesel without any additional traction current batteries. In the context of this project, DB intends to equip old shunters of the 294 series with two smaller diesel aggregates and a traction current battery.

457 In light of the internal documents of Vossloh and CRRC regarding the potential of the DE12/DE18, the submissions of the parties to the merger regarding

do not seem plausible.

458 There are, however, more serious doubts as to the possibility to revive and sell Vossloh's diesel-hydraulic models.

459 Vossloh's changes to the model range carried out in 2015 resulted in a considerable decrease in the number of vehicles sold by the company. With the exception of individual units of the three-axle G6 model which were still delivered in 2017, the production of diesel-

hydraulic locomotives was discontinued in 2016. In this context, the production of the latest G6 and G12/G18 models and the older G1000 and G1206 models was stopped. Subsequently, Vossloh merely offered the new diesel-hydraulic DE12/DE18 models.

460 Especially the three-axle G6 locomotive addresses a different market segment than the remaining DE12/DE18 locomotives. The G6 is less powerful and lighter and addresses customers with different needs than the comparatively heavy and powerful DE12/DE18 locomotives.

461 The parties to the merger firmly dispute

462 The Bundeskartellamt has not carried out extensive investigations regarding the future sales potential of diesel-hydraulic locomotives. However, the Bundeskartellamt still considers it possible that, in general, Vossloh's G6 and G12/G18 platforms could again be put on the market if the future owner were to make the investments which have become necessary for adjustments in the meantime and once again certify the vehicles.

463 This assessment of the Bundeskartellamt can also be found in CRRC's document "MID Project – Report on Feasibility Study" dated July 2019 in which the company

In section it reads (pp. 1108 f. of the file; translation provided by CRRC):

464 This illustrates that the sales possibilities for Vossloh's diesel-hydraulic models are likely to decrease in the future

To the extent that the parties to the merger raise the objection that the text cited also assumes that the DE12/DE18 is the main product although by now it has become the only product, this conceals the fact that, for one thing, at the time the document cited was drawn up by CRRC the production of the diesel-hydraulic models had been discontinued and the DE12/DE18 had already been the only product then.

For another, CRRC states This contradicts the assertion made by the parties to the merger that the demand for diesel-hydraulic locomotives has completely dried out.

465 Nevertheless, the Bundeskartellamt is not absolutely convinced that the demand for diesel-hydraulic locomotives is still sufficiently strong. This is suggested by individual pieces of information provided by buyers hoping that the merger will boost innovation in terms of alternative drive technology. And this is also underscored by the fact that Voith, a key manufacturer, no longer considers its diesel-hydraulic drives to be its main product.

466 What is even more noteworthy is the fact that since 2014 Vossloh has been lagging behind other manufacturers in terms of innovations in the area of drive technology. Alstom, Toshiba and Stadler already have fully-developed products with hybrid and/or dual-mode drive technology on the market or are developing such vehicles in view of existing major contracts. With its Prima H3 locomotive, for example, Alstom offers a market-ready diesel locomotive, the Prima H4 is a market-ready dual-mode model. Toshiba is at an advanced R&D stage regarding the development of a hybrid locomotive. Stadler is currently developing a new shunter platform which is also supposed to include hybrid or dual-mode drives in view of the VR Group order. However, the locomotives actually ordered by VR Group merely require modern low-emission diesel motors. Gmeinder also already offers a hybrid locomotive, which also holds true for CZ Loko. In addition, the parties to the merger point out that CZ Loko presented various new hybrid and dual-mode models only a few days ago (see written statement of 27 March 2020, p. 82).

467 The lack of products with hybrid and/or dual-mode drive has resulted in the fact that Vossloh has not been able to participate in several larger tender procedures in the past few years. For example, Vossloh did not have a suitable vehicle for SBB’s dual-mode tender procedure in 2015 with regard to which Alstom was awarded the contract regarding the provision of 47 Prima H4 locomotives. For DB’s contract awarded to Toshiba regarding the provision of 100 hybrid locomotives Vossloh had no suitable product in its range either (see written statement of 17 February 2020, p. 17).

468 With regard to Vossloh’s deficiencies in terms of research and development, it is to be noted that the company has so far not taken up any such development projects.

. In 2018, Vossloh nevertheless presented a plug-in hybrid version of the DE18 model at the Innotrans. The company's intention to offer innovative drive solutions is clearly recognisable.

469 In the meeting on 28 January 2020, the company outlined that since 2014

The development of such vehicles required very considerable investments.

470 The costs expected by the market participants for the development of these two new drive technologies have already been outlined under B.II.2.d above (development of market volume and innovations). For the development of a hybrid drive, the average costs amounted to EUR 10,125,000, the median value was EUR 4,000,000; for a dual-mode locomotive, the companies surveyed expected the costs to reach EUR 13,219,231 on average, the median value of EUR 6,000,000 was considerably lower also in this regard. In both cases, the estimated time required was around 36 months.

471 Vossloh's estimates regarding the necessary investments were in both cases significantly higher than those of the other market participants. This is once again pointed out by the parties to the merger in their written statement of 17 February 2020 by referencing development costs of EUR million for the necessary new construction of a hybrid locomotive – which is significantly higher than the number provided in their response to the request for information dated 3 December 2019 (see written statement of 17 February 2020, p. 18). This statement stands in stark contrast to the assessments provided by Vossloh and CRRC regarding the suitability of the DE12/DE18 platform for the development of a hybrid locomotive as already outlined above (see para. 451 ff.) and to the development costs considered realistic by competitors. This even applies when taking into account the particularity that in contrast to smaller companies the large rolling stock manufacturers usually predict the development costs to be higher. Even if the higher costs stated by Stadler, Bombardier and Toshiba are considered separately, this results in average development costs of EUR million for a hybrid drive and EUR million for a dual-mode drive (the latter also including Alstom). The numbers provided by Vossloh were in both cases still substantially higher. Based on the information provided by Vossloh in response to the information request dated 3 December 2019, the respective costs were [70-80]% and [30-40]% above the numbers provided by competitors.

472 The failure to invest in new technologies seems closely connected to Vossloh AG’s decision to sell Vossloh. Vossloh would indeed be capable of producing corresponding innovations. In its document titled “MID Project – Report on Feasibility Study” (pp. 1099 ff. of the file, in the following: feasibility study) CRRC writes the following about Vossloh on p. 1109 of the file:

473 When forecasting the extent to which the competitive gap between Vossloh and its competitors can be reduced, it is to be taken into account, however, that they can bring their innovative products to the market much earlier than Vossloh. This is rightly pointed out by the parties to the merger in their written statement of 27 March 2020 (p. 83). It will require considerable efforts on Vossloh’s part to catch up on the advantage created in this way since this gives the new competitors – especially Alstom and Stadler –the possibility to meanwhile demonstrate the capabilities of their vehicles and thus to convince new customers of their products.

474 The fact that several major contracts have been recently awarded does not, however, result in the situation that the market structure is already determined and Vossloh cannot secure any further orders. There are two crucial reasons for this: First, the contracts already awarded constitute only part of the market volume. Second, these contracts relate to replacement procurements made by large state-owned railway companies, which increase the market volume; they will presumably not be the last contracts awarded during the forecast period. The Bundeskartellamt expects that the market volume will increase during the forecast period compared to the past five years (for details see B.II.2.d).

475 With regard to the major contracts, it is first to be noted that all three contracting entities – SBB (awarded to Alstom), DB (awarded to Toshiba) and VR Group (awarded to Stadler) – are former state-owned railway companies replacing their outdated fleets. All vehicles meet new emission standards. The orders placed by SBB and DB also regard modern dual-mode and/or hybrid locomotives. Ultimately, all of these orders are a manifestation of the technology leap which is currently taking place: Various state-owned railway companies

have taken the increasing availability of the next-generation drive technology as a reason to replace their outdated shunter fleets.

476 The orders placed by SBB, DB (hybrid locomotive) and VR Group will indeed account for a substantial part of the deliveries to be made up until 2025 but they nevertheless cover only a limited part of the market volume so that Vossloh will still have the possibility to submit bids in tender procedures after regaining its competitiveness in the next few years. DB's currently ongoing tender procedure regarding dual-mode locomotives shows by way of example that with the three major contracts already awarded there is still some cake left to be shared (see section B.II.2.d regarding the development of the market volume).

477 There are, however, doubts regarding the extent to which Vossloh can be able to compensate for the competitive advantages enjoyed by the new competitors. They will still be able to exploit Vossloh's weakness in the next few years in order to expand their market position. Denying this will cause considerable difficulties for Vossloh.

478 In this regard, it is not so much the mere number of contracts still to be awarded that is the problem but rather the fact that Vossloh has to compete with new competitors which can carry out their actions from a secure position.

(3) Vossloh's access to customers

479 Vossloh has had long-standing strong business connections with industrial customers, which provides the company with particularly good access to buyers.

480 With regard to the new market participants Toshiba and Stadler, no other contracts relating to their vehicles are known to have been concluded, especially not in the industrial area. This may possibly change once the vehicles of Toshiba and Stadler have been fully developed. However, acquiring further orders does apparently not happen automatically as can be seen with regard to Voith, which was not able to attract follow-up customers in this important customer group. After having completed the DB order, the company exited the market again. According to sources that are publicly available, Alstom has not yet received a single follow-up order for its larger Prima H4 model in addition to SBB's major contract. The parties to the merger correctly point out that Alstom was indeed able to secure sales of its smaller Prima H3 model (see written statement of 27 March 2020, p. 86). However, in terms of numbers these sales are still significantly below Vossloh's sales.

481 The difficulties that can be observed with regard to Voith and Alstom trying to sell locomotives to industrial customers and private railway operators together with Vossloh's

high sales figures in this area suggest that Vossloh has particularly good access to customers.

482 This was ultimately also reflected in the buyer survey with regard to the question as to the suppliers' suitability; Vossloh's results were clearly the best. Reference is made to the results of the survey already outlined under B.II.2.a.dd(2) above.

483 However, it rather seems to be a question of time before Alstom, Stadler and possibly also Toshiba at least generally constitute an alternative source for buyers due to their reference projects. In addition, Gmeinder has also managed to expand its market position in the past few years. However, Vossloh's long-standing customer relations will, in the future, provide advantages for the company also in this area. Nevertheless, the competitors' lead in terms of developing innovative products has an adverse effect on Vossloh with the result that in the future it is to be expected that Vossloh will have to deal with stronger competition also in the area of industrial customers.

(4) Overall assessment and scenarios

484 Altogether, Vossloh's market share will be under pressure in the next few years. Due to its established market position the company also has strengths, however; competitors will first have to work hard for many years to also acquire these strengths. Nevertheless, it cannot be ignored that Vossloh has not received any funds for investments from its parent company for many years.

485 These basic conditions make it more difficult to forecast Vossloh's future market position without the merger. In view of the dynamic basic situation, the Bundeskartellamt considers it necessary for determining the merger effects to form several scenarios which may occur depending on the development of important factors. In principle, four scenarios (bottom scenario, lower-middle scenario, upper-middle scenario, top scenario) are conceivable:

486 In the bottom scenario with the lowest market shares, the Bundeskartellamt assumes that Vossloh AG will not be able to sell the company in the mid-term and the parent company will decide to discontinue Vossloh's business operations. In this scenario it would be conceivable that Vossloh's market share will drop to zero in roughly three years.

487 An even quicker discontinuation of business operations is, however, not deemed realistic by the Bundeskartellamt. The reasons for this are first, the investments made in the new

plant in Kiel, which took up production only two years ago, and second,

operations will have to be continued at least until the ongoing Akiem order regarding 44 locomotives has been completed since Vossloh has already rendered significant preliminary work in this regard.

488 In the lower-middle scenario, the Bundeskartellamt again assumes that Vossloh AG will not manage to sell Vossloh but, deviating from the bottom scenario, it will decide to continue Vossloh's business activities without, however, providing Vossloh with sufficient funds during the forecast period to secure its future competitiveness.

