

***Case No COMP/M.6082 -
CHINA NATIONAL
BLUESTAR/ ELKEM***

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

Article 6(1)(b) NON-OPPOSITION
Date: 31/03/2011

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EUROPEAN COMMISSION

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PUBLIC VERSION

MERGER PROCEDURE
ARTICLE 6(1)(b) DECISION

To the notifying party

Dear Sir/Madam,

**Subject: Case No COMP/M.6082 - CHINA NATIONAL BLUESTAR/ ELKEM
Notification of 24/02/2011 pursuant to Article 4 of Council Regulation
No 139/2004¹**

1. On 24 February 2011, the European Commission received a notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which the undertaking China National Bluestar Group Co., Ltd. ("Bluestar", China) acquires within the meaning of Article 3(1)(b) of the Merger Regulation control of the whole of the undertaking Elkem AS ("Elkem", Norway) by way of purchase of shares.

I. THE PARTIES AND THE OPERATION

2. **Elkem** is a Norwegian company owned by the Norwegian group Orkla ASA. Elkem is primarily active in the production and sale of (i) silicon related materials, namely silicon

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

metal, ferrosilicon and microsilica and (ii) carbon products such as electrode paste which are mostly used as carbon electrodes in electric furnaces.

3. **Bluestar** is a Chinese company primarily active in the production of new chemical materials, including silicones, petrochemicals, industrial cleaning products and membrane and water treatment products. Bluestar also produces silicon metal and microsilica. Bluestar is a subsidiary of China National Chemical Corporation ("**ChemChina**")², a diversified company active in the production of a wide range of chemical products. ChemChina is wholly owned by the People's Republic of China. ChemChina is reporting to the Assets Supervision and Administration Commission ("**SASAC**") operating on the central government level and established directly under the State Council.
4. On 10 January 2011, Bluestar and Orkla ASA entered into a Sales and Purchase Agreement pursuant to which Bluestar will acquire all shares and sole control in Elkem. The proposed transaction constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

II. EU DIMENSION

5. ChemChina and Elkem have a combined aggregate world-wide turnover of more than EUR 5 000 million [ChemChina: [...]; Elkem: EUR 627]³. Each of them has an EU-wide turnover in excess of EUR 250 million [ChemChina: [...]; Elkem: [...]], but they do not achieve more than two-thirds of their aggregate EU-wide turnover within one and the same EEA State.
6. Accordingly, the notified operation has an EU dimension. For the purpose of establishing jurisdiction, there is no need to decide whether turnover of other companies owned by the Chinese State and reporting to SASAC should be taken into account, as the turnover thresholds are met on the basis of ChemChina's and Elkem's turnovers alone.

III. COMPETITIVE ASSESSMENT

1. Independence of Bluestar/ChemChina

7. ChemChina is owned by the Chinese State. For the purpose of the competitive assessment in the chemical markets in question, it is relevant to assess whether ChemChina is an independent economic entity, or whether it belongs to a wider economic entity including more enterprises owned by the Chinese State active in the same markets.

² Bluestar is owned 80% by ChemChina and 20% by Blackstone, a private equity group.

³ Turnover calculated in accordance with Article 5(1) of the Merger Regulation and the Commission Consolidated Jurisdictional Notice (OJ C95, 16.04.2008, p1).

8. As regards state owned enterprises, Recital 22 of the Merger Regulation states however that, *in order to respect the principle of non-discrimination between the public and private sectors, account has to be taken of undertakings making up an economic unit with independent power of decision, irrespective of the way in which their capital is held or of the rules of administrative supervision applicable to them.*⁴
9. The Commission has in the past considered several concentrations involving undertakings owned by Member States.⁵ In those cases, the Commission assessed to what extent the companies concerned had an independent power of decision from the State.
10. In those cases, the overall assessment of whether the state-owned companies constitute units with independent decision making power was guided by the possible power of the State to influence the companies' commercial strategy and the likelihood for the State to actually coordinate their commercial conduct, either by imposing or facilitating such coordination.
11. In order to assess whether the State has the power to coordinate the commercial conduct of companies, the Commission has previously taken into account factors such as the degree of interlocking directorships between entities owned by the same entity or the existence of adequate safeguards ensuring that commercially sensitive information is not shared between such undertakings.
12. When assessing the chain of control of state-owned companies, the approach is, first, to establish whether it has an independent power of decision, and, second, if this is not the case, to determine which is the ultimate State entity and which other undertakings owned by this entity need to be considered as one economic entity.
13. In the present case, ChemChina is owned by the Chinese State. The ownership of Chinese State owned enterprises ('SOEs') lies either with the central government (under the State Council) or regional/municipal governments.
14. ChemChina is one of the approximately 125 large SOEs financed and owned by the central government. As an undertaking under central government ownership, ChemChina is reporting to the SASAC established on the central-level government under the State Council ('**Central SASAC**' or just 'SASAC'). The SOEs owned by provincial and regional/municipal authorities are reporting to a large number of regional-level SASACs ('**Regional SASACs**').
15. The Parties argue that ChemChina has independent power of decision from Central SASAC. They also argue that Local SASACs are independent from the Central SASAC and that as a result SOEs owned by regional/municipal governments are independent from SOEs owned by the central government. The Parties submit that the level of State intervention in China in the industry sectors relevant to this transaction is very minor.

