

EN

***Case No COMP/M.6350 -  
SIEMENS / NEM  
HOLDING***

Only the English text is available and authentic.

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

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Article 6(1)(b) NON-OPPOSITION  
Date: 28/10/2011

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## EUROPEAN COMMISSION

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 Where possible the information omitted has been replaced by ranges of figures or a general description.

Brussels, 28/10/2011  
C(2011) 7968

PUBLIC VERSION

MERGER PROCEDURE

### **To the notifying party:**

Dear Sir/Madam,

**Subject: Case No COMP/M.6350 – SIEMENS / NEM HOLDING  
Notification of 23 September 2011 pursuant to Article 4 of Council Regulation  
No 139/2004<sup>1</sup>**

1. On 23 September 2011 the European Commission received a notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which the undertaking Siemens Aktiengesellschaft ("Siemens", Germany) acquires within the meaning of Article 3(1)(b) of the Merger Regulation sole control over NEM Holding B.V. ("NEM", the Netherlands), by way of purchase of shares and assets.

#### **I. THE PARTIES**

2. Siemens is a German stock corporation with registered offices in Berlin and Munich, Germany. Siemens offers a wide range of products and services to mainly industrial customers in three business sectors: industry, energy and healthcare.
3. NEM is a Dutch corporation incorporated and headquartered in Leiden, the Netherlands. NEM, through its 100% affiliates NEM B.V. and NEM Energy Services B.V., is mainly active in the design, engineering, delivery and servicing of various types of Heat Recovery Steam Generators (HRSG) and of fossil fuel fired steam generators (boilers) for industrial and utility applications.

#### **II. THE OPERATION AND THE CONCENTRATION**

4. Siemens intends to acquire sole control of NEM through the acquisition of all the shares of NEM Energy Services B.V. and the assets of NEM B.V.

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

5. The operation constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

### **III. EU DIMENSION**

6. The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 2 500 million<sup>2</sup> (Siemens: EUR 75,978 million and NEM: EUR 307 million). In each of at least three Member States, the combined aggregate turnover of all the undertakings concerned is more than EUR 100 million (in Austria, Belgium, the Czech Republic, Denmark, Finland, Germany, France, Greece, Hungary, Ireland, Italy, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom). The aggregate turnover of each company is more than EUR 25 million in three countries (Germany, Greece and the Netherlands). Neither company achieves more than two-thirds of its aggregate EU-wide turnover within one and the same Member State. The notified operation therefore has an EU dimension according to Article 1(3) of the Merger Regulation.

### **IV. COMPETITIVE ASSESSMENT**

#### **A. Horizontal overlaps**

7. Siemens and NEM have overlapping activities in four areas. However, two horizontal overlaps do not lead to combined market shares exceeding 15% under any plausible market definition. In view of the small combined market shares, the Commission considers that in those areas the transaction will not lead to competition concerns resulting from horizontal overlaps. This concerns the following potential markets: boiler services and Concentrating Solar Power (CSP) components.

#### **1. HRSG**

8. Both parties are active in the supply of HRSGs (Heat Recovery Steam Generators). However, Siemens's output is limited and only used internally in the production of CCPPs (Combined Cycle Power Plants).

##### ***1.1. Relevant product market***

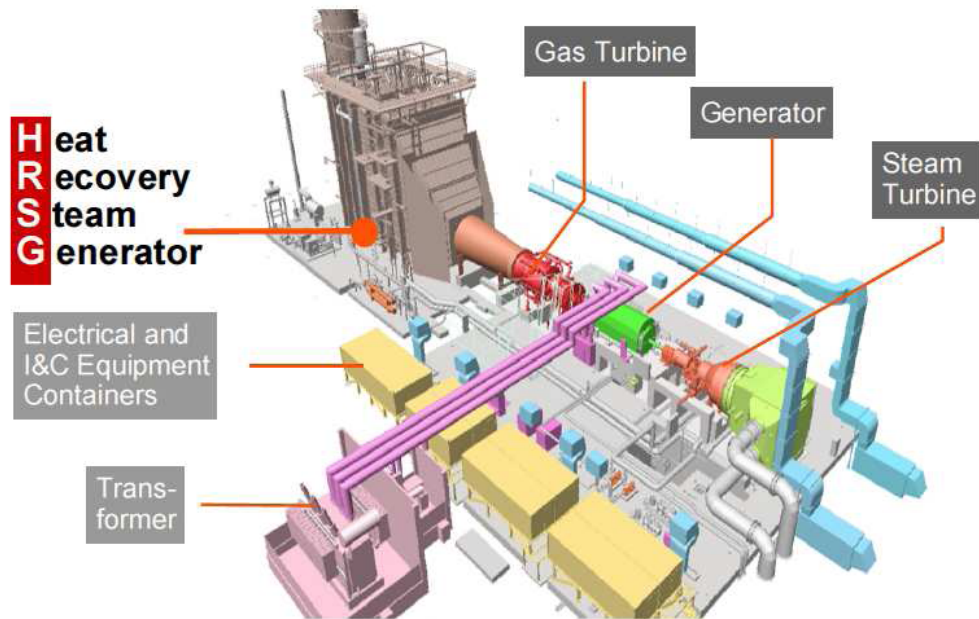
9. All thermal power plants emit a certain amount of waste heat which is released into the environment. In order to improve the overall efficiency of the plant and reduce CO<sub>2</sub> emissions, some of the heat can also be captured and used. This is the case in CCPPs, where the exhaust heat from a gas turbine is used to produce steam. Gas turbines are only able to use a portion of the energy their fuel generates (usually less than 50%) and, as a result, the exhaust gases are hot (600°C). In a “single cycle” power plant this energy is wasted. The HRSG is a specific type of heat exchanger, used in CCPPs, which uses the hot exhaust gases from the turbine to produce steam. The steam produced by HRSGs drives a steam turbine