489 In this scenario, the Bundeskartellamt assumes that Vossloh's market share will slowly decrease over the years. It would slowly lose its competitiveness; this process could be accelerated by high-performance competing products established in the market. It thus has to be taken into account that without the merger CRRC would also compete with Vossloh in addition to Alstom, Toshiba and Stadler. This is also pointed out by the parties to the merger (see written statement of 17 February 2020, p. 17).

490 During the forecast period, it would have to be expected that the market share will drop by half within ten years and would then amount to 20%. The parties to the merger are of the opinion that a market share of 20% is, in any case, still significantly overestimated (see written statement of 27 March 2020, pp. 89 f.). The question whether in ten years the market share will be 10% as the parties to the merger believe or rather 20% as the Bundeskartellamt deems to be correct can remain unanswered since ultimately – as will still be shown – this is irrelevant (for details see B.II.2.h).

491 The Bundeskartellamt bases the upper-middle scenario on Vossloh AG managing to quickly sell the company or, with Vossloh remaining a group company, fundamentally changing its strategy in the course of which it will provide the subsidiary with sufficient funds to completely restore its competitiveness. This can happen in all situations in which the company is acquired by an established railway technology company or financial investor or in which its business is continued by Vossloh AG under different circumstances.

492 In this case, the Bundeskartellamt considers it possible that Vossloh could remedy its technological shortfalls and offer competitive products. However, some doubts remain as to whether this can be fully achieved. In view of the competitors that have recently entered the market (including CRRC), it is to be expected that, in any case, market shares exceeding 50% are a thing of the past.

493 The Bundeskartellamt considers it possible that Vossloh could reach a market position of around 40%, which is the average share achieved by the company over the past three years and thus since it changed its product range. This cannot be forecast with certainty, however. In this regard, the increased competitive pressure with which Vossloh will have to deal after Alstom, Toshiba and Stadler enter the market takes effect.

494 In this respect, it is to be expected that, in any case, during a transition period of two to four years, Vossloh's market shares would drop further before the consequences of the strategy change presumed in this scenario become visible. The parties to the merger correctly point out that the consequences of the failure to invest in the past years would become apparent only with a delay of several years due to the lengthy period between placing an order and delivering a product ("delayed effects" written statement of 17 February 2020, p. 17). Similarly, a change in strategy on which the upper-middle scenario is based would be reflected in increased delivery numbers only in several years' time. This effect can also be seen in the tender analysis carried out by the Bundeskartellamt (see B.II.2.a.dd(1)). Vossloh could, however, once again aggressively compete with other companies and offer innovative products from the moment the strategy has been changed. However, the delay between placing an order and delivering a product is to be taken into account in this respect as well, meaning that Vossloh – just like its competitors – would only be able to offer products that still have to be developed in this time period.

495 The question as to whether Vossloh will, from its current starting point, manage to fully catch up with these companies in terms of their competitive advantage and decimate the market positions of the new competitors cannot be forecast by the Bundeskartellamt with the necessary degree of certainty at this time.

496 In view of this, it has to be expected to the advantage of the parties in the upper-middle scenario that a market share of merely 30% or perhaps even less may possibly be reached.

497 As the top scenario, the Bundeskartellamt assumes that the situation will develop similarly to the upper-middle scenario, meaning that Vossloh will regain its full competitiveness, but additionally will win DB's tender procedure for 200 dual-mode locomotives,

498 In this case, due to DB's dual-mode locomotive contract the market volume would increase by another 40 locomotives per year over a period of five years. Therefore, due to the demand from state-owned railway companies, the market volume would more than double compared to the past five years. Vossloh's market share would temporarily increase due to the contract awarded by DB.

499 After completing the order, Vossloh's market share would be expected to drop again and roughly reach the value of the upper-middle scenario.

cc. Forecast of CRRC's market position without the merger

500 In light of the orders already secured, the Bundeskartellamt is convinced that CRRC will manage to enter the market in the forecast period. It can be expected that the company will be able to establish a noticeable market position even without the merger. However, not even when taking into account CRRC's enormous resources and determination can it be expected that, being a newcomer, the company will be able to prevail against established shunter providers such as Vossloh, Alstom and Stadler to the effect that its scope of action could no longer be controlled by competition. Given the existing conditions, it can, in the Bundeskartellamt's view, be ruled out that CRRC could reach a dominant market position without the merger during the forecast period.

501 When forecasting CRRC's market position, the Bundeskartellamt fully took into account the special starting conditions and CRRC's position. As pointed out by many competitors, the actions of specifically protected state-owned companies from centrally controlled economies have to be taken into account when forecasting their market position. In terms of merger control, the expected pricing behaviour is particularly important – as already outlined above (for details see B.II.2.g.aa(2)).

502 The parties to the merger are of the opinion that the Bundeskartellamt fails to see that CRRC's efforts to enter the market are primarily aimed at markets other than shunter markets (see written statement of 27 March 2020, p. 107). They point out that the strategic goal is rather to manufacture multiple units, passenger carriages and high-speed trains.

503 In their view, the fact that CRRC is likely to pursue further goals based on the acquisition is irrelevant for assessing the shunter market in question since based on its previous market behaviour CRRC has – irrespective of the merger – endeavoured to acquire business also in the shunter market and has already been awarded two smaller contracts with state-owned railway companies.

504 The actual endeavours to enter the market are discussed in the following (see B.II.2.g.cc(1)) before addressing CRRC's technical skills (see B.II.2.g.cc(2)) and its market behaviour (see B.II.2.g.cc(3)). Lastly, all relevant facts are assessed and CRRC's expected market position is forecast (see B.II.2.g.cc(4)). As a result, the Bundeskartellamt assumes that without the merger CRRC is expected to reach a market position of roughly 10% (bottom scenario),

which would, however, temporarily increase considerably if CRRC were successful in DB's tender procedure for a dual-mode locomotive (top scenario).

(1) Efforts to enter the market

505 CRRC will manage to enter the shunter market and establish a noticeable market position even without the merger.

506 Prior to the merger, the Acquirer has already undertaken convincing, intensive efforts to achieve successes in the shunter market (and in other rolling stock markets) in the EEA. CRRC has already concluded two contracts regarding the provision of shunters. Although the vehicles have not yet been delivered, it can nevertheless be assumed that in the next two years turnover will be generated in the relevant market.

507 For instance, in summer 2018, CRRC received an order from Deutsche Bahn regarding the provision of shunters with dual mode and hybrid battery drive (see p. 236 of the file.). The ocomotives manufactured in the context of this order and intended for the suburban trains in Hamburg have meanwhile been delivered to Hamburg and are currently at an advanced stage of the certification process.

508 In addition, the Hungarian company Rail Cargo Hungaria, a subsidiary of Österreichische Bundesbahn (ÖBB), placed an order regarding the provision of two hybrid shunters with CRRC. The order also includes two electric hybrid shunters with last-mile modules.

509 Therefore, CRRC has already received shunter orders in the relevant market, which are about to be delivered. CRRC has thus already managed to enter the market.

510 These orders are part of CRRC's manifold and intensive marketing efforts made in the past few years. The company has established a branch in Vienna, which is actively looking for business in Europe. According to the view of individual market participants, CRRC's efforts have increased over the past few years. In this respect, the following tender procedures or sales negotiations are to be mentioned in particular:

511 In 2019, the Austrian company Westbahn, a joint venture formed by the Austrian industrialist Hans Peter Haselsteiner and SNCF, negotiated the procurement of 15 new electric double-decker multiple units for the train route Vienna-Salzburg. In the end, Stadler prevailed against CRRC. This bidding contest was special since the new vehicles were intended to replace identically constructed but slightly older vehicles produced by Stadler and used by Westbahn. Those vehicles had been acquired at unfavourable financing conditions

customary at that time and were supposed to be sold to DB to be used in Germany. In this context, an interruption-free transition from old to new trains was important as was a sophisticated maintenance concept since the trains were required to have a very high availability rate. Lastly, the old trains had to be certified in Germany, which put Stadler in a favourable position since – as the manufacturer – the company was able to provide better support in this regard.

512 In 2016, CRRC managed to secure an order from the Czech railway operator LeoExpress regarding three single-deck electric multiple units. The first of these three trains reached the Czech Republic in September 2019. The vehicles still have to be certified.

513 Outside the relevant market, CRRC also received several multiple unit orders in North Macedonia. CRRC already received the order regarding the provision of two electric and four diesel-powered multiple units in June 2014. The vehicles were finished in 2015. According to the press, the purchase price was EUR 25 million. In 2016, CRRC was also instructed to deliver four electric mainline locomotives for freight traffic. According to the press, the purchase price was EUR 8 million, which is roughly EUR 2 million per unit. The first of these four locomotives was delivered in 2019 and is being tested. These locomotives are supposed to be the first to meet the TSI requirements.

514 In January 2017, CRRC delivered two heavy electric locomotives to an industrial railway in Serbia.

515 CRRC is also actively seeking business in the area of trams. In December 2019, for instance, the company was awarded a contract regarding 18 trams in Porto. CRRC also submitted a bid for light rail services in Lisbon but lost to a consortium consisting of Stadler and Siemens.

516 The DB order and the vehicles already delivered to other rolling stock markets in the EEA and Switzerland indicate that CRRC will soon deliver shunters in the relevant market. In addition, the electric locomotive for Serbia is supposed to comply with the European TSI and thus meet the key requirements for certification. CRRC is apparently able to manufacture vehicles that satisfy European certification requirements. The shunters for the light rail services in Hamburg are soon likely to prove that the company manages to successfully conclude certification processes in Germany. Since, in addition to the Swiss market, the German market is known to be the market with the highest standards in Europe due to its manifold requirements established over time, it can be expected that CRRC has meanwhile acquired the ability to produce vehicles for all European countries.

517 The buyer survey has shown that, on average, they expect CRRC's market share to increase steadily. The buyers that have responded to this question expect that from 2023

to 2025 CRRC will on average reach a market share of 7.6%; the median value is 5%. From 2026 to 2028, the buyers expect that CRRC will on average reach a market share of 13.8%; the median value is 10%. Irrespective of the exact analysis of this information, which will be carried out below (see B.II.2.g.cc), this nevertheless shows that many buyers also expect that CRRC will manage to enter the market during the forecast period and that the company will be able to establish a noticeable market position.

518 The reasons provided for the assessments regarding CRRC's expected market shares are interesting in this context. Some buyers admit that the information provided is a mere estimate or even assumption. One railway company based its assessment on the very good quality and stability visible in CRRC's processes. Even many buyers that consider the strict certification requirements to be critical for CRRC expect the company's market shares to amount to ≥ 5% in the periods from 2023-2025 and 2026-2028. Altogether, the information provided by the buyers thus seems plausible.

(2) Technical skills

519 There are no doubts that CRRC has the technical skills to manufacture shunters which meet the quality standards of European buyers.

520 This is already shown by DB awarding the contract for the so-called AZ locomotives to CRRC. These shunters are technically sophisticated hybrid and dual-mode locomotives. The German market is regarded as one of the world's leading markets with the highest technical demands not least due to the quality requirements set by DB and the certification requirements. CRRC accepts these challenges and, with a view to the contract awarded, DB is also confident that CRRC will complete the project successfully.

521 In this context, one buyer pointed out that the world's largest high-speed railway network had been established within few years in China. CRRC had provided the vehicles for this and traffic was handled successfully. The buyer was of the opinion that in light of this the company was definitely capable of producing operational shunters. The company simply lacked competences in the certification area and references from Europe.

522 This assessment is also reflected in the responses provided by the other buyers regarding their assessment of CRRC. The companies were asked to provide their assessment in eleven specified and two open categories as to whether they considered CRRC to be better or worse than Vossloh with regard to these criteria. This resulted in a differentiated picture with differences in individual aspects, which indeed seem plausible. To facilitate the evaluation of the responses, average values were calculated based on the response

categories, which have the following meaning: 1 = significantly better, 2 = better, 3 = same, 4 = worse, 5 = significantly worse.