⁴ See also the Jurisdictional Notice §§ 52, 53, 153 and 192-194.

⁵ See for example M.5508 Soffin/Hypo Real Estate; M.5861 Republic of Austria / HYPO GROUP ALPE ADRIA; M.931 Nestle/IVO.

16. As a preliminary point it should be noted that in China the chemical industry in which Bluestar and ChemChina operate, and more specifically the silicon industry in which Bluestar has most overlapping activities with Elkem, is characterised by relatively limited public ownership and a fragmented market structure.⁶
17. In order to assess a potential coordination by the state of the behaviour of several SOE's active on a relevant market the following sections look closer into the power of the Central and Regional SASACs to exercise decisive influence on Chinese SOEs.

ChemChina's and Bluestar's independence from Central SASAC and other undertakings reporting to Central SASAC

18. As regards ChemChina's and Bluestar's independence from Central SASAC, the parties explain that SASAC essentially exercises the basic ownership functions on behalf of the State as a non-managerial trustee. Apart from nominating the top management in the Company, SASAC's key functions are, according to the Parties, to review the end-year results of the company and ensure that the company is operating within the permitted business licence.
19. According to the Parties, SASAC does not interfere with the strategic decision-making of ChemChina, such as approval of the business plan or budget. The Parties explain that SASAC should respect, in accordance with the law, the independent operation of the SOEs in question and cannot interfere in their production and operational activities apart from performing the responsibilities of an investor.
20. The Parties also state that SASAC has to date not requested commercial information from ChemChina or in other way influenced the commercial operations of the company. They conclude that ChemChina enjoys independent power of decision from SASAC.
21. According to the information gathered via the Parties, the Central SASAC employs around 800 people. Generally, it is either Central SASAC or the central political organs who appoint senior management of the SOEs. Dividend policy is not established by SASAC on a company-by-company basis, but across the board for all SOEs reporting to it, similarly to a tax. Also, management remuneration is done according to a point system which takes different factors into account.
22. However, in this case it is not necessary to conclude on whether ChemChina is independent from Central SASAC, as the market position of the companies under Central SASAC is limited in the markets concerned. Accordingly, the proposed transaction would not lead to any competition concerns even if all other SOEs in the markets concerned under Central SASAC were to be regarded as one economic entity.

⁶ For example in the silicon metal market there are around 200 companies in China. Bluestar/ChemChina is the only SOE reporting to central SASAC active in that market. While there are several other SOEs owned at the regional/local SASAC level, together all state owned Chinese companies account for only about [10-20]% of Chinese silicon metal production (figure based on market share estimates provided by the Parties in their submission of 6 March). Most of the silicon metal companies in China are privately owned, and often the companies are small-scale businesses. This picture is confirmed by the market investigation.

ChemChina's and Bluestar's independence from Regional SASACs and undertakings reporting to Regional SASACs

23. According to the Parties and the studies and submissions provided by them, central SASAC has no operational control over local SASACs or undertakings under local SASACs' control.
24. First, it is submitted that the fundamental role both of central and local SASACs is to exercise separate ownership control. SOEs under Regional SASACs are owned by regional governments. Regional SASACs are therefore supposed to act primarily in their own interest and, apparently, not in the interest of the central government.
25. Secondly, managerial appointment authority for Regional SASACs seems to reside exclusively with local government and local political organs, not with Central SASAC.
26. Thirdly, it is submitted that there is no direct command-relationship between central SASAC and Regional SASACs. Central SASAC apparently cannot issue instructions to individual local SASACs, cannot replace managers and has no influence over Regional SASACs assets and revenues. Central SASAC can establish general procedures and principles that local asset management should rely on as they execute their mission.
27. Fourthly, Central and Regional SASACs are said to pursue different strategies and objectives. Regional SASACs do not hold the same type of firms as the strategically important firms under the responsibility of the Central SASAC.
28. Fifthly, it is submitted that there are significant regional differences between the strategies and processes of different Regional SASACs, which shows that central SASAC does not exercise strong authority over Regional SASACs and undertakings under their responsibility.
29. As regards the silicon industry, as already said at the centrally owned level there is only Bluestar/ChemChina. To the extent that other State owned enterprises have a presence in the industry their ownership is dispersed among the more than 100 Regional SASACs.
30. According to the parties, in light of the foregoing considerations, it can be excluded that Central SASAC through the channel of professional and regulatory oversight over Regional SASACs would be able to align the market behaviour of firms under the authority of Regional SASACs.
31. From the Commission's analysis it would appear that in the silicon and carbon industry sector relevant for this transaction, there is indeed no indication that Regional SASACs and the SOEs under their supervision would form one economic entity with Central SASAC and affiliated companies.
32. On a subsidiary basis the Commission has also examined the theoretical overlaps between Elkem and all other Chinese SOEs, including the ones reporting to Regional SASACs, operating in any of the markets concerned. Even under this assessment the transaction would not raise any competition concerns (see below).

No indications of other types of State co-ordination in the industries concerned

33. In the market investigation, the Commission has found no indications that in the markets concerned there would be any signs of other types of co-ordination.

Conclusion

34. In this case it is not necessary to conclude definitively on the ultimate control of ChemChina, as the position of the companies under Central and Regional SASACs control is very limited in the markets concerned. Accordingly, the proposed transaction would not lead to any competition concerns even if ChemChina and other SOEs operating in any of the markets concerned, under the Central and Regional SASACs, were to be regarded as one economic entity.