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<sup>2</sup> Turnover calculated in accordance with Article 5(1) of the Merger Regulation and the Commission Consolidated Jurisdictional Notice (OJ C95, 16.04.2008, p. 1).

and generator, producing additional electricity. See Figure 1 below. This increases the overall fuel efficiency of the power plant.

Figure 1: Schematic overview of a CCPP



10. There are several design variants for HRSGs: vertical and horizontal designs (related to the direction of gas flow), Benson for the high pressure stage (licensed by Siemens) and drum (Drums are used in the steam cycle. This is the most common technology.).
11. In an earlier case<sup>3</sup>, the Commission defined HRSGs as a separate product market with no further segmentation. The parties submit that the HRSG market should not be further segmented because i) although HRSGs exist in different designs and sizes, the basic technology is the same for all types of HRSGs and ii) HRSGs are relatively simple products, using long established technology and manufacturing techniques.
12. Siemens, however, has provided market shares for the merchant and total market (including captive use) and for both large and small HRSGs. The dividing line between large and small HRSGs is, according to Siemens, 75MW. Below this threshold the steam generator can be built in modules in a factory while larger plants must be assembled on site.
13. The market investigation confirmed the existence of a separate market for HRSGs. In addition, a majority of the respondents were of the opinion that a further segmentation by the size of the gas turbine should be considered. However, while the majority of competitors were in favour of such segmentation, the customers were divided. Competitors argued that the manufacturing process is different for small and respectively large HRSGs; while small HRSGs are produced as a modular system, large HRSGs' design is customised. Customers in favour of segmentation submitted that segmentation based on the size of the gas turbine allows for faster project development and procurement process. In addition, respondents in favour of segmentation indicated a threshold that spanned between 40 and 160 MW; in one

<sup>3</sup> COMP/M.1484 – Alstom/ABB, para. 26 and 61

case an even in deep segmentation was provided – in small, medium, large and very large projects.

14. A report by Global Data released in December 2010 called "Heat Recovery Steam Generator (HRSG) Market Analysis to 2020 - Global Market Size, Equipment Market Share, Competitive Landscape, Trends and Analysis" considers that the HRSG market has two tiers of competition. The first tier would include manufacturers of power equipment, and the second tier would include the niche players who participate exclusively as manufacturers of HRSG equipment.
15. The Parties do not consider a distinction between “tier one” and “tier two” HRSG suppliers appropriate. They claim that all suppliers of HRSGs are fully competing with each other in a competitive environment which is mainly driven by the price and the construction time. In addition, the Parties argue that the McCoy Power Report, which they consider as the reference analysis in the industry, does not make such a distinction.
16. The market investigation revealed that a majority of competitors indeed consider that suppliers could be segmented into tiers. However, the investigation results were inconclusive as to the distinction and what suppliers should be classified as what tier. For example, when asked to provide the list of suppliers for each of the two tiers, the majority of respondents that answered the question included Doosan in the second tier while it is listed in the Global Data report in the first tier.
17. The majority of customers seemed to favour a division of suppliers in two tiers. However, when asked to provide the list of suppliers for each of the two tiers, the majority of respondents that answered the question included Nooter/Eriksen, NEM and Vogt power International in the second tier while they are listed in the Global Data report in the first tier.
18. However, for the purposes of this case, the Commission considers that there is no need to decide whether the market for HRSGs should be further divided, according to the size of the gas turbine or in two tiers, in the absence of competition concerns.

### ***1.2 Relevant geographic market***

19. The notifying party submits that the geographic scope of this market should be global because i) many players active on this market supply worldwide, ii) price differences are small between world regions and iii) many of the components are manufactured in the Far East and supplied throughout the world.
20. In a previous decision the Commission left the geographic market for HRSGs<sup>4</sup> open and analysed it at both the global and EEA level.
21. In the market investigation in the present case the majority of customers that answered the questions relevant to the geographic scope of the HRSG market, replied that they source at global level. Customers were divided in respect to the existence of barriers; some considered that such barriers exist, pointing towards regulatory requirements, import duties and transport costs. However, the majority of customers replied that suppliers from outside the

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<sup>4</sup> COMP/M.1484 – *Alstom/ABB*, para. 36.