523 CRRC received good ratings in the technical categories relevant in this case. This applies particularly if one bears in mind that the question was aimed at comparing CRRC and Vossloh, which is still the market leader mentioned as preferred supplier by almost two thirds of the companies (for more details see B.II.2.a.dd(2)).

524 The companies surveyed even confirmed that CRRC was slightly better than Vossloh regarding the technical criteria (2.8). In the categories operating convenience (3.18) and safety and security (3.12) CRRC performed only slightly worse than Vossloh. The ratings were noticeably worse in the categories durability (3.56) and reliability (3.31); the ratings achieved here are already close to the reference value 4.0 for the response "worse" but are still close to Vossloh.

525 For the sake of completeness, the results regarding the other categories are also listed here: The commercial ranking resulted in a mixed picture. The companies surveyed consider CRRC to be slightly cheaper in terms of acquisition costs (2.29) and expect the ongoing costs for consumption and maintenance to be only slightly higher (3.06). With regard to the financing conditions, the companies surveyed consider CRRC to be slightly better (2.8).

526 CRRC's ranking was comparatively weak in the categories relating to CRRC's previous activities in the relevant market. For example, in the category reputation CRRC was awarded the value 3.62, in the category reference projects, the company was given 3.5 points and in the category availability/presence 3.62. In these three categories, the fact that the company has only initiated its market entry takes effect, especially when compared to Vossloh, which enjoys a long-standing tradition and has a large number of delivered vehicles under its belt.

527 Moreover, three companies added further categories important to them to the specified categories. One company stated that with regard to project management CRRC was worse, another company considered the production quality to be worse than Vossloh's quality; another company added that the usability of CRRC's shunters for the purposes of its own business was significantly worse than that of Vossloh's shunters.

528 For the development of CRRC's technological skills the joint ventures established with European railway technology manufacturers mentioned above are also important (see A.I.1). Together with other state-owned (sister) companies, CRRC runs a number of joint ventures that produce a wide range of key rolling stock components and entire trains. The most prominent example of technological cooperation between CRRC and a Western

railway technology manufacturer is the company Bombardier Sifang (Qingdao) Transportation Ltd., which successfully produces the Chinese high-speed train.

529 In the context of these joint ventures, CRRC gains technological knowhow for the production of products at par with Western standards. In their written statement of 11 February 2020, CRRC points out that the products manufactured in the context of these joint ventures (see p. 2199 f. of the file). CRRC states that the companies produce exclusively for the Chinese market and are unable to export their products to the EEA. CRRC also points out that the joint-venture partners are paying particular attention to ensure that the knowhow they provide is not used for exports by CRRC since this knowhow is contractually and legally protected.

530 This information applies only to a limited extent. It is true that in order to use components in rolling stock in the EEA it is usually required that the production process be certified by the customer (or rather key customers such as DB or SNCF) and certification be granted by the state railway authority, the EBA in Germany. These are not insurmountable obstacles, however. In its written statement of 17 February 2020, CRRC itself points out that the company managed to have its Zhouzhou plant qualified as a Q1 supplier for DB locomotives; in addition to CRRC, merely Siemens and Alstom have been given this status (see written statement of 17 February 2020, p. 25). According to the Bundeskartellamt's investigations, some production facilities of component suppliers in China, such as in the area of manufacturing railcar bodies, have already obtained the necessary certification. It takes roughly to receive this certification.

531 Against this backdrop, it is, contrary to CRRC's account, possible to obtain the necessary certification from (major) customers. Moreover, setting this requirement is up to the customer and, if necessary, the customer can at any time choose not to demand certification.

532 In addition, there is the time and money required for having the EBA or any other national railway authorities certify new components. This time and money typically have to be put in by every manufacturer that wishes to sell railway technology components in the EEA or Switzerland. Certification can indeed be cumbersome. However, this is not an insurmountable obstacle, especially not for a company with extensive R&D capacities as CRRC.

533 Due to its wide product range and the large fleet of vehicles it has delivered, CRRC also has extensive knowhow. This means, for one thing, that CRRC already has wide knowledge regarding the design and continuous use of components. This especially also includes areas in which Vossloh has no expertise, such as with regard to the requirements for developing high-voltage and heavy-current components usually used in railway operation. Due to the large number of vehicles produced, CRRC has also gained wide experience in how well the chosen designs work in practice.

534 This shows that CRRC already is a company with the relevant technological capabilities that is able to manufacture products for sale in the EEA and Switzerland. This is confirmed by the market participants' perception that CRRC is a technologically capable company. The deficiencies observed particularly concern CRRC's reputation – durability, reliability, reputation and reference projects – and can be remedied over the years.

(3) Market behaviour

535 Over the past years, CRRC has received some orders in foreign (also European) rolling stock markets and in this context occasionally offered its products at very low prices (see B.II.2.g.cc(3)(i)). Its willingness to rely on long-term low-price strategies in order to achieve the desired market penetration in the EEA is illustrated – also with regard to vehicle (components) manufacturing – by a number of anti-dumping decisions rendered against Chinese state-owned companies (and in this way the same group) by the EU COM (see B.II.2.g.cc(3)(ii)). Lastly, CRRC has the necessary financial means to maintain a low-price strategy for a longer period of time since it can rely on the support provided by the Chinese state (see B.II.2.g.cc(3)(iv)).

(i) Actual pricing behaviour

536 Cheap prices often played an important role in the projects for which CRRC submitted a bid in past years.

537 The Bundeskartellamt has been provided with information from several competitors regarding the prices offered by CRRC in the context of some projects, which have become known to them during the tender procedure; however, these prices were always stated in relation to the competitor's own prices. In order not to disclose the prices offered by the competitors in the tender procedures, the specific price differences regarding the individual projects cannot be mentioned. However, the competitors have pointed out consistently that the prices offered by CRRC were 25% to 40% cheaper in each case, and in some cases, the company also took on financial risks.

538 The parties to the merger partly deny some of the information provided by the competitors. They state that with regard to some projects the prices actually did not differ considerably from the offers made by the established providers in similar tender procedures (see written statement of 27 March 2020, p. 108). In their view, the information provided is partly incorrect. They also point out that CRRC is currently forced to offer attractive overall conditions since buyers are still under pressure to provide reasons for placing an order with CRRC (see written statement of 27 March 2020, p. 109).

539 With regard to the two shunters for the Hungarian subsidiary of ÖBB, Rail Cargo Hungaria, (in the following: RCH), RCH communicated that the vehicles are developed, produced and certified by CRRC at its own expense (see p. 2058 of the file). The vehicles are leased to RCH in the context of a leasing agreement for a term of four years. RCH is then free to decide whether it would like to carry on using the vehicles. Competitors have pointed out that CRRC has decided not to amortise the development and approval costs incurred in the context of this order and also bears the full risk associated with reselling the locomotives.

540 With regard to the shunters for Hamburg and Berlin DB ordered from CRRC in 2018, the price per unit mentioned in press reports is EUR 2.5 million. The locomotives are able to operate both in dual and diesel hybrid mode. Considering the locomotive’s complicated technology and the very small number of eight vehicles, this offer is also very cheap. The contract was awarded to CRRC in negotiated procedures after no provider had submitted a bid in a Europe-wide tender procedure.

541 The two heavy electric locomotives for the Serbian energy supplier Elektroprivreda Srbije, the first of which was delivered in 2017, cost EUR 2.2 million per unit according to press reports. Based on the information provided by the buyers, the average price for a mainline locomotive ranges between three and four million euros.

542 These examples of offering cheaper prices are not called into question by the parties to the merger.

543 According to press reports, the four Macedonian electric locomotives ordered by the Macedonian railway company MŽ Transport in 2017, the first of which was delivered for testing purposes in May 2019, cost merely EUR 2.0 million per unit. The parties to the merger point out that Siemens offers its so-called Smartron locomotive for EUR 2.5 million per unit. The Smartron is slightly more powerful and better equipped than the CRRC locomotive (see written statement of 27 March 2020, p. 109). However, the Smartron is a simplified locomotive model the equipment of which cannot be changed by the customer in any way and which has been certified for use within Germany only. The locomotive can be ordered online based on a standard contract. Siemens expressly advertises this vehicle as

a particularly cost-efficient locomotive. These particularities of the Smartron make it difficult to achieve comparability. It is true, however, that the Smartron is somewhat more powerful and faster than the CRRC locomotive for MŽ Transport. The price for the MŽ Transport locomotive is still 20% below the price level of the Siemens locomotive. It cannot be ruled out that it could still be cheaper than the standard market price.

544 With regard to the tender procedure relating to multiple units for LeoExpress, which CRRC won in 2017, the parties to the merger state that their price – for one individual unit – was roughly the same as the prices charged by other providers. The prices are in fact comparable with the competitors' prices mentioned in the press with regard to various other projects. In this regard, it is noteworthy that merely three vehicles were ordered; this quantity is considerably smaller than the quantity ordered in the projects used for comparison. This is particularly relevant with regard to the possibility of amortising development and certification costs. An option for numerous additional vehicles has been agreed, however.

545 In September 2019, the Romanian railway reform authority announced that CRRC had offered the cheapest price in a consortium with a Turkish company. In this tender procedure concerning 40 electrically powered multiple units the price criterion was weighted at 80%. CRRC was given 89 points, Alstom 78.69 and Siemens 78.47. In view of the great importance attached to the price in the evaluation, CRRC must have made a far cheaper offer. According to newspaper reports, both Siemens and Alstom have appealed the decision.

546 CRRC has also offered consistently low prices in several large tender procedures for underground trains, which CRRC has won in the USA in the past few years. Accordingly, the company was awarded two contracts in Boston regarding 284 (2014) and another 120 metro carriages (2016), a major contract in Chicago regarding the provision of 846 vehicles in 2016 and a smaller contract in Los Angeles regarding the provision of 282 vehicles, also in 2017.

547 The offers made by Bombardier – the most expensive bidder – relating to both contracts in Boston were more than twice as expensive (more than US$ 3 million per vehicle). Compared to the second lowest bidder Hyundai Rotem (approx. EUR 2.54 million), CRRC's offer amounting to US$ 2.0 million was still 20% cheaper. With regard to the major contract for the underground in Chicago, a Western railway manufacturer offered a price of US$ 1.82 million per vehicle and was thus at the Boston price level; however, CRRC still undercut the manufacturer by roughly 15% by offering a price of US$ 1.55 million. In 2016, CRRC won the tender procedure for 120 trains in Boston since it was the only bidder. In the tender procedure for the considerably smaller contract issued in Los Angeles in the same year

CRRC significantly raised its price to US$ 2.29 million but was nevertheless awarded the contract since it was still roughly 4% cheaper.

548 The parties to the merger rightly point out that in 2019 Stadler and not CRRC won the contract for 354 vehicles in Atlanta. However, the parties to the merger fail to consider the fact – which is crucial for evaluating their argument that CRRC does not pursue a low-price strategy – that CRRC submitted the lowest bid also in this tender procedure. The company was not awarded the contract for other reasons and despite the procurement law dispute initiated by CRRC.

549 The parties to the merger also point out that this list does not include a major contract for underground trains in New York involving up to 1,612 vehicles awarded to Kawasaki in 2018. CRRC had participated in this tender procedure in a consortium with Bombardier, which according to press reports had been excluded for other reasons.

550 Lastly, the parties to the merger list a vehicle contract in San Diego, which was awarded to Siemens in the middle of 2019. This is a smaller contract including 25 fixed orders and an option relating to 60 additional vehicles.

551 Even if the Bundeskartellamt's original assumption that no other manufacturer has managed to secure a contract for metros in the USA since CRRC's market entry does thus not apply, two things are still striking: First, CRRC's market entry has led to a significant drop in price levels. In this regard, CRRC reacted to a very large difference between its own prices and those of its competitors in the tender procedure in Boston in 2014 and raised its prices. Therefore, pursuing a low-price strategy does not seem to be an end in itself for CRRC. However, the company raised its prices only to the extent that it still won a large part of the tender procedures. Second, several competitors are of the opinion that CRRC's prices did not cover the costs. Even CRRC is subject to the strict "Buy American" rules, which already applied at the time and which resulted in significant wage cost increases for CRRC since the company – just like its competitors – had to produce the vehicles in the USA. In order to process the orders, CRRC had to build factories in the USA, develop corresponding vehicles and have them certified. In view of the rather similar cost structures, it is in fact unclear how CRRC was able to present these prices which were considerably below the base level.

