Case No: 73917
Event No: 660390
Dec. No: 304/13/COL

EFTA SURVEILLANCE AUTHORITY DECISION

of 10 July 2013

on the aid to Elkem AS for an energy recovery system
(Norway)

The EFTA Surveillance Authority ("the Authority"),

HAVING REGARD to:

The Agreement on the European Economic Area (the "EEA Agreement"), in particular Article 61(3)(c) and Protocol 26 thereof,

The Agreement between the EFTA States on the Establishment of a Surveillance Authority and a Court of Justice (the "Surveillance and Court Agreement"), in particular Article 24,

Protocol 3 to the Surveillance and Court Agreement ("Protocol 3"), in particular Article 4(3) of Part II,

WHEREAS:

I. FACTS

1. Procedure

(1) By letter dated 11 June 2013,[1] following pre-notification contacts, the Norwegian authorities notified to the Authority, state aid to Elkem AS ("Elkem"), pursuant to Article 1(3) of Part I of Protocol 3. By email of 12 June 2013,[2] the Norwegian authorities submitted further information.

[1] Events No 674892-674903.
[2] Event No 675180.

2. The notified measure – a grant of NOK 350 million

(2) The Norwegian authorities intend to grant NOK 350 million (approximately EUR 47.85 million)[3] to Elkem for the construction of an energy recovery system at its silicon production plant in Salten ("Elkem Salten") in the north of Norway.

3. The recipient – Elkem AS ("Elkem")

(3) Elkem is a limited liability company active in the production of special alloys, carbon, solar grade silicon, silicon and microsilica. It operates production facilities in Europe, North and South America, Africa and Asia. It employs approximately 2 400 individuals and its operating revenues in 2011 were NOK 9.5 billion. Elkem qualifies as a "large enterprise" within the meaning of the Authority's Guidelines on state aid for environmental protection ("the EAG").[4]

(4) The Norwegian authorities have confirmed that Elkem is not in financial difficulties.

(5) Until recently Elkem was owned by Orkla ASA. In 2011, Orkla ASA sold Elkem to China National Bluestar Group Co., Ltd. ("Bluestar"), a Chinese company primarily active in the production of new chemical materials as well as silicon and microsilica. The transaction was notified to the European Commission ("the Commission") which decided that it did not raise competition concerns and therefore was compatible with the functioning of the internal market and with the EEA Agreement.[5]Elkem is currently a 100% subsidiary of Bluestar which in turn is owned by China National Chemical Corporation (80%) and the Blackstone Group (20%).[6]

4. The energy recovery system

(6) Elkem Salten produces silicon and microsilica by smelting quartz (SiO_2) with the help of coal and coke in electric arc furnaces in temperatures exceeding 1811 °C.

(7) The energy released in the production process is currently not recovered. The flue gases are merely cooled with air in order not to damage the production equipment. It is thereafter led through steel pipes to bag house filters (i.e. dust cleaning installations) to be released into its surroundings.

(8) With the notified measure, Elkem intends to replace parts of the existing installations with an energy recovery system. To that end, Elkem intends to install new insulated ducts to lead the hot flue gases from the furnaces into boilers, where the energy will be converted into steam. The steam will power a turbine that will produce electricity.

(9) The aim is to recover 300 GWh per year in order to reduce Elkem Salten's annual electricity consumption off the grid from 942 GWh to 642 GWh.

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[3] The conversions between NOK and EUR in this decision are based on the Authority's annual exchange rates, published online at the following url. http://www.eftasurv.int/state-aid/rates/. In 2013 EUR 1 = NOK 7.315.

[4] See the EAG (OJ L 144 10.6.2010 p. 1), point 70(16) and (17) and the Authority's Guidelines on aid to micro, small and medium-sized enterprises (OJ L 36 5.2.2009 p. 62) which now set out the relevant definition of a "large enterprise".

[5] Commission Decision COMP/M.6082 – China National Bluestar/Elkem of 31.3.2011 (OJ C 274 17.9.2011 p. 7).

[6] See http://www.elkem.com/en/About-us/Organisation/.

5. Products

5.1 Silicon

(10) Elkem Salten has two furnaces that produce silicon with a silicon content generally in the range of 95-98%. It also has one furnace that in addition to the aforementioned can produce silicon with a silicon content above 99%. Although technically feasible, it is not cost efficient to produce anything but above-99% grade silicon in the third furnace.