35. In light of the above, the remaining competitive assessment will be structured as follows: first, the decision will elaborate on the relevant markets and competitive assessment of Elkem's activities with the activities of ChemChina/Bluestar and of other Chinese SOEs in the markets concerned under Central SASAC. Then the decision will present the competitive assessment of other potential overlaps between Elkem and all other Chinese SOEs including the ones reporting to Regional SASACs in the markets concerned.

2. Overlaps of Elkem with Bluestar and other companies under central SASAC

36. Elkem's activities can be divided into two main areas: (i) production and sale of silicon-related materials comprising four main product groups, namely (a) silicon metal, (b) ferrosilicon (c) Elkem's Solar Silicon /Polysilicon and (d) microsilica and (ii) production and sale of carbon products, mainly carbon electrodes products used in furnaces for a number of heavy industries (e.g. to produce aluminium, ferroalloys or the silicon-related materials themselves). The assessment relative to each of the products is presented below. There are also certain vertical relationships which will be analysed thereafter.

(a) Silicon metal

Relevant Product market

37. One of the most important products of Elkem is silicon metal, which is produced by smelting a number of raw materials, namely silica (*i.e.* quartz) and other raw materials (coal, petroleum coke) in an electric arc furnace.

38. The output comprises a spectrum of different grades of silicon metal with a Silicon ('Si') content above 95 % containing varying levels of impurities (*e.g.* iron, aluminium, and calcium).

39. Silicon metal is used in (i) the production of silicon of extreme purity, referred to as polysilicon which is in turn used for producing solar cells or with an even greater purity for electronics (semiconductors and microchips). Other applications are (ii) the chemical industry (mainly as an input in the production of silicones and silanes and coatings) and (iii) in the production of aluminium which is then used in a number of industries such as car manufacturing.

40. In case COMP/M.1330 *Pechiney/Samacor*, the Commission considered a potential distinction between "chemical grade" and "metallurgical (aluminium) grade" silicon metal.

Although the market investigation in that case provided indications that chemical grade could constitute a separate relevant product market, the precise market definition has been left open.

41. In the present case, the Parties submit that the technical evolution since the Commission decision mentioned above enables fast and cost effective production switches in the silicon ("Si") content and impurity levels. Moreover, the Parties point towards a more customer specific production. In their views, these elements justify a product market definition covering the silicon metal market as such. In the Parties' view, if a further segmentation of the market would be necessary, this would have to be defined by customer type segments (*i.e.* aluminium, chemical and polysilicon). The three proposed customer type segments would partly overlap with the segmentation by chemical and aluminium "grade".
42. The market investigation indicated that silicon metal producers and customers generally tend to segment the market into grades or customer segments. The difference in grade would essentially relate to the level of different impurities and residual elements included in silicon metal. Chemical grade would be suitable for the chemical and polysilicon customers, whereas the metallurgical grade is suited for aluminium producers. The market investigation also indicated that on the supply side, at least some producers could switch production relatively easily.
43. However, the exact product market definition can be left open in this case as the transaction does not raise any competition concerns under either a wide market for silicon metal, nor under the respective market segments.

Relevant Geographic market

44. In line with Commission' conclusion in the case COMP/M.1330 *Pechiney/Samacor*, the Parties submit that the geographical scope of the silicon metal market is global.
45. The market investigation indicated that silicon metal is indeed shipped between different regions of the world. Transport costs are relatively low and do not constitute a major obstacle to trade of silicon metal. However, there are currently regulatory barriers for importing Chinese silicon metal into the EEA. China applies an export duty of 15% and the European Union applies an anti-dumping duty of 19% in addition to a customs duty of 5.5%. Accordingly only approximately 10% of the European consumption of silicon metal is met by production imported from China.
46. However, the exact geographic market definition can be left open in this case as the transaction does not raise any competition concerns under either a global or an EEA-wide market.

Competitive Assessment

47. On a global silicon metal market, Elkem achieves a market share of [5-10]% on a global level and [10-20]% in the EEA. Furthermore, Elkem has a share not exceeding [10-20]% both worldwide and in the EEA on all the possible market segments.⁷

⁷ I.e. the chemical segment/grade, aluminium segment/grade and the polysilicon segment.