552 Ultimately, CRRC's entering the market in the US metro sector has resulted in the fact that the established market participants have lost numerous tender procedures to CRRC in the past five years. This shows the potentially disruptive effect CRRC's entry into the railway technology markets may have. For CRRC's low-price strategy to be successful, it is not necessary that CRRC is significantly cheaper in absolute terms but it is sufficient for CRRC

to correctly estimate the competitors' cost structures and their pricing behaviour – in a commercially reasonable way – in order to clearly undercut their offers in its own bid by five to ten percent.

553 The price differences are also reported to have been great in the metro tender procedure in Lisbon, which Stadler has recently won.

554 Deutsche Leasing AG also stated in its questionnaire that the difference in prices was huge. In the freight wagon sector, they had already come across the manufacturer CRRC. According to the statement provided by Deutsche Leasing AG, production was supposed to be carried out in China taking into account European and German quality standards. The price for the vehicles was clearly – more than 20% – below the offer made by Eastern European manufacturers.

555 The parties to the merger assert that in Europe CRRC is not able to pursue a low-price strategy for procurement law reasons alone since offers with unusually low prices or such based on unlawful state aids must be excluded (see written statement of 27 March 2020, p. 111). However, this argument does not apply for two reasons:

556 First, it also holds true in this case that offering low prices does not have to be an end in itself for CRRC – as already addressed above. On the contrary, it is likely to be worthwhile for CRRC to secure orders with as small a price difference as possible so that the company is awarded the contract by a slim margin. This is suggested by the metro tender procedures in the USA mentioned above. In any case, this behaviour would be rational since it optimises earnings without coming into conflict with achieving the politically planned targets. In light of this, the Bundeskartellamt does not assume that the price difference has to be noticeably large in the long run. Against this background, offers are not expected to be excluded simply due to the massive price difference.

557 Second, it is not realistic that the Chinese cost structures will be analysed in detail during tender procedures due to the tight deadlines applicable in the review proceedings. Nor is it possible for the public procurement tribunals to determine in the ongoing review proceedings whether unlawful aids – which would have to be covered by European state aid law in the first place – have been granted.

558 The safeguards against low-price strategies mentioned by the parties to the merger therefore remain theoretical and are not suited to invalidate the observations regarding the actual market behaviour.

559 CRRC vehemently pursues a strategy to enter the European rolling stock markets. The Acquirer's management chair, Zhou Qinghe, was quoted when signing the contract with the Czech railway operator LeoExpress saying that the European markets were a great

opportunity for Chinese engineering work and that CRRC ZELC intended to invest significant resources in its expansion in Europe (see p. 2096 of the file).

560 The expansion into the European markets exactly corresponds with the objectives set by Chinese central planning. In its “Annex 1: Internationalised operations in the ‘13th five-year period’ – Development plan of CRRC Corporation Limited” CRRC’s currently applicable five-year plan sets out the goal of achieving a growth rate for CRRC’s sales (see p. 1091 of the file), which is deliberately set far above the expected market growth of For this purpose, the five-year plan expressly mentions price competition as current instrument for expanding market shares. For instance, on p. 1092 of the file it reads:

561 This quote sets out CRRC’s strategy in condensed form. Accordingly, the current price competition is not to be understood as an end in itself but it serves to establish a strong market position. This exactly corresponds to the observations made by the competitors with regard to the metro tender procedures in the USA. Further down in the same document, this strategy is outlined in more detail (p. 1094 of the file):

562 Therefore, both the observations made by the competitors and the strategy outlined in CRRC's internal documents point into the same direction: CRRC grants particularly favourable conditions in order to specifically establish and expand its market position.

563 In contrast to the suggestions made by some competitors, assuming these costs and risks does not necessarily have to be an expression of anti-competitive behaviour. On the contrary, in order to enter a market with high entry barriers – as is the case here – it might even be necessary for a new market player to accept initial losses. Especially when it comes to convincing sceptical customers of the quality of the products, it may be necessary for a manufacturer to assume risks itself in order to encourage customers to buy the product. This applies especially to development and certification costs which sceptical customers are unlikely to bear with regard to small contracts as long as they have alternative options. It may also be reasonable to reduce the vehicle's residual value risk usually borne by the customer in order to win first reference projects and establish a reputation. This applies all the more since the possibility to have vehicles successfully certified for the customer is conditio sine qua non for the successful entry into the market. Without qualified references CRRC is not able to participate in several important tender procedures. Prima facie, it thus seems even logical to compensate for the lack of references by offering particularly favourable conditions to customers. Similarly, passing on cost advantages due to lower wage and price levels cannot as such be classified as anti-competitive. This also applies to purchasing more inexpensive parts, which possibly are even manufactured within the group. None of these practices are fundamentally anti-competitive; they are synergies resulting from the merger and generally welcomed by competition law.

564 Depending on the type and extent of loss assumption, this generally justified approach can, however, turn into a prohibited exclusionary strategy if the low prices are specifically used to harm competitors. Such practices are particularly problematic if they are made possible by financial contributions given by a state which in this way intends to support a national champion. Under competition law, there is only a limited number of instruments that can be applied to such subsidies to counter distortions of competition resulting from this. For this purpose, special regulations such as state aid law or the rules on dumping have been created and take priority; public procurement law also plays an important role in this respect. If such instruments are not able to effectively prevent considerable distortions of competition, it is for the legislator to ensure that any necessary changes are made.

565 Whether or not CRRC's pricing strategy runs counter to conduct requirements is ultimately irrelevant for the forecast that is to be made here. In particular, it is not necessary that CRRC's pricing meets the criteria for an exclusionary strategy in order to gain importance in the context of merger control. With regard to the forecast decision made under merger

control it is merely decisive that CRRC is willing to offer buyers low prices in order to expand its market position in the relevant market and to assume the losses possibly associated with this.

(ii) Low-price strategies of the same group in other markets

566 With regard to the question as to whether CRRC is expected to implement a low-price strategy to expand its market position, the large number of anti-dumping decisions rendered by the EU COM up to the recent past must be taken into account.

567 The parties to the merger dispute that anti-dumping decisions against other Chinese state-owned companies allow conclusions to be drawn as to CRRC's future pricing behaviour (see written statement of 27 March 2020, p. 113) since, in their view, the decisions against other Chinese companies cannot be attributed to CRRC. The parties moreover hold that based on dumping prices alone it cannot be concluded that an exclusionary strategy is to be implemented (loc.cit.).

568 It is true that so far no anti-dumping decision has been rendered against CRRC. But the decisions handed down in other areas are relevant in terms of illustrating the capability and willingness of the group to which CRRC belongs to revert to distinct low-price strategies. Such decisions are of circumstantial nature.

569 In the view of the parties to the merger, this scope of attribution is far too ample (see written statement of 27 March 2020, p. 115). They hold that irrespective of the fact that the People's Republic of China holds shares in the companies in question, there is no connection of any kind. This is the decisive aspect, however: The People's Republic of China holds a majority share in CRRC. It is precisely this owner that has proven in a number of previous cases that it is willing and in a position to sell products at dumping prices in the market in order to achieve its goals. There is no apparent reason why CRRC in particular should not enjoy such support. Under German competition law, the dumping practices of other Chinese state-owned companies constitute – unlike CRRC wishes to see it – previous practices of the same company. When assessing the question as to the practices that are to be expected from a company, previous behaviour – especially if the practices are still carried out – is an important indication which is to be included in the context of the forecast.

570 According to an overview provided by the Austrian Ministry for Digital and Economic Affairs, anti-dumping duties are currently levied on 61 product groups from China. In the decisions rendered by the EU COM, protective duties are imposed on specified products; the level of such duties is in many cases determined individually for the companies in question.

571 The anti-dumping duties currently levied on goods from the People's Republic of China especially include the following products:

- Chemical products (such as acesulfame potassium, aspartame, barium carbonate, melamine, monosodium glutamate, sodium cyclamate, sodium gluconate, oxalic acid, peroxosulphates, sulphanilic acid, trickloroisocyanuric acid, tartaric acid, or citric acid),
- Steel and aluminium products (such as concrete reinforcing bars, rolled flat iron products of silicon-electrical steel, cold-rolled flat iron products of stainless steel, hot-rolled flat iron products of iron, and others, cold-rolled flat iron products, aluminium foil, foil and thin strips of aluminium, heavy plates of steel, individual cast iron goods, cables and ropes of steel, pipes of steel, etc. (seamless and welded, also of stainless steel), pipe fittings of iron or steel, etc. (with and without threads), corrosion-resistant steel, organic-coated steel products, wire rod),
- Ironing boards,
- Yarns and fabrics (certain continuous filament glass fibre products, high tenacity yarn of polyesters, woven glass fibre fabric),
- Pallet trucks,
- Ceramic products (tableware and tiles).

572 In particular, additional anti-dumping decisions have been rendered regarding various vehicle parts. These are presented in more detail in the following since they concern areas related to railway technology.

573 Based on the Commission Implementing Regulation (EU) 2019/1693 of 9 October 2019, anti-dumping duties between 50.3% and 66.4% were imposed on imports of steel road wheels for motor vehicles and trailers ("steel wheels") originating in the People's Republic of China into the Union. The main allegation was that the prices or the costs for goods, including raw materials and energy and labour costs, were not the product of free market forces but of state interference due to the government interfering in the Chinese economy as a whole and the steel and automotive industry in particular. The steel industry, the financial sector and the automotive industry were particularly affected by such interference. For the relevant market, the COM ascertained that the dumping margin was 69.4%.

574 Based on the Commission Implementing Regulation (EU) 2019/1379 of 28 August 2019, anti-dumping duties were imposed on imports of bicycles originating in the People's Republic of China. The COM imposed anti-dumping duties between 19.2% and 48.5%. As in all cases, it was ascertained that the state considerably interfered in the market so that the costs for raw materials, energy and labour were not the result of a free market but the outcome of state measures. For example, the raw materials steel, aluminium and rubber,

or their extraction, which are necessary for manufacturing bicycles, were controlled by the state. The average sales price of Chinese imports considerably undercut the prices of EU manufacturers and production capacities in China were not fully used in relation to production volumes.

575 Based on the Commission Implementing Regulation (EU) 2019/73 of 17 January 2019, the EU COM imposed anti-dumping duties on imports of electric bicycles originating in the People's Republic of China. The Commission reached the conclusion that in light of the dumped imports from China the Union's economic sector was not in a position to profitably make use of the growing market for electric bicycles. This considerably injured the Union's economic sector. The prices for Chinese imports were 16% to 43% below those charged by the Union's manufacturers. The dumping margin ranged between 32.8% and 100.3%. The revenue pressure created in this way had a negative effect on the level of production, the stock levels, the capacity, the use of capacity, and employment. The anti-dumping duties imposed ranged between 10.3% and 70.1%.

576 In its Implementing Regulation (EU) 2018/1579 of 18 October 2018, the COM imposed anti-dumping duties on imports of new or retreated pneumatic tyres of rubber used for buses or lorries with a load index exceeding 121 originating in the People's Republic of China. The duties imposed ranged between EUR 42.73 and EUR 61.76 per unit. Due to the imports from China, the Union manufacturers were under considerable pressure, which resulted in reduced production capacities and investments as well as falling employment levels. The imports from China undercut the Union manufacturers' prices considerably and the dumping margin ranged between 56.8% and 106.7%.