(11) The silicon produced by Elkem is, depending on its grade, used by the electronics industry, the chemical industry and used for aluminium alloys.

(12) According to the Norwegian authorities, the relevant product market is the market for silicon whose geographical scope is global. The Norwegian authorities submit that, even though the different silicon products cannot generally replace each other from a customer perspective (e.g. chemical grade silicon cannot be used for the production of aluminium), producers can, with the limitations explained above, produce different grades of silicon with the same equipment.

(13) Elkem's silicon customers are all located in Europe. According to the Norwegian authorities, Elkem's market share in the EEA market for silicon is 14%. Elkem's main competitor is FerroAtlantica with a market share of approximately 26% in the EEA. According to the Norwegian authorities, there are a number of other competitors in Brazil and China, which provide silicon products to European customers.

5.2 Microsilica

(14) Elkem Salten also produces microsilica, which is a by-product of the silicon production process. Elkem Salten produces both high quality and regular quality microsilica. The Norwegian authorities argue that there are two separate product markets for these products; the relevant product market for high quality microsilica is global and that of the regular quality microsilica is more regionalised due to the high transportation costs in relation to the value of the product.

(15) The Authority understands that high quality microsilica is used in refractory products, in fibre cement and in ceramics. Regular quality microsilica is used as an additive to concrete. The Authority understands that microsilica can be replaced by a wide range of other materials with the same abilities, such as rice husk, fly ash and silica sand. There are a number of alternative suppliers of both qualities of microsilica.

(16) The Authority notes that, in its decision on the purchase of Elkem by China National Bluestar, the Commission left open the questions whether the market for microsilica should be subdivided into microsilica of different qualities and whether the markets for these qualities of microsilica were global or merely EEA-wide.[7] However, the Commission did note that the market investigation showed that there are a number of alternative suppliers and that no competition concerns were expressed in the investigation in relation to the supply of microsilica.[8]

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[7] China National Bluestar/Elkem (cited above), para. 95.
[8] China National Bluestar/Elkem (cited above), para. 99-100.

6. Regulatory framework

(17) According to the Norwegian authorities there are currently no national or EU standards applicable to internalise the negative externalities in the market for the production of silicon or microsilica. Furthermore, the Norwegian authorities have confirmed that, to their knowledge, there are no plans to introduce such standards. In addition, the Norwegian authorities have confirmed that there are no plans to introduce additional taxes on the consumption of energy in this sector.

(18) On the contrary, the Norwegian authorities intend to grant aid to energy-intensive sectors which are exposed to a significant risk of carbon leakage. Carbon leakage describes the prospect of an increase in global greenhouse gas emissions when companies shift production outside the EEA because they cannot pass on the costs increases induced by the emissions trading system to their customers without significant loss of market share. Guidelines for the granting of such aid have therefore been introduced (the ETS Guidelines).[9] These guidelines allow for aid to silicon producers.[10]

7. The Energy Fund and Enova

(19) The notified measure falls within the Norwegian Energy Fund Scheme (the "Energy Fund"), which the Authority approved by its Decision No 248/11/COL,[11] as amended by Decision No 299/11/COL.[12] The Energy Fund is a financing mechanism with the objective of encouraging energy saving measures and the production of environmentally sound energy.

(20) The Energy Fund is managed by Enova SF ("Enova"), which is a state enterprise[13] fully owned by the Norwegian State. Enova is financed by the Energy Fund, does not operate on any market and does not generate any income.[14]

8. Selection procedure

(21) Grants under the Energy Fund Scheme are disbursed under programmes. The funding in the present case will be granted on the basis of a programme by the following name: Energy Consumption – Industry (the "ECI Programme"). Enova supports various forms of environmental measures under the ECI Programme, such as energy recovery. Projects are required to have an energy result (environmentally friendly energy produced/saved) of minimum 100 000 KWh in order to be eligible for support under the ECI Programme.

(22) In order to attract aid applications, Enova makes calls for project proposals which are announced in major national and regional newspapers in Norway. Interested parties can apply for aid throughout the year.

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9 See the Authority's guidelines on aid in the context of the greenhouse gas emission allowance trading scheme 2012 (the "ETS Guidelines"), not yet published in the OJ, but available on the Authority's website http://www.eftasurv.int/state-aid/legal-framework/state-aid-guidelines/.