EEA exert a significant competitive pressure on EEA prices of HRSGs, indicating that lower manufacturing costs as main reason. Moreover, the majority of customers stated that global price variations are the result of differences in manufacturing costs, standards and quality requirements.

22. The majority of competitors which answered the questions related to the geographic scope of their supply, indicated a larger than EEA market with suppliers from outside the EEA exerting significant pressure on EEA prices of HRSGs, suggesting that lower wages and better currency exchange rates were the main advantages. Moreover, the majority of competitors stated that prices vary on a global basis as a result of differences in manufacturing costs, standards, quality requirements and required local content. Some competitors stated that there are still regulatory barriers and a minority specified that imports may be affected by customs duties. However, the majority of both customers and competitors considered the market to be global in scope.
23. For the purposes of the present case it can be left open whether the market is EEA wide or larger, in the absence of competition concerns.

### 1.3 Assessment

24. In line with the approach taken by the Commission in a previous decision<sup>5</sup> relating to HRSGs, the average market shares over a five year period are provided below<sup>6</sup>. As it can be observed in the table below the Parties' market shares in HRSGs fluctuate significantly over the five year period. This is due to the fact that demand for CCPPs is lumpy and linked to the economic cycle. Generally, more orders are placed during the time of a growing economy, when electricity consumption also increases. Therefore, the averages of the five year period market shares were considered for the assessment.

Market shares (%)		2006	2007	2008	2009	2010	5 year average
Global, including captive sales – all HRSGs	NEM	[5-10]	[5-10]	[5-10]	[5-10]	[5-10]	[5-10]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[5-10]	[5-10]	[5-10]	[10-20]	[5-10]	[5-10]
EEA, including captive sales –all HRSGs	NEM	[5-10]	[10-20]	[20-30]	[20-30]	[50-60]	[10-20]
	Siemens	[0-5]	[0-5]	[0-5]	[5-10]	[0-5]	[0-5]
	Aggregated	[10-20]	[10-20]	[20-30]	[20-30]	[50-60]	[10-20]
Global, including captive sales –small HRSGs	NEM	[0-5]	[10-20]	[5-10]	[10-20]	[0-5]	[5-10]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[0-5]	[10-20]	[5-10]	[10-20]	[0-5]	[5-10]
EEA, including captive sales –small HRSGs	NEM	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	[30-40]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	[30-40]
Global, including captive sales –large HRSGs	NEM	[5-10]	[5-10]	[5-10]	[5-10]	[5-10]	[5-10]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[5-10]	[5-10]	[5-10]	[10-20]	[5-10]	[5-10]
EEA, including captive sales –large HRSGs	NEM	[5-10]	[5-10]	[20-30]	[20-30]	[50-60]	[10-20]
	Siemens	[0-5]	[0-5]	[0-5]	[5-10]	[0-5]	[0-5]
	Aggregated	[10-20]	[5-10]	[20-30]	[20-30]	[50-60]	[10-20]

<sup>5</sup> COMP/M.1484 – *Alstom/ABB*, para. 37.

<sup>6</sup> The market shares are based on the Mc Coy Power Industry Report 2010 and Parties' own data

Global, excluding captive sales – all HRSGs	NEM	[5-10]	[5-10]	[10-20]	[10-20]	[5-10]	[10-20]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[5-10]	[5-10]	[10-20]	[10-20]	[5-10]	[10-20]
EEA, excluding captive sales – all HRSGs	NEM	[10-20]	[20-30]	[20-30]	[30-40]	[50-60]	[20-30]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[10-20]	[20-30]	[20-30]	[30-40]	[50-60]	[20-30]
Global, excluding captive sales –small HRSGs	NEM	[0-5]	[10-20]	[10-20]	[10-20]	[0-5]	[5-10]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[0-5]	[10-20]	[10-20]	[10-20]	[0-5]	[5-10]
EEA, excluding captive sales –small HRSGs	NEM	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	[30-40]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	[30-40]
Global, excluding captive sales –large HRSGs	NEM	[5-10]	[5-10]	[10-20]	[10-20]	[5-10]	[10-20]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[5-10]	[5-10]	[10-20]	[10-20]	[5-10]	[10-20]
EEA, excluding captive sales –large HRSGs	NEM	[10-20]	[10-20]	[20-30]	[30-40]	[60-70]	[20-30]
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]
	Aggregated	[10-20]	[10-20]	[20-30]	[30-40]	[60-70]	[20-30]