48. Bluestar/ChemChina does not have any sales of silicon metal.⁸ No other centrally owned Chinese SOEs besides Bluestar produce silicon metal. Due to the absence of any overlap, silicon metal does not constitute a horizontally affected market.
49. The main vertical relationship between Elkem and Bluestar/Chemchina relate to Elkem's supply of silicon metal and Bluestar's downstream production of silicones, i.e. intermediary chemical products used in a high number of industries including automotive, healthcare, textile, sealants.
50. Bluestar operates a silicones plant in France purchased from Rhodia a few years ago which currently uses silicon metal from a variety of suppliers. If Bluestar would decide to backwards integrate with Elkem's input of silicon metal, Bluestar would follow the trend of vertical integration followed by its main competitors such as Dow Corning, Wacker and Shin Etsu.
51. In the market investigation, some of Elkem's customers expressed worries about the possible vertical integration of Bluestar's operations with Elkem's silicon metal, which in their view might limit the availability of silicon metal.⁹
52. These concerns are unfounded. First, input foreclosure is unlikely given relatively Elkem's limited position on the silicon metal markets (as showed above).
53. Second, there are significant alternative suppliers present on the market, notably FerroAtlantica (market share of [10-20]% globally and [20-30]% in the EEA), Globe Specialty Metals ([10-20]% global share, [10-20]% EEA) and a number of other suppliers including European, Brazilian and privately-owned Chinese companies.
54. Third, Bluestar's downstream operations currently source silicon metal either internally or from the merchant market (notably for the French plant). If Bluestar decides to vertically integrate with Elkem, the volumes supplied currently to Bluestar by other producers will become available in the market, meaning that there would be no net change in the volumes supplied to the merchant market.
55. Customer foreclosure is excluded as Bluestar and any other Chinese SOEs under Central SASAC represent only a limited fraction of the total global demand of silicon metal (always below [10-20]%), including for the respective market segments. No concerns were raised in the investigation.
56. Therefore the transaction does not give rise to competition concerns in respect of the supply of silicon metal under any alternative market definition.

⁸ Blustar/ChemChina only produces silicon metal for its captive use, amounting to a global share of production not exceeding [0-5].

⁹ Bluestar plans to execute a relocation project in the US (done independently of the Elkem acquisition), however the project will not lead to increased requirements of silicon metal.

(b) Ferrosilicon

Relevant product market

57. Ferrosilicon ("FeSi") is an alloy of iron and silicon, with a content of silicon ranging between 15-95%. It is produced through the reduction of silica or sand with coke in presence of scrap iron, millscale or other sources of iron. It is mainly used in the steel industry to deoxidise steel and improve its strength. Other ferrosilicon-based products are also used in the foundry industry, notably in enhancing the properties of cast iron.
58. According to the Parties, the overall ferrosilicon market could be divided into two segments based on customer use: (i) the steel industry segment and (ii) the foundry industry segment.
59. Within the steel industry segment, the Parties distinguish between several possible sub-segments with different application areas, such as Standard FeSi, (mainly used for deoxidisation purposes) and Specialty FeSi, containing FeSi with combined with different content levels of other elements.¹⁰
60. Within the foundry industry segment, the Parties distinguish between (i) magnesium ferrosilicon ("MgFeSi"), mainly used for nodularising cast iron and manufacturing ductile iron, and (ii) inoculants which are products where the FeSi is mixed with some other elements. Inoculants are added to cast iron to improve graphite structure and mechanical properties.
61. However, the Parties point out that supply-side substitutability is substantial, in that producers may shift production between the various segments quickly and at small cost (e.g. adjusting charge materials in the same furnace), and therefore consider that the relevant market is that for the production of ferrosilicon encompassing all the segments mentioned above.
62. The market investigation indicated that generally both ferrosilicon competitors and customers consider that the steel and the foundry segments could constitute distinct segments within the overall ferrosilicon market. This is mainly due to their different uses and customer specifications. In particular, certain customers indicated that while the steel industry buys ferrosilicon as a standard commodity with few deviations, the foundry industry usually requires tailor-made alloys.
63. As regards a possible further sub-segmentation of the two segments by application areas, competitors indicated that there may be interchangeability on the production side between the various sub-segments by adjusting the primary input mix and crushing equipment. However, certain competitors indicated that a possible switch to MgFeSi would comparatively be more difficult and costly, notably due to the costs involved in investing in the magnesium production process. In addition, while a competitor expressed the view that customers can interchangeably use different sub-segments by using different FeSi grades to achieve the required properties, most customers indicated

¹⁰ Namely (i) Low Carbon FeSi used to keep the content of carbon inclusions low in final steel, for instance stainless steel, (ii) High Purity FeSi used in alloying steels that require stringent control levels of inclusions and carbon content, such as ball bearings and tyre cord and (iii) Low Aluminium FeSi used to keep the content of aluminium inclusions low in final steel, for instance in order to avoid surface defects.

that they could not substitute a different sub-segment for the one they require due to technical limitations and inherent quality differences between the various sub-segments.

64. However, the exact product market definition can be left open in this case as the transaction does not raise any competition concerns under either a wide market for ferrosilicon, nor under the respective market segments.

Relevant geographic market

65. As regards ferrosilicon, the Parties are of the opinion that the market should be considered as worldwide in scope. Nevertheless, the Parties also indicate that China imposes a 25% export duty on Chinese FeSi exports and there is an EU import duty of around 5.5% on imports into the EEA from China and anti-dumping duties of 15-33.5%, meaning that trade from China to EEA is limited.
66. With regard to the geographic market, the market indicated that generally ferrosilicon is supplied globally into all regions from plants across the world, transport costs are relatively low (around 10-15% of the ferrosilicon price) and there are no specific trade barriers. Nevertheless, certain customers expressed the view that for some of the sub-segments, notably for the Specialty FeSi and the MgFeSi and inoculants sub-segments, the market could be restricted to Europe and the US (possibly also encompassing South Africa/South America) due to the anti-dumping duties imposed on Chinese ferrosilicon imports as well as the fact that prices in these world regions tends to be higher than China.
67. In any event, it is not necessary to conclude on the exact geographic market definition, as the transaction does not give rise to competition concerns under any alternative market definition considered.