10 Annex III to the ETS Guidelines.

11 OJ C 314 27.10.2011 p. 4.

12 OJ C 10 12.1.2012 p. 4.

13 In Norwegian: *Statsforetak*. Enova is organised in accordance with Act No 71 of 30.8.1991 on state enterprises.

14 Decision No 248/11/COL, para. 13.

(23) The application process can be divided into two stages; a more informal initial stage and a formal application for aid. If it becomes clear at the informal initial stage that a project will not be eligible for aid as it, for example, is profitable without aid or has a too low energy efficiency result, the applicant normally refrains from formally applying for the aid.

(24) When receiving applications for aid, Enova assesses the technical potential for energy saving/generation and the relevant costs and benefits described in the application. The technically feasible projects are subject to a detailed financial assessment according to the following steps:

(i) Enova ensures that the aid amount is calculated in accordance with the extra cost method of the EAG and is within the intensities laid down in the EAG. This entails that the relevant eligible investment costs of the project have to be determined, the relevant operating benefits must be deducted and the relevant operating costs must be added.

(ii) Enova additionally determines the projects' net present value ("NPV") in order to pinpoint the amount of aid necessary to trigger the projects. In practice, Enova's main reason for rejection is that the projects could be triggered with a lower amount of aid than what the applicant is requesting. Enova engages in negotiations with the applicants in order to limit the amount of aid to the minimum necessary.

(iii) The projects are ranked on the efficiency ratio of KWh energy generated/saved per NOK of aid granted. The projects with the best efficiency ratios are eligible for support.

9. Projects supported under the ECI in 2012

(25) Elkem applied for support from the Energy Fund on 30 May 2012. On 25 June 2012, Enova decided that the Elkem project was eligible for aid. The Norwegian authorities have notified the measure as an individual aid award due to the fact that the aid amount exceeds the EUR 7.5 million threshold for detailed assessments as set out in point 160(b)(i) of the EAG. The aid may only be disbursed after approval by the Authority. According to the Norwegian authorities no aid has been granted so far.

(26) In 2012, Enova supported 46 projects under the ECI. The average energy result of the supported projects was 1.10 KWh/NOK.[15] The energy efficiency ratio of the Elkem project is 0.86 KWh/NOK in aid. The Elkem project was the largest supported project in terms of aid amount and energy saved and had the lowest energy efficiency ratio of the 46 supported projects. The Norwegian authorities have explained that larger projects, such as the Elkem project, typically have lower energy results because of higher project engineering costs. Like other larger projects, the Elkem project requires custom made equipment. In 2012, Enova turned down projects that had a lower energy result whilst also failing to meet other criteria of the ECI.

[15] Own calculation by the Authority based on information provided by the Norwegian authorities.

10. Calculation of the aid

10.1 Eligible investment costs

(27) In its decision to grant support to the notified measure, Enova concluded that the following investment costs were eligible:

Investment costs (in NOK thousand)	
Unit for electricity production	175 840
Machinery and equipment	66 688
Unit for heat production	486 005
Steering system	29 307
Project management and engineering	94 345
Turbine and pump building	86 229
Projecting	70 786
Total costs	**1 009 200**

10.2 Extra cost calculation

(28) According to the EAG, only the extra cost related to the investment in environmental protection is eligible for aid. Where that cost is not easily identified in the total investment cost, the extra investment cost must be established by comparing the investment with the counterfactual situation in the absence of aid.[16]

(29) The Norwegian authorities have explained that Elkem has made a broad assessment of the currently available energy recovery systems in order to find the system that gives the best energy result per NOK invested. The Norwegian authorities have explained that due to the risk profile and unprofitability of the investment (as demonstrated by the NPV), Elkem would not have invested without aid. For the same reasons, Elkem would not invest in a less effective energy recovery technology without the aid. Elkem is located in a rural area. Its location limits investment opportunities with regard to, for instance, district heating, consequently, the scope of technologies that Elkem would credibly invest in without aid is limited.

(30) The Norwegian authorities have explained that without the aid, Elkem would keep the currently installed cooling system. With regular maintenance (at a relatively low cost), Elkem would not have to make investments in new equipment until the end of life of the currently installed system 30 years into the future. The Norwegian authorities have explained that, given these specific circumstances, they consider that the business as usual scenario of keeping the existing cooling system is the credible counterfactual situation.

[16] Point 98(a) of the EAG in conjunction with point 81.