577 Based on the Commission Implementing Regulation (EU) 2017/2206 of 29 November 2017, the COM extended an anti-dumping duty on imports of hand pallet trucks (forklifts) and their essential parts, that is chassis and hydraulic systems. It was deemed likely that the People's Republic of China would continue to dump prices. The main facts on which this conclusion is based were the considerable production capacities and production reserves in the People's Republic of China, the export behaviour of exporting manufacturers in other third markets and the attractiveness of the Union market. The average dumping margin was calculated to be 29.2%. As a consequence, anti-dumping duties between 54.1% and 70.8% were imposed.

578 Based on the Commission Implementing Regulation (EU) 2017/109 of 23 January 2017, the COM extended anti-dumping duties on imports of aluminium road wheels ("aluminium wheels") originating from the People's Republic of China. In the COM's view, it was likely that lifting the dumping measures would result in additional significant import volumes at

dumped prices from China. The average dumping margin ranged between 8.9% and 25.9%, which created considerable pressure on the Union market. As a result, the anti-dumping duty rate imposed was 22.3%.

579 These examples of anti-dumping duties in the vehicle sector outlined above show that the People’s Republic of China has partly already pursued low-price strategies in neighbouring sectors for several years, which has led to distorted competition conditions in the EEA. Based on these examples, it can be expected that the willingness to use corresponding means exists also in the railway technology sector if this is necessary to reach the goals set by central planning.

580 Contrary to the view held by the parties to the merger, the Bundeskartellamt does not put dumping on a level with exclusionary strategies (see written statement of 27 March 2020, p. 114). This would in fact be the wrong competition law criterion: With regard to the forecast in the context of merger control, it is not necessary to prove that a company intends to exclude its competitors from the market in order to expand its market position. Instead, the question relevant for the forecast in the context of merger control is just whether the company is expected to show a market behaviour which will lead to a substantial expansion of the company's market shares. The question whether an intention to exclude competitors exists is irrelevant. Consequently, it is not necessary for a relevant low-price strategy to fall below a certain cost level which the competitors can no longer reach. The only aspect that is decisive is that the company in question is expected to implement a pricing strategy which will result in substantial changes to the market conditions.

581 In this regard, it is also to be noted that the typical considerations regarding recoupment in connection with a low-price strategy are not applicable in the context of an acquisition by a state-owned company from a centrally planned economy, as is the case here. It has already been pointed out above that the actions taken by a state-owned company from a centrally planned economy are not exclusively based on the principle of profit maximisation but primarily on reaching the goals set by central planning. In this context, reaching the targets of the plan is maximised and not the profit of the individual business. The requirement that losses incurred due to an exclusionary strategy can be subsequently regained through higher prices can be applied only to a very limited extent to the present situation.

(iii) No differing incentive structure with regard to shunters

582 There are no plausible reasons why especially in the area of shunters CRRC could apply a less aggressive approach than observed in other markets to achieve the envisaged market share.

583 In their written statement of 17 February 2020, the parties to the merger point out that in CRRC's view it would not be reasonable to use production capacities in China for the European market. In their opinion, it is theoretically possible to produce shunters in China . In their written statement of 17 February 2020, the parties to the merger state that the time required to switch their production to shunters would amount to (see written statement of 17 February 2020, p. 43). In addition, they state that CRRC's production capacities for diesel locomotives and shunters are low and for the next five years of these capacities are already used (see written statement of 17 February 2020, pp. 21 f. and 43). They hold that from a commercial point of view, it is therefore not reasonable to use the capacity of the production facilities for shunters instead of mainline locomotives which promise higher margins (see written statement of 17 February 2020, p. 21).

584 In the course of the proceedings, the parties to the merger have provided differing information regarding CRRC's capacities. In their written statement of 27 February 2020, they state that CRRC only theoretically has the capacity to produce a total number of diesel locomotives; a maximum of locomotives could be produced as shunters each year. However, this contradicts the information provided by the company itself in its response to the Bundeskartellamt's request for information of 3 December 2019. In its response CRRC stated that it had the capacities to produce shunters and diesel locomotives. The figures provided at the time referred exclusively to CRRC ZELC and not to the entire group. The figures specified for this part of the company (CRRC ZELC) were subsequently adjusted downwards despite the fact that additional production capacities available at sister companies were included. In response to the Bundeskartellamt's follow-up question asked during the meeting with the parties to the merger, the parties involved stated in their written statement of 17 February 2020 that the units mentioned above applied to the entire group.

585 The Bundeskartellamt checked this statement made by the parties by issuing a request for information on 19 March 2020. In this context, it became clear that CRRC's plant capacity, based on which the parties to the merger tried to establish the lack of appeal of the shunter market, was far from being utilised to the extent specified in the written statement of 17 February 2020. It also became apparent that the actual capacities available at CRRC were considerably below the figures provided by the market research company SCI Verkehr. SCI Verkehr estimates that CRRC's production capacities amount to a total of 3,550 locomotives per year (Dalian: 2,000; Zuhuzhou: 500; Ziyang: 500, Datong: 100; Beijing: 150; Changzhou: 150; Malaysia: 50; Turkey (Ankara): 100; see SCI Verkehr GmbH, Diesel Locomotives - Global Market Trends 2017, p. 194). In reality, all of CRRC's

locomotive plants manufacturing electric and diesel locomotives together have the capacity to produce [1,500 to 2,000] locomotives per year. CRRC's capacity is therefore significantly below the figures expected by the market participants.

586 When calculating the production capacities, the Bundeskartellamt included both the capacities for electric locomotives and the capacities for diesel locomotives. According to the statements provided by the parties to the merger in their response to the request for information of 19 March 2020, adjusting a production facility designed to manufacture electric locomotives to produce diesel locomotives is likely to involve costs of EUR and take . They state that for manufacturing diesel vehicles ventilation is required during commissioning, whereas for manufacturing electric locomotives overhead lines are needed for this purpose. These statements contradict the information provided by Siemens in a telephone call on 27 February 2020. According to this information, Siemens is able to use its production lines for the manufacture of both electric locomotives and diesel locomotives. However, the conversion costs mentioned by the parties to the merger do not correspond to the costs that are claimed to be incurred. Neither the installation of smoke ventilation nor of an overhead line will incur EUR . The information provided by the parties to the merger regarding the adjustment costs seems incorrect.

587 Also according to the information provided by the parties to the merger, switching from diesel-powered mainline locomotives to shunters is possible without great expenses.

588 Based on the answers provided in response to the information request, CRRC's statement that of CRRC's capacities were utilised also turned out to be incorrect.

589 The figures regarding capacity utilisation and order volumes are substantially lower than stated by the parties to the merger. Even based on the greatly reduced capacity figures subsequently provided by CRRC, the capacities used for locomotives at CRRC's plants were only and in 2019. CRRC therefore had massive excess capacities.

590 The deviations are even larger with regard to order volumes. In the entire group, orders for locomotives have been placed with CRRC. Instead of the alleged full use of capacities in the next five years, the company's order volume does not even cover The company indeed points out and still pursues ambitious projects for the expansion of railway traffic in China. This means, however, that the company depends to an essential extent on short-term orders placed by a company that is deeply in debt. CRRC's expectations regarding additional contracts are very tellingly

based on the five-year plan. Since the 13th five-year plan ends this year and the preparations for the next five-year plan, which is to be applied from 2021, are not to begin until September, this does not allow for planning security.

591 The low order volume is consistent with the document “Annex 1: Internationalised operation in the “13th five-year period” – Development plan of CRRC Corporation Limited” provided by CRRC. This document includes an overview of the order volumes of CRRC and its competitors worldwide.

shows that CRRC’s order volume does not even

592 Due to the insufficient workload at numerous plants, CRRC is under great pressure to use its capacities. In their statement of 27 March 2020, the parties to the merger themselves point out – albeit in a different context – that a manufacturer with unused capacities is completely defenceless in terms of the demands made by even small customers since it has to try to ensure a basic workload (see statement of 27 March 2020, p. 64).

593 In such a situation it may be reasonable for a company to also acquire orders that do not cover the overall costs. As long as prices are obtained that are at least higher than the variable costs, such orders still generate margin contributions. Against this background, it may even be commercially reasonable for a company to pursue a low-price strategy because it can minimise its losses in this way.

594 A market economy company would most likely downsize its capacity in such a situation in order to reduce its costs. This is not a necessary consequence with regard to a state-owned company because – as already mentioned several times – maintaining excess capacities can be reasonable for overarching political reasons.

595 In addition, CRRC has been clearly instructed by the Chinese state to move into foreign markets. The corresponding documents are outlined in the following section (for more details see B.II.2.g.cc(3)(iv)). This suggests that CRRC will seize the opportunities that present themselves to generate sales abroad. Therefore, the shunter market, just like any other market, offers CRRC the possibility to prove its abilities.

596 The parties to the merger emphasise that the government’s instruction to develop foreign markets primarily refers to prestigious high-speed trains (see written statement of 27 March 2020, p. 116). This may be correct. But the reverse assumption of the parties to the merger that CRRC therefore has no interest in shunters is incorrect: CRRC’s actual market behaviour already suggests otherwise. The company has not only made every effort to secure traction unit and mainline locomotive orders; it has also accepted two shunter

orders. These contracts are not characterised by especially advantageous terms for CRRC; on the contrary, the company has assumed considerable costs and risks to obtain these orders. The assertion that the shunter market is of no interest to CRRC is already refuted by the company's own behaviour.

597 In its brief statement of 17 April 2020, the Acquirer points out that the documents provided prove that CRRC does not focus on shunters but that Vossloh is merely one element in CRRC's strategy to gain a better foothold in other rolling stock markets in the EEA. In the Acquirer's view, it is therefore alarming that the documents are interpreted exclusively for the purposes of the theory of harm (brief statement of 17 April 2020, pp. 3 f.). This allegation is not convincing, however. For one thing, it cannot be denied that the documents prove that CRRC generally intends to gain a foothold in the European rolling stock market. For another, other internal documents prove – as already outlined elsewhere – that CRRC (also) focuses on the shunter area; for instance, Vossloh's platform for the production of the DE12/18 is in the future supposed to be used to manufacture shunters with diesel hydraulic drive systems, among others. The Bundeskartellamt is also of the opinion that the assessment of the theory of harm with regard to a market in which (potential) horizontal overlaps occur cannot depend on whether an acquirer tries to credibly demonstrate that such acquirer is not interested in this market.

598 To the extent the parties to the merger point out on p. 47 of their written statement of 17 February 2020 that the shunter market is small and that pursuing an exclusionary strategy is not commercially reasonable in such a niche market, they fail to recognise that even if the profits to be gained at a later time may be minor, the costs associated with this are equally low. The other argument that the period until the effects of an exclusionary strategy become visible can be long due to the delay between placing an order and generating the turnover, resulting in the fact that losses would have to be accepted for a period of five to ten years, is not convincing either. The market's slow response is a typical hallmark of all rolling stock markets.

599 Entering a market requires patience – not least illustrated by the example of CRRC – also (but not exclusively) in the shunter market. The costs involved in establishing a market position are ultimately not dependent on the specific rolling stock market: It is true that the absolute figures differ but the ratio between costs and earnings to be gained remains more or less the same so that investing in establishing a market position is similarly profitable for all rolling stock markets. As a result, the willingness to accept losses to establish a market position does not have to be larger or smaller when it comes to shunters than with regard to mainline locomotives, multiple units or high-speed trains.

(iv) Systematic support from the Chinese state

600 The Chinese state provides the funds required by CRRC for its expansion and it also sets ambitious growth objectives regarding the foreign rolling stock markets.