25. The following table shows the Parties' and their competitors' five years average market shares in HRSGs (in %):

			<b>Doosan</b>	<b>N/E</b>	<b>Alstom</b>	<b>Vogt</b>	<b>CMI</b>	<b>IST</b>
Global, including captive sales – all HRSGs	NEM	[5-10]	[10-20]	[10-20]	[10-20]	[5-10]	[5-10]	
	Siemens	[0-5]						
	Aggregated	[5-10]						
EEA, including captive sales –all HRSGs	NEM	[10-20]	[5-10]	[5-10]	[20-30]		[10-20]	
	Siemens	[0-5]						
	Aggregated	[10-20]						
Global, including captive sales – small HRSGs	NEM	[5-10]		[10-20]				[10-20]
	Siemens	[0-5]						
	Aggregated	[5-10]						
EEA, including captive sales – small HRSGs <sup>7</sup>	NEM	[30-40]						[20-30]
	Siemens	[0-5]						
	Aggregated	[30-40]						
Global, including captive sales – large HRSGs	NEM	[5-10]	[10-20]	[10-20]	[10-20]	[5-10]	[10-20]	
	Siemens	[0-5]						
	Aggregated	[5-10]						
EEA, including captive sales – large HRSGs	NEM	[10-20]	[5-10]	[5-10]	[30-40]		[10-20]	
	Siemens	[0-5]						
	Aggregated	[10-20]						
Global, excluding captive sales – all HRSGs	NEM	[10-20]	[10-20]	[10-20]		[5-10]	[10-20]	
	Siemens	[0-5]						
	Aggregated	[10-20]						
EEA, excluding captive sales – all HRSGs	NEM	[20-30]	[5-10]	[5-10]			[10-20]	
	Siemens	[0-5]						
	Aggregated	[20-30]						
Global, excluding	NEM	[5-10]		[10-20]		[5-10]		[10-20]

<sup>7</sup> Also: Foster, [10-20]%; AE&E, [10-20]% and Kessel, [5-10]%

captive sales – small HRSGs	Siemens	[0-5]						
	Aggregated	[5-10]						
EEA, excluding captive sales – small HRSGs <sup>8</sup>	NEM	[30-40]						[20-30]
	Siemens	[0-5]						
	Aggregated	[30-40]						
Global, excluding captive sales – large HRSGs	NEM	[10-20]	[10-20]	[10-20]		[5-10]	[10-20]	
	Siemens	[0-5]						
	Aggregated	[10-20]						
EEA, excluding captive sales – large HRSGs	NEM	[20-30]	[10-20]	[5-10]			[20-30]	
	Siemens	[0-5]						
	Aggregated	[20-30]						

Source: Form CO

26. There is a horizontal overlap between the parties only when captive sales at EEA level are included. However, Siemens uses its HRSGs (one or two per year) in its own CCPP projects. In addition, even under these conditions, the overlap is minimal; the combined market shares of the parties being below 20% on either a global or EEA level.
27. Most respondents to the market investigation see Doosan, Nooter Eriksen, Vogt Power, CMI and Alstom as NEM's main competitors HRSG market and its various possible sub-segments (e.g. by size or design).
28. HRSG competitors claim that customers have significant bargaining power, due to competition at world-wide level and excess capacity. A majority of customer respondents believe that suppliers outside EEA exert a significant competitive pressure on HRSG prices within EEA. According to the market investigation results, significant HRSG overcapacity exists on the market and will continue to do so following the transaction. In addition, as HRSG is mature technology, licensing appears to be common.
29. For these reasons the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market regarding the said horizontal overlap.

## 2. Instrumentation and Control (I&C) systems

30. NEM supplies boiler-specific I&C systems. Often, the supplier of the boiler also provides an integrated I&C system as part of its overall boiler offer. This is also the case for NEM. However, in some cases (mostly upgrades), customers purchase boiler components separately and ask a third party supplier to provide the I&C system. This is the product offered by NEM.
31. Siemens provides I&C systems for overall power plants, which it claims is a different business due to the significant differences from both demand and supply side. The supply of I&C systems for power plants requires significantly more complex engineering skills, know-how and experience. In addition, for the assembly of a CCPP power plant, a comprehensive harmonised I&C system would have to be provided including all components of the plant. This requirement can only be met by highly specialised suppliers who supply overall I&C

<sup>8</sup> Also: Foster, [10-20]%; AE&E, [10-20]% and Kessel, [5-10]%



system for power plants. Also, suppliers of I&C systems for boilers do not provide the boiler I&C as part of the overall plant I&C and are therefore not active on the same market or part of it. Moreover, Siemens and NEM do not meet each other in competition because NEM only offers I&C-services specifically for boilers, which is not part of Siemens' product offering, while Siemens only offers overall I&C systems for entire power plants, an area in which NEM is not active.

32. There is no need to define the product or geographic markets since under any reasonable alternative market definition there would be no competition concerns.