Competitive Assessment

68. While Elkem is active in the production of ferrosilicon, Bluestar/ChemChina is not active in this field. However, there are some Chinese SOEs under the central SASAC who are producing ferrosilicon.
69. If Chinese SOEs under the central SASAC were to be included, and according to the Parties' estimates, the combined market shares of Elkem and those Chinese SOEs would amount to a maximum of [5-10]% on the global ferrosilicon market. The share would be [5-10]% and [10-20]% for the worldwide steel industry and foundry industry segments respectively. With regard to the sub-segments, the combined market shares would amount to around [0-5]% in Standard FeSi, [10-20]% in Low Carbon FeSi, [10-20]% in Low Aluminium FeSi, [10-20]% in High Purity FeSi, [10-20]% in MgFeSi and [20-30]% in inoculants.
70. In the EEA, while Elkem's market shares are higher, no overlap or only a negligible market share increment (less than [0-5]%) arises from the transaction, as there are no or limited imports of ferrosilicon products from Chinese SOEs under the central SASAC due to anti-dumping duties imposed on Chinese ferrosilicon.
71. In addition to the relatively limited market shares, the market investigation has also confirmed that there is a number of strong equally large ferrosilicon producers such as FerroAtlantica and FESIL as well as other competitors such as Globe, Finnfjord, Dow Corning, Serov, Lipetsk, South American producers (Nova Era, Minas Ligas, Ferbasa)

and many often privately owned Chinese producers, that are active more or less in all the ferrosilicon segments/sub-segments.¹¹

72. Customers also indicated that they tend to multi-source ferrosilicon at the worldwide level given the relatively low transport costs, especially with regard to the steel industry segment, while most of them stated that qualifying new suppliers able to provide them with ferrosilicon of the quality level required would not take more than 9 months/1 year.
73. Therefore the transaction does not give rise to competition concerns in respect of the supply of ferrosilicon under any alternative market definition.

(c) Elkem's Solar Silicon /Polysilicon

Relevant product market

74. Polysilicon is an extremely pure form of refined silicon (containing more than 99.99999% silicon) produced by silicon metal. Polysilicon is used, through producing wafers, for producing solar cells or with an even greater purity for electronics (semiconductors and microchips).
75. The Parties indicate that due to the difference of intensity and costs in their production processes as well as their differences in customer use, the polysilicon market could be divided into (i) solar grade polysilicon, which is mainly used in the production of photovoltaic wafers for solar cells, and (ii) the purer, more expensive electronic grade silicon, used in electronic components such as semiconductors.
76. While Elkem does not produce polysilicon, it does produce a product called Elkem's Solar Silicon ("ESS") by means of a metallurgical refining process. The product does not achieve the chemical properties of polysilicon, but it is used by certain manufacturers of solar cells alongside conventional polysilicon, mainly in order to drive down manufacturing costs. Thus, ESS is to a certain extent substitutable with (solar grade) polysilicon, at least for certain solar wafers/cells producers.
77. If ESS would be considered as a part of the (solar grade) polysilicon market, there would be a horizontal overlap with Chinese companies, including SOEs under Central SASAC.
78. The market investigation indicated that from a demand side, it may be pertinent to distinguish between solar grade and electronic grade polysilicon, with a majority of respondents alluding to the stricter requirements for electronic grade polysilicon in terms of purity of silicon content and contamination of metals. In addition, certain respondents indicated that whilst electronic grade polysilicon could be used in solar applications, the approval process of solar grade polysilicon by semiconductor manufacturers would be more difficult given their particularly high requirements such as, for instance, surface treatment. However, customers pointed out that certain of their polysilicon suppliers do produce both electronic grade and solar grade polysilicon.

¹¹ In addition, even if exports from Chinese producers were to be considered low due to the export/anti-dumping duties imposed, there is still a variety of European, US and South American producers able to meet ferrosilicon demand.

79. The market investigation also suggests that while certain customers may use ESS for production of solar wagers/cells alongside polysilicon, the substitutability is not clear-cut. Certain respondents indicated ESS cannot be clearly viewed as a substitute to conventional polysilicon that due to different production process, its higher impurity levels compared to conventional polysilicon, as well as certain costs associated with adapting the production processes in order to use ESS.
80. Nevertheless, for the purposes of this decision, the question on whether ESS should be considered as forming one market with conventional polysilicon (or solar grade polysilicon) can be left open, as under either market definition no competition concerns would arise from the operation. It can also be left open whether solar and electronic grade polysilicon shall be distinguished.

Relevant geographic market

81. The parties submit that the geographic market for the production of polysilicon is worldwide in scope, as polysilicon is traded globally and there are no barriers to trade. They nevertheless point out that Chinese polysilicon production is consumed entirely in China, notably due to high domestic demand and quality requirements of Western customers.
82. The market investigation indicated that polysilicon is indeed supplied globally into all regions from plants across the world, transport costs are low (less than 3% of the polysilicon price), there are no specific trade barriers and prices do not significantly differ between world regions. However, certain respondents pointed out that polysilicon supplies from China are often more difficult to obtain, notably due to quality concerns and certain Chinese export restrictions and taxation rules.
83. In any event, it is not necessary for the case at hand to conclude on the exact product and/or geographic market definition, as the transaction will not give rise to competition concerns under any alternative geographic market definition considered (global or EEA).