(31) To the extent that the investment requires Elkem to obtain equipment not directly connected to the energy recovery, these investments are not covered by the aid.

(32) The market price of the existing cooling system that will be replaced by the new equipment, must be deducted from the eligible costs. The installed cooling system consists of boilers, insulated steel ducts and pipes custom-made for the Elkem Salten plant. According to the Norwegian authorities, the components can only be sold as scrap metal, the value of which is currently NOK 1.8/kilo. On this basis the existing components currently have a total scrap value of NOK 5 million.

(33) Due to the fact that the plant is expected to be closed for 40 days for the construction work on the three furnaces, the operating cost for the first year of operation is expected to be NOK 86.8 million. The operating costs are expected to be substantially lower in the four following years (on average, approximately NOK 19 million per year). In sum, the operating costs for the first five years are estimated to amount to NOK 162 million.[17]

(34) Apart from the energy savings realised by the energy recovery Elkem will not have other operating benefits. Elkem's energy recovery will enable reduced consumption of electricity off the grid. According to the Norwegian authorities the value of that benefit corresponds to the price Elkem would have had to pay for that volume of electricity off the grid. Enova's calculation of that benefit is based on an energy price which corresponds to the six month average of 3-year forward contracts at the Nordic energy exchange Nord Pool at the time of Elkem's application for aid on 30 May 2012. Then the relevant price was NOK 0.323 per KWh. In 2015, its first year of operation, the recovery unit is expected to produce approximately 30 GWh. The volume is expected to increase to approximately 250 GWh in 2016 and to approximately 300 GWh annually as for 2017-2019. In sum, the operating benefits for the first five years are estimated to amount to NOK 379 million.

10.3 Net present value calculation and rate of return

(35) Without the aid, the project has a negative net present value.

(36) With the aid, the project has a net present value of zero and a rate of return of 5.9%. Elkem normally requires a rate of return of 10%, but has the objective of taking the Elkem Salten plant to the "best available technology" level for strategic reasons and has therefore accepted a lower rate than usual. In Elkem's view, in Europe, production at the current best available technology level is likely to become mandatory in the next 10-20 years.

(37) The energy recovery system has a lifetime of 16 years, which is in line with the relevant national depreciation rules. The Norwegian authorities have cited intensive use and the humid Salten environment as factors explaining the 16 year lifetime.

[17] As Elkem is a large undertaking taking part in the European CO_2 Emission Trading System, the eligible costs must be calculated net of any operating benefits and costs related to the first five years of the life of the investment in accordance with point 98(c) of the EAG.

10.4 Eligible extra cost and aid intensity

(38) On the basis of the above, the eligible costs amount to NOK 787 million. The aid amount of NOK 350 million leads to an aid intensity of 44%, see the following table:

	NOK million
Eligible investment costs	1 009
Operating costs (over 5 years)	162
Operating benefits (over 5 years)	- 379
Scrap value of old cooling system	- 5
Eligible costs	787

Aid amount	350

Aid intensity	44%

11. Rules on the disbursement of aid

(39) Specifically for the Elkem project, Enova has decided that no aid will be disbursed to the company until it has taken the decision to invest in the main components of the project, being the boilers and the turbine.

(40) According to the general rules of the Energy Fund Scheme, the aid amount will be reduced in case the incurred investment costs are lower than budgeted. In case of realised savings, the aid amount will be proportionately reduced. Furthermore, the beneficiary is not free to redistribute costs between budget posts, changes are subject to Enova's approval.

(41) Enova holds back the last 20% of the aid until the project is completed, and will only disburse the remaining aid when it has approved an audited final project report with audited final project accounts.

II. ASSESSMENT

1. The presence of state aid

(42) Article 61(1) of the EEA stipulates that "*[s]ave as otherwise provided in this Agreement, any aid granted by EC Member States, EFTA States or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Contracting Parties, be incompatible with the functioning of this Agreement.*"

(43) It follows that a measure constitutes state aid under Article 61(1) of the EEA if it fulfils four conditions. Firstly, the measure is funded by the State or through state resources. Secondly, the measure confers an advantage to the recipients. Thirdly, the measure favours selected undertakings or economic activities. And fourthly, the measure affects trade between the Contracting Parties and distorts or threatens to distort competition in the EEA.

(44) By Decision No 248/11/COL, the Authority concluded that disbursements to undertakings under the Energy Fund constitute state aid within the meaning of Article 61(1) of the EEA Agreement. There is nothing in the current notification to alter that conclusion.