601 In “Annex 1: Internationalised operation in the ‘13th five-year period’ – Development plan of CRRC Corporation Limited” it reads (p. 1074 of the file):

602 The following section regarding the consequences of the industrial strategy “Belt and Road Initiative” for CRRC reads as follows (p. 1075 of the file):

603 In this context, “high-speed train diplomacy” plays an important role in supporting CRRC’s export possibilities based on state diplomacy (p. 1075 of the file):

604 In its five-year plan, CRRC has set ambitious objectives for its business abroad (see p. 1084 of the file). According to this plan, the “international market sales target” to be reached by 2020 ranges between , the international market share of rolling stock is . A considerable amount of the turnover is to be achieved with the help of foreign companies;

605 Especially with regard to locomotives and freight wagons, the five-year plan provides for a massive expansion of the activities abroad. Accordingly, in 2020 already of the turnover is to be achieved with locomotives sold abroad, with regard to freight wagons the number is even (see p. 1085 of the file). In view of the high number of locomotives sold in China, this means that a large number of locomotives are to be sold abroad. Without significant market shares in the EEA such a percentage of sales abroad is not achievable for CRRC. The plan therefore provides for a massive expansion of vehicle sales in the EEA. With regard to the sales of locomotives abroad, the five-year plan sets the following sales targets (p. 1087 of the file):

606 These turnovers are to be achieved in the 13th five-year period predominantly in . For Europe (see pp. 1089 f. of the file), the five-year plan initially provides for only limited orders for CRRC’s own product exports in the amount of each in 2019 and 2020. However, the five-year plan also sets out that through mergers sales in Europe are to reach in 2017, in 2018, in 2019 and in 2020.

607 CRRC will clearly fail to reach these targets. Nevertheless, in light of the targets outlined above, there can be no doubt about CRRC’s determination to enter the European rolling stock markets and to provide the necessary means for this.

(4) Overall assessment and scenarios

608 The Bundeskartellamt assumes that in the next five to ten years CRRC's market position will experience cautious growth.

609 The forecast of CRRC's market position without the merger is subject to fewer uncertainties than the forecast of Vossloh's market position without the merger. This is based on the fact that two extreme market developments seem unrealistic due to external conditions:

610 In view of CRRC's intensive efforts to enter the market and the already awarded contracts regarding the manufacture of locomotives for DB and for RCH, the Bundeskartellamt considers it out of the question that CRRC will stop its attempt to enter the market in the forecast period.

611 In the Bundeskartellamt's view, it is equally out of the question that CRRC could reach a dominant market position based on its own efforts in the forecast period. This would require CRRC's ability to quickly establish an excellent reputation and at the same time to permanently offer significantly cheaper products than its competitors. Although the second prerequisite seems possible, it can, however, be ruled out that without external growth CRRC will be able to establish a sufficiently good reputation in a very short time to the effect that the widespread scepticism among buyers as to the value of CRRC products, which is reflected in the figures relating to durability and reliability above (for more details see B.II.2.g.cc(2)), could be overcome. Due to the long time span between placing orders and delivering shunters, CRRC's relevant vehicles could not attract the attention necessary to convince sceptical market participants and to ensure that a different evaluation is gaining ground in the market until the middle of the forecast period. For customers to be able to provide a reliable evaluation, the new vehicles must have been operated for a sufficiently long time for customers to be able to assess their reliability and durability. For this purpose, the forecast period is not long enough, however; it is impossible for these steps to occur within the next five to ten years.

612 The Bundeskartellamt considers two scenarios to be realistic with regard to CRRC:

613 In the bottom scenario, the Bundeskartellamt assumes that CRRC [is not awarded the contract for the dual mode locomotive.]

614 In this case, the Bundeskartellamt assumes that CRRC will be able to reach a market share of approximately 10% in the next five to ten years. A market position in this range is realistic in view of CRRC's intensive efforts to enter the market. CRRC invests considerable funds

in the market entry. In particular, the company makes sure that customers are able to test CRRC's vehicles without major risks, as is currently the case with regard to RCH. For this purpose, CRRC assumes considerable costs and risks by, for example, taking on development costs and assuming the risk associated with the performance of the investment.

615 CRRC's willingness to accept at least initial losses associated with entering the market and establishing a market position, are a crucial factor in the Bundeskartellamt's forecast that CRRC will manage to reach a stable market position of around 10% in the forecast period.

616 In the view of the parties to the merger, this forecast is speculative (see written statement of 27 March 2020, p. 118) since based on the contracts awarded, the Bundeskartellamt cannot prove how this market share could be reached. As already pointed out before, a forecast relating to future market shares cannot be demonstrated by formal evidence (for more details see B.II.2.d). Contrary to the view of the parties to the merger, the Bundeskartellamt is not required to already prove all contracts on which the future market position will be based to forecast the market position. In this regard, the present market does not differ from other markets with short-term transactions. The Bundeskartellamt has duly established the available facts that can influence CRRC's future market position and has included these facts in its forecast.

617 The Bundeskartellamt's assessment seems all the more realistic against the background that CRRC has meanwhile gained the necessary development and certification knowhow itself. This is pointed out by the parties to the merger themselves (see written statement of 27 March 2020, p. 7).

618 In the top scenario, the Bundeskartellamt considers it conceivable that CRRC [is awarded the contract with DB regarding the dual-mode locomotives.]

619 In this case, the market volume would temporarily increase significantly for five years – as described above (for more details see B.II.2.g.bb(4)). If the sales figures considered to be realistic in the bottom scenario remained unchanged, CRRC could reach a market share of around 30% to 40% due to DB's contract.

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After completion of the order, it can be expected that CRRC's market share will slightly decrease again. Based on the underlying forecast period of five to ten years, it can be assumed that this decrease in CRRC's market share would still occur within the forecast period. The actual percentage of the market share reached in this scenario at the end of the forecast period cannot be estimated realistically. In this regard, it is especially decisive

. This cannot be forecast reliably. The only thing that seems logical is that the market share is then likely to range between 10% and 30%.

h. Effects of the merger (strengthening effects)

621 In the final analysis, the Bundeskartellamt assumes that the requirements for prohibition are not met by the proposed acquisition.

622 In the event of Vossloh's merger with CRRC, some of the scenarios outlined above can no longer occur. Especially the market developments in which Vossloh would continue to suffer competitive losses due to the lack of funds become unrealistic after the merger, since CRRC, like any other buyer, will provide the necessary funds in order to restore Vossloh's competitiveness.

623 Therefore, the bottom scenario and the lower-middle scenario can be excluded with regard to Vossloh's market position. At the same time, all scenarios which after the merger of the parties involved could be conceivably combined with these two unrealistic scenarios can be excluded.

624 Against this background, the objections repeatedly raised by the parties to the merger against the Bundeskartellamt's forecast regarding Vossloh's market position are immaterial (for more details see written statement of 27 March 2020, pp. 6, 88 ff. and 120). It is inconsequential whether Vossloh exits the market in the bottom scenario within three years – as expected by the Bundeskartellamt – or even earlier. It is also irrelevant whether Vossloh's market share in the lower-middle scenario drops to around 20%, as assumed by the Bundeskartellamt, or even further since it is impossible for either scenario to occur in the event of the merger due to the fact that CRRC will provide the necessary funds to restore Vossloh's competitiveness.

625 Since the remaining scenarios differ particularly with regard to the question as to whether DB's tender procedure for the dual mode locomotive will be won

, there are ultimately only two possible combinations left: First, the upper-middle scenario relating to Vossloh together with the bottom scenario relating to CRRC and second, the top scenario relating to Vossloh in combination with the top scenario relating to CRRC.

626 A central aspect of both relevant scenarios relating to Vossloh is that the company will receive sufficient funds after the merger and in this way it will be able to effectively compete again. With regard to CRRC, the two remaining scenarios essentially mean that the company will continue to enter the market on its own and gain a foothold in the market. The only differences that exist are with regard to the question as to whether the DB tender procedure for the dual mode locomotive will be won

627 The combination of the two top scenarios – – would, in comparison to the two remaining scenarios, lead to a stronger market position of the parties involved. In the case of the two top scenarios, the requirements for prohibiting the merger are more likely to be met. In light of this, the combination of the two weaker scenarios – upper-middle scenario relating to Vossloh, bottom scenario relating to CRRC – is decisive for the forecast regarding the merger effects since the prohibition requirements are most likely not to be met with regard to this development. According to the considerations above, the merger project would have to be cleared if the prohibition requirements are not met with regard to one of the realistic market developments. This would most likely become visible in the combination of the two weakest conceivable market developments.

628 In terms of the upper-middle scenario relating to Vossloh, the Bundeskartellamt forecasts to the advantage of the parties involved that the company will regain its competitiveness due to a new owner or a change in strategy at Vossloh AG and in the next five to ten years it will achieve market shares of approximately 30%, or possibly slightly less (see B.II.2.g.bb(4) above).

629 In terms of the bottom scenario relating to CRRC, the Bundeskartellamt forecasts that the company will manage to enter the market by itself but that it will be able to expand its market position only slowly since it first has to establish its own reputation, which takes quite some time in the relevant market. Therefore, the Bundeskartellamt expects the market share of CRRC to reach around 10% without the merger in the next five to ten years.

630 As a side note, it is worth mentioning that the accusation raised by the parties that in this forecast the Bundeskartellamt unfairly based the development of the market shares exclusively on the sales figures to the detriment of the parties involved falls short (see written statement of 27 March 2020, p. 122). The assumption that Vossloh lacks competitiveness is very essentially based on the future order situation of the company since the company's value-based market shares – as mentioned above – are still above the threshold for the assumption of dominance. When making the forecast, the foreseeable

changes in the market position are duly taken into account by the Bundeskartellamt with regard to both parties involved.

aa. Effects of combining resources

631 If both companies merge, it is to be expected in the first place that both market positions are added together. In addition, the expertise and resources of the companies involved are highly complementary. In the Bundeskartellamt's assessment, the complementary technical skills of the parties to the merger will contribute to Vossloh being able to regain its competitiveness.

632 When adding the forecast market positions together, they reach a critical range. In the Bundeskartellamt's view, the parties involved will reach market shares of 40%, or possibly slightly less, in five to ten years after the merger. In this regard, it is to be emphasised that specifying future market shares merely provides a tangible description for the assessment of a number of factors that have gone into the evaluation. They serve as a criterion for the degree of competitiveness expected by the Bundeskartellamt with regard to the companies based on all circumstances that have been included in the forecast.

633 In this respect, the uncertainties associated with the forecast become clear regarding the question as to whether Vossloh's neglect of the past years has permanently damaged its competitiveness or whether it will be possible to remedy the deficits. There is much to suggest that Vossloh will be able to restore its competitiveness. However, the uncertainties described with regard to the forecast of Vossloh's market position without the merger remain, that is that during the phase of weakness, which Vossloh will have to go through in the next two to four years, competitors will be able to establish themselves in the market to an extent which will no longer be possible to correct later. The expectation of the parties involved that without the merger Vossloh will have to exit the market in the short term is, however, immaterial in this context since after the merger Vossloh will once again possess the necessary means to regain its competitive position. This is reflected in the framework conditions for the upper-medium scenario relevant here.

634 This assessment is not changed by the fact that CRRC will be able to contribute complementary technical skills after acquiring Vossloh. It is true that the merger will make it easier to overcome the central difficulties that are currently in the way of increasing the competitiveness of the respective other company. However, doubts remain as to whether this can be sufficient to actually regain and secure a dominant market position. In detail:

635 Through the merger with CRRC, Vossloh would gain additional technical knowhow regarding electric traction systems and traction current batteries, which CRRC already has,

in addition to the already mentioned financial resources, which will help Vossloh to restore its competitiveness. This could make it significantly cheaper for Vossloh to develop hybrid and/or dual-mode vehicles. CRRC's engineers already have extensive experience in working with traction current (the railway power grids in both countries are operated at high voltage: the Chinese grid at 25,000 volt and 50 Hz, the German grid at 15,000 volt and 16 2/3 Hz); this experience can be used to design dual-mode vehicles. In addition, CRRC can pass on its knowledge relating to hybrid technology to the merged entity. The company already offers hybrid locomotives and is currently developing the AZ locomotive for DB, which will also be equipped with a diesel drive system. To the extent the parties to the merger doubt that existing experience with new types of drives, especially previous experience with hybrid drive systems, could substantially facilitate development (see written statement of 27 March 2020, p. 122), it is to be pointed out that this contradicts their statements made elsewhere: In the context of discussing the market entry of new competitors, the parties to the merger state that Alstom, CAF, Toshiba and Stadler are experienced and established manufacturers that offer modern hybrid or dual-mode drive systems and therefore could easily establish themselves on the market for shunters (see written statement of 27 March 2020, p. 77).