### **2.3. Assessment**

33. If the boiler-specific I&C systems and I&C systems for overall power plants were considered to belong to different product markets, there would be no overlap. If the two activities were to belong to the same market, Siemens would have an estimated market share of [20-30]% in the EEA and [10-20]% worldwide while NEM would have less than [0-5]% in the EEA and [0-5]% at global level. Given the low increment and the moderate combined market share, competition problems at this level are unlikely.
34. For these reasons the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market regarding this horizontal overlap.

## **B. Vertical relationships**

### **B.1. HRSG (upstream) – Combined Cycle Power Plant (CCPP, downstream)**

35. The market definition for HRSG was described in section 9 to 23.
36. Both parties produce HRSGs, which are used as components of CCPPs, where Siemens is active.

#### **B.1.1. CCPPs**

##### ***1.1.1. Relevant Product market***

37. The construction of CCPPs encompasses different work streams, including the civil and construction works, the supply of electrical equipment and the mechanical equipment. The mechanical equipment concerns the supply of the core components, such as gas turbines and generators. The mechanical equipment is divided into two main areas: the power island and the balance of plant. The core components included in the power island are the gas turbine, the generator, the HRSG, the steam turbine and auxiliaries. Each EPC<sup>9</sup> CCPP solution includes at least one HRSG.

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<sup>9</sup> Engineering, Procurement and Construction

38. Siemens submits that the relevant market should go beyond “turnkey” solutions, to include also other EPC CCPP solutions. EPC solutions are contracts under which the customer is supplied either a full CCPP turnkey plant or a less comprehensive package; however, in every case, under a EPC CCPP solution contract, the customer always purchases at least the core elements of a CCPP plant, i.e. the power island, which includes the HRSG and other mechanical components, including the gas turbine, the steam turbine and the generator/s. In Siemens' view this market definition captures, all the different types of contract in which HRSGs are used by Siemens.
39. In a precedent case<sup>10</sup> the Commission defined a separate market for turnkey gas-and-steam power plants, which was not further sub-divided.
40. In the market investigation in the present case, the majority of customers considered that all the intermediary solutions, together with the complete turnkey gas and steam power plant should belong to the same product market. In addition, the majority of customers were of the opinion that this market should not be further segmented since there are many package solutions that can be provided on CCPP sites.
41. The majority of competitors expressed the opinion that all the intermediary solutions, together with the complete turnkey gas and steam power plant should belong to the same product market which should not be further segmented.
42. However, the precise product market definition can be left open in this case in the absence of competition concerns.

### ***1.1.2. Relevant geographic market***

43. Siemens considers that the geographic scope of this market should be global. The notifying party argues that many suppliers provide CCPP solutions worldwide and that prices between world regions do not vary significantly.
44. In a previous decision<sup>11</sup>, the Commission left open the geographic scope of the CCPP turnkey market, analysing it at EEA level.
45. The market investigation in the present case revealed that the majority of customers source CCPPs on a wider than EEA basis. In addition, the majority of customers stated that there are no barriers to trade between EEA and the rest of the world or within EEA. The majority of customers were of the opinion that suppliers from outside the EEA area exert a significant competitive pressure on the EEA prices of CCPP projects mainly due to lower prices, better delivery times and favourable currency exchange rates. The majority of customers considered that the geographic scope of the market is global given that worldwide suppliers, which often have representative offices in Europe, participate in tendering and negotiations for projects in Europe.
46. The overwhelming majority of competitors stated that the geographic scope of the CCPP market is global. Some competitors considered that there are some minor barriers to trade

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<sup>10</sup> COMP/M.3653- *Siemens/VA Tech*, para. 67 and 71

<sup>11</sup> COMP/M.3653 – *Siemens/VA Tech*, para. 70

between Europe and the rest of the world, the existence of different standards and import duties, and within Europe, the existence of different standards within the EEA. However, large players such as General Electric, Alstom, Mitsubishi Heavy Industries and Siemens, supply CCPPs on a worldwide basis.

47. In any event, the definition of the relevant geographic market can be left open as there would be no competition concerns irrespective whether the geographic scope of the CCPP market is EEA or global.

### 1.3 Assessment

48. In line with the approach taken by the Commission in a previous decision<sup>12</sup> relating to HRSGs, the average market shares over a 5 year period are provided. The following table shows the Parties' market shares in HRSGs (%) in excess of 25%:

EEA Market shares (%) in HRSGs		2006	2007	2008	2009	2010	5 year average
including captive sales –small HRSGs	NEM	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	<b>[30-40]</b>
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	<b>[0-5]</b>
	Aggregated	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	<b>[30-40]</b>
excluding captive sales – all HRSGs	NEM	[10-20]	[20-30]	[20-30]	[30-40]	[50-60]	<b>[20-30]</b>
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	<b>[0-5]</b>
	Aggregated	[10-20]	[20-30]	[20-30]	[30-40]	[50-60]	<b>[20-30]</b>
excluding captive sales –small HRSGs	NEM	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	<b>[30-40]</b>
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	<b>[0-5]</b>
	Aggregated	[0-5]	[60-70]	[0-5]	[70-80]	[0-5]	<b>[30-40]</b>
excluding captive sales –large HRSGs	NEM	[10-20]	[10-20]	[20-30]	[30-40]	[60-70]	<b>[20-30]</b>
	Siemens	[0-5]	[0-5]	[0-5]	[0-5]	[0-5]	<b>[0-5]</b>
	Aggregated	[10-20]	[10-20]	[20-30]	[30-40]	[60-70]	<b>[20-30]</b>

49. Siemens' and its competitors' market shares in CCPP solutions are illustrated in the tables below:

Table 19: Worldwide CCPP EPC solutions market 2006-2010

Suppliers	2006		2007		2008		2009		2010		5 year average	
	MW	%	MW	%	MW	%	MW	%	MW	%	MW	%
Siemens	[...]	[10-20]%	[...]	[10-20]%	[...]	[5-10]%	[...]	[20-30]%	[...]	[10-20]%	[...]	[10-20]%
Alstom	[...]	[10-20]%	[...]	[10-20]%	[...]	[5-10]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[5-10]%
GE	[...]	[0-5]%	[...]	[10-20]%	[...]	[10-20]%	[...]	[5-10]%	[...]	[5-10]%	[...]	[5-10]%
MHI	[...]	[5-10]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[5-10]%	[...]	[5-10]%	[...]	[5-10]%
BHEL	[...]	[0-5]%	[...]	[0-5]%	[...]	[5-10]%	[...]	[0-5]%	[...]	[0-5]%	[...]	[0-5]%
Others	[...]	[50-60]%	[...]	[40-50]%	[...]	[60-70]%	[...]	[50-60]%	[...]	[70-80]%	[...]	[50-60]%
All	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%

Source Form CO

<sup>12</sup> COMP/M.1484 – Alstom/ABB, para. 37.

**Table 20: EEA segment of the CCPP EPC solutions market 2006-2010**

Suppliers	2006		2007		2008		2009		2010		5 year average	
	MW	%	MW	%	MW	%	MW	%	MW	%	MW	%
Siemens	[...]	[10-20]%	[...]	[20-30]%	[...]	[20-30]%	[...]	[30-40]%	[...]	[40-50]%	[...]	[30-40]%
Alstom		[20-30]%	[...]	[30-40]%	[...]	[20-30]%	[...]	[5-10]%		[0-5]%	[...]	[10-20]%
MHI	[...]	[10-20]%	[...]	[0-5]%	[...]	[5-10]%	[...]	[10-20]%		[0-5]%	[...]	[5-10]%
GE		[0-5]%	[...]	[5-10]%	[...]	[10-20]%	[...]	[0-5]%		[0-5]%	[...]	[5-10]%
Ansaldo	[...]	[5-10]%		[0-5]%	[...]	[10-20]%		[0-5]%		[0-5]%	[...]	[5-10]%
Others	[...]	[30-40]%	[...]	[20-30]%	[...]	[10-20]%	[...]	[30-40]%	[...]	[50-60]%	[...]	[30-40]%
All	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%	[...]	[90-100]%

Source Form CO

50. The proposed transaction would give raise to vertically affected markets only at EEA level.
51. HRSGs are a critical component from a technological point of view and represent a relatively important part of a CCPP project, about 15% in value. Siemens produces HRSGs exclusively for its internal use and only [...] units per year; therefore it must source almost all the HRSGs from the market.
52. Market shares below 30% and HHI below 2000 are unlikely to lead to vertical issues<sup>13</sup>. Upstream, NEM only has market shares in excess of 30% ([30-40]%) in the potential market for small HRSGs at EEA level. However, Siemens' CCPP projects are provided almost exclusively<sup>14</sup> with large HRSGs. Downstream, Siemens' highest market share would be [30-40]% at EEA level, slightly over 30% and the maximum HHI index would be [slightly over 2000].
53. Siemens submits that its shares would not differ significantly in a market for turnkey projects.

**Input foreclosure**

54. The notifying party estimates that 30-60% of NEM's capacity would be reserved to Siemens' needs. However, Siemens submits that NEM would continue to supply the market given that demand in CCPPs is irregular and, supplying Siemens only would lower utilisation rate for NEM and could result in a loss of business. In addition, Siemens submits that not all types of NEM's HRSGs are of interest to Siemens.
55. Siemens defines capacity as the maximum number of projects per year that can be handled by one company. The total global HRSG capacity<sup>15</sup> is estimated at around [...] projects per year for large HRSGs and [...] projects per year for small HRSGs (regardless of how many HRSG units the relevant projects comprise). The non-captive capacity available in the market is estimated at [...] projects per year for small HRSGs and [...] for large

<sup>13</sup> Commission Guidelines on the assessment of non-horizontal mergers, OJ 2008 C 265, p. 6, ("Vertical Guidelines") para.25.