Competitive Assessment

84. Elkem produces its proprietary ESS, and its production is relatively limited (amounting to [...] kT in 2010. If Eklem's ESS were to be considered a distinct market to conventional polysilicon, there would be no overlap with the production of conventional polysilicon by Chinese SOEs.).
85. If ESS would be considered as being part of the broader polysilicon market, the market shares of Elkem would be very minor, amounting to [0-5]% on a global level. All Chinese SOEs under the central SASAC active in the production of solar grade polysilicon (including ESS) would amount to [5-10]% at the worldwide level. The combined share would thus amount to [5-10]% amount there is thus no affected market in this regard.
86. The Commission's market investigation did not indicate any competition concerns.
87. Therefore the transaction does not give rise to competition concerns in respect of the supply of polysilicon for solar use under any alternative market definition

(d) Microsilica

Relevant product market

88. Microsilica is a by-product of both silicon metal and ferrosilicon production. Initially discharged in the atmosphere as a pollutant, microsilica is now collected and sold as an additive for various uses.
89. "Regular quality" microsilica, which accounts for around 90% of microsilica is used as an additive to concrete. The other 10 % is used in refractory products, in fibre cement and in ceramics (mainly as "high quality" microsilica).
90. The Parties submit that other products can be used for the same purpose as microsilica, for example, ground blast furnace slag, coal fly ash and metakaolin.
91. The market investigation provided indications that some customers may use other products as alternatives to microsilica, fulfilling the same functions, but it was not conclusive on this point. It was also indicated that adaptation of the production process from regular quality microsilica to high quality microsilica is possible, although it was not clear how difficult this might be.
92. In any case, given no competition concerns arise under any alternative, it is not necessary to conclude on the precise scope of the market in this case.

Geographic market

93. The Parties submit that given the relatively high transportation costs, which may often reach 50% of the product value, the geographic scope for a market in regular quality microsilica is regional (EEA) in scope. The Parties submit that if high quality microsilica is considered to form a separate market this should be considered as worldwide in scope.
94. The market investigation indicated that regular microsilica is indeed predominantly sourced regionally as the transport costs are high.
95. In any event, given that this transaction does not give rise to competition concerns under either alternative market definition identified, it is not necessary to conclude on the precise geographic market.

Competitive Assessment

96. Elkem produces both high quality microsilica and regular microsilica. However, there is no overlap in high quality microsilica as no Chinese SOEs under central SASAC produce high quality microsilica. No affected market would therefore arise.
97. Bluestar produces regular quality microsilica in China which is not sold into the European market due to its high transportation costs. No other Chinese SOEs under central SASAC produce microsilica.
98. Therefore an overlap only arises at a worldwide level in respect to (regular) microsilica. With regard to the overall microsilica market, the combined market shares of Elkem and Bluestar would be [20-30] per cent with an increment of [0-5] % coming from Bluestar. In the segment of regular microsilica, the combined share is [20-30]% with an overlap of [0-5]%.

99. The market investigation confirmed that there are a number of alternative suppliers. No competition concerned were expressed in the investigation in relation to the supply of microsilica.
100. Therefore the transaction does not give rise to competition concerns in respect of the supply of microsilica under any alternative market definition considered.

(e) Carbon Products

Relevant product market

101. Carbon products such as electrodes are used in electric arc furnaces in the production of silicon metal/ferrosilicon and in the production of other metals such as aluminium or ferroalloys.
102. Elkem produces two types of consumable electrodes, namely Söderberg electrode paste (SEP) and prebaked carbon electrodes. Prebaked carbon electrodes are made of SEP which is 'baked' at high temperatures to produce a solid stick up to several metres long which can be put directly into a furnace and can serve as an electrode. SEP itself is a powder-like product and has to be put into casings and baked to produce prebaked carbon electrodes.
103. Elkem also manufactures cathode blocks which are used in the manufacture of aluminium (unlike the electrodes used in the production of ferrosilicon and silicon metal, the cathode blocks are not consumable electrodes, but used for a number of years). Elkem also produces ramming paste which is mainly used between the cathode blocks in the aluminium electrolytic cells to seal the cells.
104. In addition to these carbon products which are linked to the electrolytic process, Elkem also produces recarburizers, used to add carbon to iron and steel melt in order to raise the carbon content of the finished material. The Parties consider that other material containing carbon can be used as substitutes for this.
105. The Parties submit that, from a demand perspective, customers would not switch between the above-mentioned carbon products. However, they argue that supply-side substitutability between these products would call for a broad market definition encompassing all carbon products.
106. Nevertheless, given that no competition concerns arise as a result of the merger in relation to these products either taken individually or collectively, the question of whether they can be considered to be substitutes has been left open.

Relevant geographic market

107. The Parties submit that the market for carbon products is worldwide in scope. In support of this they indicate that Elkem itself sells its carbon products worldwide. However, the Parties also admit that given the high cost of transporting some end products a regional presence is desirable, and therefore Elkem has production plants in various regions where customers are located.
108. The market investigation broadly confirms the parties submission that the market for at least carbon products may be worldwide. However, it was also noted that the market could be narrower for products such as SEP and ramming paste which have higher

transport costs. It was also noted by several third parties that for these products in particular there may be adequate European production so that imports from further afield are not required.

109. In any event, it is not necessary to conclude on the exact product and geographic market definition, as the transaction will not give rise to competition concerns under any of the plausible alternative market definitions.