636 Vossloh could also generate cost advantages regarding procurement in a two-fold way, namely by firstly aligning the procurement portfolios of both companies and exploiting CRRC's cost advantages with regard to the relevant European suppliers (alignment of terms and conditions) and by secondly gradually replacing more expensive parts from suppliers with cheaper parts from the CRRC group, which can possibly be manufactured in China. This will also strengthen Vossloh's competitiveness.

637 In the view of the parties to the merger, the procurement advantages are very limited; referring to CRRC's feasibility report, they estimate that such advantages amount to EUR million (see written statement of 27 March 2020, p. 123). They are of the opinion that the Bundeskartellamt incorrectly claims that the target company could replace more expensive parts from suppliers with cheaper parts from the CRRC group. In their view, this applies especially against the backdrop that so-called A parts – core components such as breaks, motor, controls, train control system or transmission – are often subject to the customer's separate approval. However, A components account for half of a locomotive's material costs.

638 CRRC's own statements made in their feasibility report already contradict this. In this report, the company points out that in addition to aligning the terms and conditions CRRC On p. 27, the feasibility report reads as follows (p. 1126 of the file):

639 The Bundeskartellamt

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Components from European suppliers cannot be replaced with Vossloh's products from one day to the next. The Bundeskartellamt did not claim that this was possible; it merely pointed out that this would occur "gradually". The lack of certified Chinese providers and factories emphasised by the parties to the merger (see written statement of 27 March 2020, p. 123) is not an insurmountable obstacle. In their response to the request for information of 19 March 2020, CRRC states that the costs

640 CRRC can additionally gain advantages based on Vossloh's knowledge regarding certification and development. These resources would considerably facilitate the company's intended market entry:

641 First, Vossloh has the necessary experience with conducting certification procedures before the Federal Railway Office. With the AZ locomotive for DB, CRRC currently seems to be on the right path to overcome these barriers to market entry by itself. This is confirmed by the parties to the merger in their written statement of 27 March 2020 (p. 124). Nevertheless, knowledge of the procedure and an evolved understanding of German standards remain valuable to simplify and speed up future certifications.

642 Second, Vossloh has a large installed base of vehicles in the EEA and Switzerland. Depending on the specific tender requirements, these can be used to prove the necessary references in the pre-qualification phase of public tender procedures.

643 Third, Vossloh has a team of engineers and qualified skilled workers with the necessary knowhow to produce high-quality products that meet the quality standards of customers in the EEA and Switzerland.

644 Fourth, Vossloh has maintenance facilities in Germany, France, Italy and Sweden. The ability to offer customers attractive vehicles as well as high-quality service concepts which help to ensure that the vehicles are highly available while at the same time maintenance costs are kept low can be important especially when it comes to selling products to private

railway companies. The lack of service facilities in Europe has so far been a competitive disadvantage for CRRC. Large railway companies, especially if they are state-owned, often service their vehicles themselves so that the lack of service facilities does not adversely affect CRRC's competitive position with regard to tender procedures issued by those companies. With regard to private railway companies, however, maintenance is often a collaborative service or even carried out by the manufacturer. If a manufacturer is not able to offer such after-sales services, this constitutes a disadvantage which can hardly be overcome in some tender procedures.

645 Using Vossloh's abilities to sell its own products precisely corresponds with CRRC's plans. In its document

(pp. 574 f. of the

file) the company writes the following:

646 Despite these advantages resulting from the merger, it cannot be unequivocally forecast that the importance of these advantages is so huge that the parties to the merger can in fact reach a dominant market position.

bb. Strengthening effects through dual-brand strategy

647 These doubts are also not overcome by the fact that CRRC is expected to pursue a dual-brand strategy after the merger. This means that CRRC intends to maintain the Vossloh brand including its products and its reputation in the market while adding additional products which can be offered under the – cheaper – CRRC brand to the product range. In a speech given to Vossloh employees by a CRRC executive on 28 August 2019, a CRRC representative explained (pp. 637 f. of the file; translation provided by CRRC):

648 These statements show that CRRC wishes to maintain and use the Vossloh brand including its high-quality products. Vossloh's market position is to be combined with CRRC's broad product range. This means that additional models are to be offered that are based on existing CRRC designs.

649 A dual-brand strategy is a commercially reasonable approach since it can help to minimise the cannibalisation of Vossloh's and CRRC's products in the shunter sector. Introducing a cheaper product line can attract additional customer groups and prevent customers from switching to a brand offered by a competitor. These additional CRRC products are likely to largely compete with CZ Loko's products, which are somewhat cheaper. In this way, Vossloh's previous group of discerning buyers could be maintained while sales would nevertheless be expanded by attacking providers of slightly cheaper shunters by offering competing products under the CRRC brand. In addition to the advantages regarding the market position of the merged entity, this also provides the advantage that the products of the cheaper CRRC product line could be largely produced in China.

650 The term 'dual-brand strategy' refers to a company's product differentiation by designing products manufactured by the same manufacturer for different target groups, which are then sold under different brand names. Multiple-brand strategies are to be found in the automotive industry, among other sectors; VW, for example, offers several truck and car brands. The individual brands differ, for instance, in terms of product features, price or brand appearance (see p. 2129 of the file). In this regard, it is important that customers are able to perceive a credible difference between the products (see p. 2134 of the file).

651 One of the buyers surveyed also states that it expects CRRC to introduce a dual-brand strategy after the merger.

652 During a meeting at the Bundeskartellamt on 28 January 2020, CRRC representatives

This does not contradict the statements made in the speech to Vossloh employees quoted above, however. There is no obvious reason why CRRC's approach with regard to shunters should be different than the approach taken with regard to other rolling stock and why the company should not sell a cheaper CRRC product to customers if they do not insist on buying a Vossloh product. The

by CRRC in the meeting on 28 January 2020

is not covered by the statements made in the speech. This is particularly apparent from the context of this statement. The dual-brand strategy is mentioned in direct connection with previous activities and Vossloh's capabilities in the shunting area. This is expressly addressed in the subsequent section.

653 The following argument was made (pp. 637 f. of the file, translation provided by CRRC):

654 This allows no other conclusion than that CRRC plans to take the obvious approach to maintain Vossloh's strengths and to serve the cheaper shunter segment currently not covered by Vossloh by offering CRRC products under its own name. The expansion of the product range will further strengthen Vossloh's existing market position since it will be possible to acquire additional customers. The question as to whether customers will switch between the two brands offered by the merged entity is irrelevant for the volume-based market position. Only the value-based market position can be affected by larger customer groups switching from the more expensive Vossloh brand to the cheaper CRRC brand. This is, however, a question of optimisation, which can be determined by CRRC alone by changing the product features and the relative prices of both brands accordingly.

655 The parties to the merger raise doubts as to the usefulness of a dual-brand strategy in the shunter market since purchasing a locomotive of a particular brand is – unlike with regard

to cars – not associated with additional prestige (see written statement of 27 March 2020, p. 129). The buyers are all professional customers. In this regard, the parties to the merger fail to take into account that a locomotive “made in Germany” is nevertheless more valuable to such buyers than a locomotive “made in China”.

656 Elsewhere the parties to the merger point out themselves that at present buyers are still under pressure to explain their purchase decision when opting for a Chinese product (see written statement of 27 March 2020, p. 109).

In the Bundeskartellamt’s view, this problem will not be completely solved through the merger; this is also clear to the parties to the merger (see written statement of 27 March 2020, p. 135). Against this background, maintaining the high-priced Vossloh models with European components while enhancing the distribution of locomotives made in China by way of cheaper prices is a rational strategy. In this regard, it is irrelevant whether this is done explicitly by using different brands or offering separate product lines.

cc. Deterrent effect caused by financial resources

657 The Bundeskartellamt is lastly also not able to establish the certain expectation that the merger will fulfil the prohibition requirements when considering the unmatched financial resources CRRC will contribute to the merged entity.

658 It can be expected that the merged entity will have a considerable deterrent effect due to its financial strength and the low predictability regarding the lengths to which CRRC would go in a price war. The possibility to expand its market position by engaging in price wars is already available to CRRC. Its success has been limited, however. For example, in the shunter market CRRC was awarded contracts with RCH and DB for some locomotives but so far CRRC has not been able to achieve great successes. This can change, at the earliest, with DB’s ongoing tender procedure for a dual-mode locomotive, the result of which cannot be determined at present, however.

659 The possibility to reach a dominant market position through low prices decisively also depends on the starting position from which the market shares are to be expanded. Vossloh’s competitive position is therefore once again relevant here. In view of the Bundeskartellamt’s remaining doubts as to whether Vossloh will be able to regain its former market strength, the Bundeskartellamt does not consider Vossloh’s market position, to the advantage of the parties involved, to be sufficient to help a low-price strategy succeed in such a way that the merged entity can reach a dominant market position.

660 This ultimately leads the Bundeskartellamt to the assessment that due to its close connection to the Chinese state CRRC indeed has superior possibilities when it comes to engaging in a price war compared to the established providers. However, the question as to whether a price war is successful and ultimately leads to a sweeping change in the market structure depends on the customers' reaction. This assessment decisively depends on how stable the market position is which the competitors are able to reach before Vossloh regains its competitiveness. Due to the remaining doubts as to the further market development outlined above, the Bundeskartellamt assumes, to the advantage of the parties to the merger, that this market position will be significant.

661 The following considerations are decisive in this regard:

662 If a company's scope of action is not sufficiently controlled by competition, the other market participants typically take into account the dominant undertaking's behaviour and adjust their actions accordingly. This scope of action which is not controlled by competition can also become evident in the dominant company's ability to decide which orders it would like to carry out itself and which orders are left to other companies. Implementing this market dominance is significantly facilitated by effective sanctions. If the market leader is able to credibly communicate to its competitors that they cannot profit from competitive action to the disadvantage of the market leader because it would sanction them with regard to later orders, such competitive action will not be taken.

663 Based on the statements regarding CRRC's strategy, several competitors expect that the company intends to expand its market position by using its financial resources and low prices until it dominates the market.

664 The parties to the merger argue, however, that the Bundeskartellamt has based its assessment in this regard exclusively on the competitors' opinions and singles out the opinions that suit the argument best (see written statement of 27 March 2020, p. 132). In their view, the opinions referred to do not even reflect the majority of competitors and the buyers' opinions are entirely ignored.

665 However, the parties to the merger fail to recognise the significance of the assessments communicated to the Bundeskartellamt by market participants in the context of a proceeding. Consulting the market participants is in no way about determining the majority opinion of one or both market sides in the sense of polling, and deriving results from this. Instead, the assessments provided by the market participants serve to understand the competitive forces affecting a market. Against this background, it is decisive which statements are able to plausibly explain the modes of action which can comprehensibly demonstrate the occurrence of suggested results against the backdrop of the investigations,

the decisions of the competition courts and competition authorities as well as economic theories.

666 In the present case, the statements made by the competitors seem plausible since for them the question arises as to whether competitive action to the disadvantage of CRRC could pay off. In the context of a dispute with the merged entity – which after the merger would have Vossloh’s resources at its disposal and therefore would no longer be at a disadvantage in terms of quality, service, references or knowhow regarding certification – they could secure contracts only at the cost of accepting losses. For a private sector business, this makes sense only if it can expect that the losses incurred will be (over)compensated by higher prices after the price war is over.

667 How long a price war would last and whether the objectives set could be achieved cannot be reliably forecast with regard to a company which ultimately can make use of any amount of money provided by its owner – the state – via state banks and the state budget. This applies especially if it is unclear whether the state-owned company optimises its behaviour exclusively based on private-sector standards or whether other benefit considerations – such as (employment) policy considerations, reputation, deterrence or plan fulfilment – are included in this optimisation effort. If, however, it is not possible to reasonably predict the time at which a price war would end, taking competitive action would be associated with incalculable risks for competitors, which could even threaten their own existence. It would not be rational to engage in such a price war.