<sup>14</sup> Siemens has not purchased small HRSGs in its CCPP projects in the last 5 years

<sup>15</sup> The capacity limiting element is the number of engineers available to manage the individual projects, not the manufacturing capacity.

HRSGs. NEM has currently a maximum capacity of [...] small HRSG projects and [...] large HRSG projects per year.

56. A certain portion of NEM's output is already supplied to Siemens. NEM has a preferred supplier status. During the last 5 years, Siemens purchased on average 20-25% of NEM's large HRSG output. Consequently, NEM sells between [...] large HRSG projects per year to Siemens' competitors. Given NEM's upstream market shares and the magnitude<sup>16</sup> of the idle capacity of NEM's competitors, it appears that, if Siemens used all of NEM's output, still NEM's non-integrated competitors would have enough capacity to supply Siemens' competitors. Also, if Siemens were to use all NEM's capacity for large HRSGs for its own projects, equivalent additional capacity would be freed at NEM's competitors. This capacity could be used to supply Siemens' competitors downstream. In the potential market for small HRSGs, where NEM has high market shares, Siemens does not purchase and would have no incentive to stop selling small HRSGs to third parties after the transaction.
57. If Siemens were to convert NEM's capacity for small HRSGs to large, the capacity removed would be [...]% of the EEA market while non-integrated<sup>17</sup> EEA competitors have spare capacity amounting to about [...]% of the total EEA market. This would not be enough to enable them alone to replace NEM's output of small HRSGs. However, there will be pressure from integrated producers (whose spare capacity is estimated at [...]% by Siemens and which already supply HRSGs on the market) and from suppliers outside the EEA who do not currently export into Europe. In addition, NEM/Siemens submitted that it would take up to [...] years to retrain the engineers that design small HRSGs in order to be able to design large HRSGs. Therefore, Siemens would require a long period to switch NEM's production from small to large HRSGs and it is likely that the market would have time to adjust to the new situation.
58. The market investigation in the present case revealed that most competitors define their capacity in the number of project designs per year and that they consider the overall HRSG capacity utilization to vary in the range of 50% to 85%. Thus, Alstom and STF both estimate global overcapacity at 50%, while Nooter/Eriksen estimates that 'only 60% to 70% of HRSG design capacity is currently being utilized on a global basis'. There should, even on the most conservative approach to capacity utilisation be sufficient spare capacity for competitors to replace the [...] or [...] large HRSGs should Siemens decide to internalise all of NEM's production. Furthermore there [are]\* a number of producers in the Far East who do not currently operate in the EEA who could extend their operations if shortages occur in Europe. These include, HEC, SEC, DEC, Daewoo and Hyundai. The current penetration of Doosan (a Korean company) into the EEA market shows that Far Eastern producers can offer effective alternatives to the parties in the EEA.

\* clerical mistake

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<sup>16</sup> The current capacity utilisation rates are estimated by the Parties at approximately [...]% for captive suppliers and [...]% for suppliers with market facing activities

<sup>17</sup> Companies that supply the merchant market and do not have downstream activities in CCPP solutions

59. Most of the market investigation respondents believe that around five non integrated suppliers will remain in the EEA following the transaction, while around three times that figure will continue to operate in the global market.

### ***Customer foreclosure***

60. Siemens submits that, although it will raise its proportion of sourcing from NEM, it will not buy all NEM's capacity; Siemens estimates that only about [...]% of the yearly demand will be covered by NEM. Even if Siemens sourced all its HRSGs needs from NEM, it would still have to buy the largest part of its HRSG needs from the market. Siemens expects that in 2011 will require in total [...] large HRSGs for its CCPP business. However, NEM's total capacity is limited to [...] large HRSG projects only.
61. As mentioned, [...] % of NEM's large HRSG output is already used by Siemens. Thus, in the worst case scenario (that Siemens would purchase all NEM's large HRSG output), only approximately [...] more large HRSG projects per year would be purchased from NEM instead of NEM's competitors, thus Siemens would continue to buy about [...]% of its large HRSGs from the market.
62. As mentioned above, Siemens' market shares downstream are [10-20]% on the global market and circa [30-40]% on the EEA market. There are many important players at both levels. Therefore, it seems unlikely that Siemens would be able to foreclose access downstream after the proposed transaction.
63. Even if Siemens were to internalise NEM's entire output (at full capacity), Siemens would still need to source the larger part of its HRSG needs from the market.
64. For these reasons the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market regarding the said vertical link.