Competitive Assessment

110. In the markets for pre-baked electrodes and recarburizers there are no overlaps between Elkem and the Chinese SOEs operating under central SASAC and in any event Elkem's market presence in both of these markets is limited (at [0-5]% of the global market for each).
111. For ramming paste, the combined global share of Elkem and the Chinese SOEs operating under the central SASAC would be [10-20]% ([5-10]% Elkem and [5-10]% for the Chinese SOEs). On the basis of an EEA wide market no overlap is created as imports from China are negligible.
112. For SEP, the combined global market share of Elkem and all Chinese SOEs operating under the central SASAC would be just below [10-20]% (Elkem has a market share of [10-20]%, and Chinese SOEs under central SASAC have [0-50]%). On the basis of an EEA wide market there would be no overlap.
113. For cathode blocks, Elkem's global market share is [0-5]% (Elkem sells toll-manufactured cathode blocks on the Chinese market). Chinese SOEs operating under central SASAC have a share of [10-20]%, and the combined share would be [10-20]%. Other competitors much larger than Elkem are present on the market such as SGL Carbon ([10-20]%), Carbon Savoi/Rio Tinto ([10-20]%) and other western producers. On the basis of an EEA wide market there would be no overlap, and Elkem itself is not supplying any EEA-customers.
114. The market investigation has shown that there are enough alternative suppliers in the market(s) for carbon products from producers such as SGL Carbon, SEC Carbon, James Durrans, Rhenfeldon Carbon, Vamtec, VUM and others. Some competitors also pointed out that there has been capacity expansion recently. The market investigation did not reveal any competition concerns.¹²
115. Therefore, the transaction does not give rise to competition concerns in respect of the supply of the carbon products discussed, even taking into account the narrow market definition.

¹² One third party expressed the belief that Elkem is a significant supplier of an intermediary product called Electro Calcined Anthracite (ECA) used in the production of carbon products such as Soderberg electrode paste, and that the merger would reduce alternatives on the market. However, Elkem has virtually no sales of this product which it uses captivity for own production of carbon products. Elkem's sales to the merchant market stemming from one customer only represented less than [0-5]% of the global market. Elkem has not supplied ECA significantly in the last 3 years and cannot be regarded as an important supplier to the market. Even based on a worldwide production capacity, Elkem together with all SOEs under central SASAC would have a share of [5-10]% (the theoretical share would be [10-20]% in case of all SOEs under both central and local SASAC were taken into account).

(f) Vertical relationships

116. Apart from the vertical relationship between Elkem's silicon metal production and Bluestar's downstream production of silicones discussed in section (a) above, there are a number of other potential vertical relationships between Elkem and Chinese companies operating in the relevant product markets under Central SASAC.
117. First, those theoretical relationships would arise upstream of Elkem's production, i.e. in relation to various raw material inputs (such as quartz, pitch, coal, woodchip etc.) used by Elkem and produced by Chinese SOEs under central SASAC. This potential relationship would not arise on EEA level but only on a worldwide level, as Chinese raw materials are not extracted/produced in Europe and Elkem would have to procure those in China.
118. However, in relation to these raw material markets no vertically affected markets arise (save of one exception described below), as Elkem does not achieve a worldwide market share in excess of 25% on any of the markets where it is active (downstream markets), and the Chinese SOEs under central SASAC do not achieve a worldwide market share in excess of 25% on any of the upstream markets for raw materials. The only exception to this is the overall market of pitch where the Chinese SOEs under central SASAC have a global market share in excess of 25%.
119. No input nor customer foreclosure are likely to arise as a result of the transaction in relation to the raw materials upstream of Elkem's production. With market shares below 25%, the Chinese SOEs under central SASAC are unlikely to have any market power capable to cause input foreclosure. As regards potential customer foreclosure, Elkem is consuming only a fraction of the global demand of the raw materials in question. The market investigation did not indicate any foreclosure concerns related to raw materials.
120. In relation to pitch specifically, no input foreclosure is likely to arise either as a result of the transaction. Elkem uses only one specific type of pitch where the Chinese SOEs under central SASAC have a global market share of below [10-20]% (and thus likely no market power) and several other producers are available.¹³ In addition, the parties explain that pitch imports from China represent only less than 1% of European pitch consumption, and there is sufficient availability of pitch from European sources. No foreclosure concerns in relation to pitch were voiced by any market participants in the investigation.

¹³ Pitch can be made from petroleum products as a by-product of oil refining (petro pitch), from coal tar (coal tar pitch), or from plants (bitumen). Elkem uses only one type of pitch - coal tar pitch - as binding agent in the production of electrode paste and other carbon products. according to the parties there is no alternative for coal tar pitch for customers like Elkem. Pitch in general is consumed in a number of industries, the most important application for pitch is in the construction of roads. Pitch is also used inter alia as a binding agent in the coal industry and as sealing agent in the shipping industry.