668 This would not only apply in cases where the competitors were able to rely on the fact that customers would still predominantly place their orders with them despite the tempting prices offered by CRRC and Vossloh. In this case, the established manufacturers would have to go along with low prices only to a certain extent. It is thus possible that predatory pricing may not be fully effective. This once again draws the attention to the question of the extent to which the established manufacturers of railway technology could be able to expand their market position during the phase of Vossloh‘s weakness in the next two to four years.

669 As already explained several times, the Bundeskartellamt still has its doubts that Vossloh will be able to return to its former strength. In this regard, the Bundeskartellamt is not able to predict with the necessary degree of certainty whether the market position acquired through Vossloh will be sufficient to achieve a dominant market position through pursuing a low-price strategy. In this regard, the Bundeskartellamt is not convinced that the competitive gap between Vossloh and its competitors established over the past years can be overcome.

670 This assessment is also not changed by the fact that, provided the low-price strategy were effective, the competitors could not be expected to prevail in the price war or to return after having exited the market as soon as prices increase again. Because in this case, the private competitors would shy away from price wars and accept the implicit demands made by the merged entity with regard to the market situation. In this respect, the extent of the competitors' resources is also irrelevant. Although Siemens and Alstom also possess significant financial resources, these companies are accountable to their shareholders. Consequently, they do not have the possibility to invest money in a price war for shunters in a way which is economically irrational. Against this background, it is to be expected that at the end of a longer price war market participants would exit the shunter market due to the lacking prospect of winning.

671 In view of the considerable resources available to the Western competitors it is indeed a possibility that a company which has exited the market will return as soon as the price war has ended and the market leader uses its newly gained market power to raise prices. However, this reaction seems unrealistic for two reasons:

672 First, a company which has exited the market does not keep its previous products up-to-date in terms of technical developments. The longer a price war lasts, the more likely it becomes that it would be necessary to develop a completely new shunter, which would be associated with correspondingly high costs for development and certification. The company would accept these costs only if the expected profit was equally high, meaning: It would have to have a realistic chance of securing a major contract at high prices which amortises the costs associated with its market entry. In this regard, it is to be recalled that a private-sector company – unlike a state-owned company from a centrally planned economy – very decisively bases its decision regarding market entry on profitability.

673 Second, future profits can be realistically expected only if the framework conditions have changed in a way that another price war can be excluded. The typical reaction shown by a dominant company is to respond to an attack on its market position by reducing its prices and in this way destroying the profitability of the company which has newly entered the market. It follows that the competitive conditions ought to have changed fundamentally either through changes to the legal framework, such as with regard to tender or award conditions, or the market structure, such as the exit of the market leader, before market participants that have exited the market could be expected to return.

674 Without these requirements having been fulfilled, even effective competitors cannot be expected to return to the market if prices are temporarily raised and in this way limit the scope of action of the merged entity.

675 This assessment is not changed by the aspect emphasised by the parties to the merger that CRRC does not have an economic incentive to pursue a low-price strategy (see written statement of 27 March 2020, p. 133). Even CRRC would not assume losses incurred due to a low-price strategy as an end in itself.

676 Against the backdrop that as a Chinese state-owned company CRRC cannot be expected to always act in an economically rational manner, this argument is incorrect. This has already been explained above (for more details see B.II.2.g.aa(2)): With regard to state-owned companies from centrally planned economies it is not possible to apply all of the basic economic assumptions regarding behaviour in an unadapted way since making a profit is not the only priority for these companies but the focus lies on fulfilling the plan instead. The success of a low-price strategy would therefore not depend on the fact alone that the cost involved in this strategy can be regained; instead, this evaluation would also include the targets set in the five-year plan. The deliberations of the parties to the merger regarding the extent to which any losses incurred due to a low-price strategy could be overcompensated in the specific market environment at a later time are too short-sighted against this background.

677 In this context, it is also important that in order to discourage competitors it is not necessary to permanently offer products at low prices. Instead it is decisive that the competitors have to expect to be sanctioned at any time if they deviate from the behaviour demanded by the market leader; such sanctions make competitive action unprofitable. Implementing a low-price strategy for a limited period of time together with resolutely imposing sanctions in the event of competitive action may suffice. Contrary to the assumption of the parties to the merger outlined in their statement of 17 February2020, it is not necessary for the merged entity to permanently pass on its cost advantages to customers in the form of low prices (see statement of 17 February 2020, p. 46).

678 Ultimately, however, these considerations are not even relevant. What is decisive for the evaluation of the proposed merger is the fact that the Bundeskartellamt is not able to predict with the necessary degree of certainty that Vossloh's market position will be sufficiently strong in the future to allow CRRC to expand its position and dominate the market.

dd. No unilateral effects below the threshold for single firm dominance

679 Concentrations can meet the prohibition requirements despite being below the threshold values and not being covered by the standard example of single firm dominance if they are expected to significantly impede effective competition due to non-coordinated or unilateral effects. The requirements for a considerable impediment to effective competition not

covered by the example of single firm dominance are not met in this case, however. The following considerations are decisive in this respect:

680 The analysis of the market structure outlined in B.II.2.a shows that CRRC does not yet hold any market shares in the relevant area of the EEA and Switzerland. In the shunter area, CRRC has so far been able to secure only one contract with DB for shunters (seeB.II.2.a.cc). The companies Alstom, Gmeinder and CZ Loko are alternatives for buyers and they hold relevant market shares, which they have been able to increase at Vossloh's expense in the past few years. In addition, the analysis of the actual competition situation shows (for more details see B.II.2.a.dd) that CRRC and Vossloh are not even close competitors. CRRC's access to customers in the EEA and Switzerland is not good either.

681 With regard to the effects of the merger to be expected in the future, e.g. in terms of the price-setting scope or the risk of impediments to innovation competition, the evidence available to the Bundeskartellamt is not sufficient to prove that such effects will occur to such an extent that effective competition will be considerably impeded in the forecast period.

682 Consequently, it cannot be expected with a sufficient degree of certainty that effective competition will be considerably impeded below the threshold for market dominance due to unilateral effects.

ee. No coordinated effects resulting from the merger

683 Even if in the past few years the combined market shares held by the companies Vossloh, Alstom and CZ Loko exceeded the thresholds set out in Section 18(6) GWB and the thresholds based on which joint market dominance in the relevant market can be assumed were therefore exceeded, this assumption can be deemed disproved.

684 This is suggested by the actual competition situation which is characterised by several market entries by established rolling stock companies and the considerable decline in Vossloh's market position as well as the clear asymmetry between the three companies mentioned. Vossloh, Astom and CZ Loko are structured in completely different ways and in the past years have pursued different strategies with regard to shunters. Due to the considerable shifts in the market structure to be expected in the next few years – among other things due to Stadler, Toshiba and CRRC entering the market – the merger is not expected to result in coordinated effects. It is therefore not necessary to examine the coordinated effect in greater detail.

ff. Overall assessment

685 Considering the overall picture, it is not to be expected that the merger will significantly impede effective competition. In particular, the merger is not expected to create a dominant market position.

686 Based on the combined resources of the companies involved, it cannot be expected with a sufficient degree of certainty that this will create uncontrolled scopes of action. The expected two-brand strategy and the deterrent effect caused by CRRC's financial resources do not change this.

687 On 11 March 2020, the parties to the merger stated as a precaution that the merger would have an improving effect on other markets. Due to the fact that the Bundeskartellamt reached the conclusion that the requirements for prohibition are not shown to have been met in the shunter market, no further explanations are needed.

C. Fees

688 As an official act of the competition authority pursuant to Section 40 GWB, the clearance of a merger project is subject to fees pursuant to Section 80(1) sentence 2 no. 2 GWB. In this regard, the competition authority may charge fees in the amount of up to EUR 50,000; in cases of particularly great economic importance and exceptionally high administrative costs, fees of up to EUR 100,000 may be charged (Section 80(2) sentence 2 no. 1 in conjunction with sentence 3 GWB). The notification of a concentration pursuant to Section 39(1) GWB is also subject to fees pursuant to Section 80(1) sentence 2 no. 1 GWB. The fee for the notification of the concentration is to be credited against the fee for the clearance (Section 80(1) sentence 4 GWB).

689 The amount of the fee is determined pursuant to Section 80(2) sentence 1 GWB according to the personnel and material expenses of the competition authority (cost covering principle), taking into account the economic significance of the subject matter of the act subject to fees (principle of equivalence). In this regard, the economic significance of the concentration is more important in relative terms. It is usually determined based on the economic advantages expected to be gained by the notifying companies due to the merger and the effects on the relevant market. With regard to the economic advantages gained by the companies due to the merger, their turnovers in the relevant markets and their market shares are important indications (see Düsseldorf Higher Regional Court, decision of 16 April 2008, VI-Kart 2/08 (V) with further references). Within the fee scale, the mean fee is to be

charged as a reasonable fee in the average case. Based on the currently applicable fee scale, this amounts to EUR 25,000. Depending on the relevant economic significance and the workload, this mean value is to be increased or reduced at the discretion of the competition authority (see Düsseldorf Higher Regional Court, decision of 16 April 2008, VI-Kart 2/08 (V) with further references).

690 With regard to the fee to be levied pursuant to Sections 80(1) sentence 2 no.1, (2) sentences 1 and 2 no. 1 GWB, 1 KartKostV, the economic significance the Bundeskartellamt attaches to the merger project is above average. The personnel and material expenses were extraordinary since a large number of market participants, a significant part of which is domiciled outside Germany, had to be surveyed and repeated inquiries regarding associated companies and regarding CRRC's response to the questionnaire were necessary. In light of this, the administrative fee pursuant to Section 80(2) sentence 3 GWB was set at (in words: euros).

691 The fee for the notification of the concentration that is to be levied separately was set at (in words: euros) based on the discretionary considerations mentioned above. Pursuant to Section 80(1) sentence 4 GWB, this fee is credited against the fee for the clearance decision; it is therefore not necessary to pay this fee separately in addition to the fee for the clearance.

692 Pursuant to Section 80(6) sentence 1 no. 2 in conjunction with Section 80(1) sentence 2 no. 1 GWB, the parties 1 to 9 are liable to pay the costs.

693 The fees in the amount of

,

in words: euros,

are due upon service of this decision and payable within one month of service of this decision to the following bank account:

Bundeskasse Trier
IBAN: DE81 5900 0000 0059 0010 20
Deutsche Bundesbank , Filiale Saarbrücken
BIC: MARKDEF1590

Please quote as the purpose of payment the transaction number

810600415067

and the date of the decision; otherwise, it is not possible to process the payment.

694 If payment has not been made or not been made in full after the expiry of one month following the day of service, a late payment surcharge of one percent of the overdue amount

may be levied for each month of delay or part thereof (Section 80(8) GWB, Section 1(2) KartKostVO in conjunction with Section 18(1) VwKostG). International money transfers are usually subject to bank charges. In such cases, it must be ensured that the full fee is credited to the Bundeskartellamt’s account.

695 The costs incurred as expenses in addition to the fees within the meaning of Section 80(1) sentence 3 GWB are charged separately.

Instruction on rights of appeal

This decision may be appealed. The appeal is to be submitted in writing to the Bundeskartellamt, Kaiser-Friedrich-Straße 16, 53113 Bonn, within one month following service of the decision. It also suffices if the appellate court, the Düsseldorf Higher Regional Court, receives the appeal within this period.

The appeal is to include a statement setting out the grounds of appeal. The period for filing the statement of appeal is two months. It begins upon receipt of the decision under appeal and may, upon application, be extended by the presiding judge of the appellate court. The statement setting out the grounds of appeal must state the extent to which the decision is being appealed and its modification or revocation sought and indicate the facts and evidence on which the appeal is based.

The notice of appeal and the statement of the reasons of appeal must be signed by a lawyer.

The appeal has no suspensive effect. Upon application the appellate court may completely or partly order the suspensive effect.

Temme	Schmücker Ms Schmücker is absent on business and thus not able to sign the decision Temme	Dr Barth

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