### ***Benson Technology Licensing***

65. During the market investigation the Commission's attention was drawn to the fact that after the concentration Siemens, as the owner of the patent for the Benson "once-through" technology, might withdraw this technology from the market by discontinuing to license other HRSG producers.
66. However, according to the HRSG producer Foster Wheeler, the HRSG technology is a mature technology so that it makes sense to license it. In any case Siemens main patent expires in [...]. Over half of the licences extend beyond the expiry date and the respective licensees account for about half of HRSGs built using the Benson technology. At least one potential customer believes that alternative technologies are already in the market.
67. The Benson technology does not appear to be very commonly used in the market. According to the Parties, Siemens started licensing in 2003 and since then a total number of [...] projects with [...] large HRSGs with the Benson technology have been

implemented. On this basis less than 5% of the HRSGs built after 2003 used this technology<sup>18</sup>.

68. Licences are typically for [...] years and the current licences ([...] excluding NEM) expire between [...] and [...] (the latest having been extended in [...]). The fact that Siemens has recently extended one of its licences for a further ten years is a practical illustration that the company has no interest in restricting access to the Benson technology
69. As NEM does not have enough capacity to supply all of Siemens' requirements for HRSGs, Siemens will have to purchase a substantial proportion of its HRSGs from other suppliers. Therefore, Siemens has no incentive to refuse to relicence existing licensees as this would reduce the pool of potential suppliers of HRSGs it could approach.
70. Even if Siemens were to restrict access to the Benson technology or refuse to extend existing licences this would be unlikely to have a significant effect on the market. Firstly [almost half of the] competitors have licences that extend beyond the expiry of Siemens' patent, secondly there is at least one alternative technology available and, thirdly, of the very large majority of HRSGs, over 95%, the Benson technology is not an issue.
71. On the basis of the elements set out above the Commission considers that the combination of Siemens Benson technology and NEM's HRSG production capacity will be unlikely to have any significant adverse effects on the markets concerned.

## **B.2. Boiler related I&C systems (upstream) - I&C systems for power plants (downstream)**

72. The product and geographic markets were described in section 30-32.

### **2.1 Assessment**

73. If the above activities were to constitute separate product markets and if these were vertically related, this would give rise to affected markets only at EEA level, where Siemens would have a [20-30]% market share in I&C systems for power plants.
74. However, this potential vertical link would not create any impediment to effective competition given the very small market share of NEM in boiler related I&C systems ([0-5]% at EEA level).
75. Given the above, it is unlikely that this potential vertical relationship will give rise to competition issues.
76. For these reasons the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market regarding the said potential vertical link.

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<sup>18</sup> Based on Siemens' estimate of [...] large HRSGs a year.

### **B.3. Boiler related I&C systems (upstream) – CCPPs (downstream)**

77. The product and geographic markets were described in sections 30-32 and 37-47.

#### **3.1. Assessment**

78. As mentioned, in the EEA, Siemens would have circa [30-40]% market share in CCPPs. However, the very low NEM's market share upstream ([0-5]% at EEA level) would make unlikely any foreclosure attempt after the merger.
79. Therefore, it is unlikely that this potential vertical relationship will give rise to competition issues.
80. For these reasons the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market regarding the said vertical link.

### **B. 4. Flue gas bypass systems (upstream) – CCPPs (downstream)**

81. The product and geographic market for CCPPs were described in sections 37-47.

#### **4.1. Flue gas bypass systems**

##### *4.1.1. Relevant product and geographic markets*

82. Flue gas bypass systems (including “diverters”) enable the simple-cycle mode in a CCPP, by providing the option of separating the HRSG from the hot gas path. This is an uncommon requirement in the EEA, but sometimes seen in the Middle East or Latin America. A diverter is a flap in an exhaust duct connecting the gas turbine outlet and the HRSG inlet. If, for operational reasons-like a malfunction of the HRSG-, the gas turbine exhaust gas flow should not go to the HRSG, the position of the flap can be changed in order to “divert” the exhaust gas away from the HRSG and release the gas turbine exhaust gas into the air.
83. Stack dampers are shut-off devices which can be installed on top of a HRSG chimney. By closing the damper “lid”, a cooling down of the boiler during temporary shut down can be prevented.
84. There is no need to precisely define the product and geographic markets in the present case in the absence of competition concerns.

##### *4.1.2. Assessment*

85. NEM would have a [10-20]%<sup>19</sup> market share at EEA level in the potential upstream market and Siemens circa [30-40]% market share in the EEA in the potential downstream

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<sup>19</sup> Average market share for 2006-2010



market. However, Siemens only sporadically purchases flue gas bypass systems (approximately [...] every one to two years) to be used in projects which are normally located outside of the EEA.

86. Given the above, it is unlikely that this potential vertical relationship will give rise to competition issues.
87. For these reasons the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market regarding the said vertical link.

## **V.CONCLUSION**

88. For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the functioning of the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EC) No 139/2004.

*For the Commission,*

*(signed)*  
*Joaquín ALMUNIA*  
*Vice-President*