121. Second, there are theoretical vertical relationships between Elkem's products (upstream products) and downstream products produced by Chinese SOEs under central SASAC. These potential relationships would not arise in Europe (except of Bluestar's French silicones operations analysed in section (a) above), but would arise only on a worldwide level.
122. As regards input foreclosure, Elkem does not have market power on any of the (upstream) markets on which it is active, as was elaborated above in the competitive assessment of all the horizontal relationships. Input foreclosure is therefore unlikely. As regards potential customer foreclosure, Chinese SOEs under central SASAC globally consume only a limited part of all the products in the markets on which Elkem is active. No foreclosure concerns were raised in the investigation.
123. For the reasons above, the transaction does not raise any competition concerns on the above product markets arising from the potential vertical relationships between Elkem and other Chinese SOEs in those markets under central SASAC.

3. Assessment of other potential overlaps between Elkem and all Chinese state-owned companies including those under Regional SASACs

124. As explained above (paragraph 33), the Commission has also examined other potential overlaps between Elkem and all other Chinese SOEs including the ones reporting to Regional SASACs operating in the markets concerned. Even under this assessment the transaction would not raise any competition concerns.
125. The Parties have provided information about the ownership structure of the Chinese companies active in the sectors concerned.¹⁴ Based on this information, they have calculated hypothetical market shares combining all Chinese publically owned companies reporting to both Central and Regional SASACs.
126. As public ownership in the sectors concerned is limited the combined market shares of Elkem with all Chinese SOEs on all relevant markets are quite limited and do not indicate any competition concerns.
127. Indeed, based on the market share information provided by the Parties¹⁵, the combined market share of Elkem with Chinese SOEs (reporting under both Central and Regional SASAC) do not exceed 25% on any of the markets or market segments where Elkem is active¹⁶ except of one small exception of cathode blocks (see below). These

¹⁴ The Parties based the ownership information on Chinese company registers. Where there was a very large number of Chinese companies active in a particular market (for example around 200 for silicon metal), the Parties analysed individually the ownership situation in up to 40 largest companies, which constituted a significant part of the Chinese output. The ratio between publicly and privately owned companies as found among the top market players was assumed for the fringe competitors. Based on the evidence about the markets concerned (such as the presence of a large number of small family-owned undertakings), there is no reason to believe that the ratio would be less favourable to privately owned companies. The Parties have allocated all companies with any public shareholding (incl. minority shareholdings) into the category of publicly owned.

¹⁵ Parties' submission of 6 March 2011 including merchant market shares of Elkem, Chinese companies (public and private) and other main competitors on all markets and segments where Elkem is active.

¹⁶ Namely silicon metal, ferrosilicon, microsilica, ESS/polysilicon, carbon products, including all market segments considered for all these markets.

limited hypothetical combined market shares are within the range identified in the Horizontal Merger Guidelines for which it is unlikely that competition concerns would arise.¹⁷ The market investigation has not indicated any competition concerns either.

128. As regards cathode blocks, as explained earlier in the decision, Elkem's global market share is *de minimis* at [0-5]% and the transaction would not bring about any significant change in the market structure.¹⁸ Furthermore, no competition concerns were raised in the market investigation.
129. In relation to other vertical relationships between Elkem and all other Chinese SOEs in such markets, no competition concerns would arise in relation to products upstream of Elkem (raw materials), neither to downstream products.
130. For upstream raw material products, customer foreclosure is unlikely as Elkem is only a small buyer of these inputs in comparison to worldwide demand. No competition concerns were expressed in that regard in the market investigation.
131. Likewise, input foreclosure is unlikely to occur in relation to the supply of raw materials. Even if all Chinese SOEs combined would have any market power on any of the upstream products, Chinese SOEs are already now present in both the silicon-related and carbon businesses where Elkem is active. Apparently, this vertical integration of Chinese SOEs does not preclude Elkem or any other non-Chinese companies to have access to those raw materials. There is no reason to believe that the acquisition of Elkem by Bluestar would change the situation materially. No competition concerns were expressed in that regard in the market investigation.
132. The transaction is unlikely to result in any customer foreclosure. Elkem currently does not rely on Chinese SOEs as its significant customers, and it is unlikely that other western producers would do so, as there is significant domestic supply in China. It therefore is unlikely that Elkem's competitors would be deprived of market accesses. In any event, there are already now vertically integrated Chinese SOEs active on the upstream markets concerned (i.e. Elkem's competitors). Thus, the acquisition of Elkem would not significantly change the landscape in that regard. No competition concerns were expressed in that regard in the market investigation.

¹⁷ See paragraph 18 of the Horizontal Merger Guidelines.

¹⁸ Elkem's global share in the supply of cathode blocks is [0-5]%, and comes from its sales to the Chinese market where it sells cathode blocks toll-manufactured by a third party in China. Chinese SOEs operating under both central and local SASAC would have a share of [30-40]%. The combined share would be [30-40]%. Other competitors much larger than Elkem are present on the market such as SGL Carbon ([10-20]%), Carbon Savoï/Rio Tinto ([10-20]%) and other western producers. On the basis of an EEA wide market there would be no overlap, and Elkem itself is not supplying any EEA-customers.

133. Input foreclosure is also unlikely as Elkem does not have market power on any of the (upstream) markets on which it is active, as was elaborated above in the competitive assessment of the horizontal relationships. No competition concerns were expressed in that regard in the market investigation.

134. For the above reasons, it is very unlikely that the transaction would create any competition concerns in the market concerned, even taking into account other potential overlaps of Elkem with other Chinese SOEs operating in the markets concerned.

IV. CONCLUSION

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

*For the Commission
(signed)
Neelie KROES
Vice-President*