(45) In that context, it is recalled that the aid will be granted under the ECI Programme of the Energy Fund. First, the funding under that programme stems from various sources controlled by the State and therefore constitutes state resources. Secondly, financial grants are awarded to undertakings which thus receive an economic advantage they would not have received in their normal course of business. Thirdly, Elkem receives a grant under the ECI Programme, the grants are awarded to a limited number of undertakings and are therefore selective. Finally, Elkem produces silicon and microsilica, which it sells on the EEA market. Thus, the aid threatens to affect trade between the Contracting Parties to the EEA Agreement and is liable to distort competition in the EEA because the beneficiary is active in a sector where trade between Contracting Parties takes place.

(46) The Authority concludes from the above that the notified measure involves state aid within the meaning of Article 61(1) of the EEA Agreement.

2. Procedural requirements

(47) Pursuant to Article 1(3) of Part I of Protocol 3, *"the EFTA Surveillance Authority shall be informed, in sufficient time to enable it to submit its comments, of any plans to grant or alter aid (…). The State concerned shall not put its proposed measures into effect until the procedure has resulted in a final decision"*.

(48) The aid to Elkem will be granted under the Energy Fund Scheme. According to the EAG, investment grants which exceed the threshold set out in point 160(b)(i) of EUR 7.5 million must be individually notified. The aid of NOK 350 million (approximately EUR 47.85 million) to Elkem was therefore notified to the Authority. The measure has not been put into effect and the granting of the aid is conditional on the Authority's approval. Norway has therefore complied with the standstill obligation. The Authority therefore concludes that the Norwegian authorities have respected their obligations pursuant to Article 1(3) of Part I of Protocol 3.

3. Legal basis for the assessment of the compatibility of the aid: the EAG

(49) The Norwegian authorities have notified the aid to Elkem under chapter 3.1.5 of the EAG as an energy saving measure.

(50) According to the definition in point 70(2) of the EAG, an "energy-saving measure" is "any action which enables undertakings to reduce the amount of energy used in particular in their production cycle". As explained above, the notified project enables Elkem to recover energy (in the form of electricity) from Elkem Salten's production process.

(51) The recovered electricity is to be used in Elkem Salten's own production process. However, Elkem will be technically able to transmit the recovered electricity to the grid, and at rare times, when the volume of the recovered electricity exceeds its own demand, Elkem may actually do so. Thus, the energy recovery system could arguably enable Elkem to accomplish more than "energy saving" within the meaning of point 70(2) of the EAG.

(52) On the other hand, Elkem Salten's annual electricity consumption greatly overshadows the volume of the recovered electricity (942 GWh/300 GWh). Furthermore, Elkem Salten will only on rare occasions transmit the recovered energy to the grid. Elkem Salten will clearly still be a net consumer of electricity. Thus, Elkem Salten can for practical purposes be regarded as the only end-user of the recovered electricity. In sum the recovered electricity enables Elkem Salten to reduce its consumption of externally supplied electricity, therefore in the view of the Authority, the measure should be regarded as an energy saving measure within the meaning of the EAG. The Authority notes that it took a similar view in a similar case concerning aid to Finnfjord AS for an energy recovery system (the "Finnfjord case").[18]

(53) On the basis of the above, the Authority concludes that Elkem's reduced reliance upon energy off the grid constitutes a form of energy saving within the meaning of point 70(2) of the EAG.

4. Detailed Assessment under the EAG

(54) As the aid amount of NOK 350 million (approximately EUR 47.85 million) exceeds the EUR 7.5 million threshold set out in point 160(b)(i) of the EAG, the notified measure is subject to the detailed assessment under chapter 5 of the EAG for purposes of verifying its compatibility with the EEA Agreement.

(55) The detailed assessment requires a balancing of the positive and negative effects of the aid measure. As regards the positive elements, the Authority must assess whether the aid addresses a market failure, is the appropriate instrument to achieve this objective, gives an incentive to the beneficiary and is proportionate. Secondly, the negative elements, that is, the impact of the aid on trade and competition, must be limited. Finally, it must be verified that the overall balance is positive.

4.1 Positive effects of the aid

4.1.1 Existence of a market failure

(56) The environmental objective of the aid is to incentivise energy savings, thereby freeing capacity and reducing the portion of conventional energy in the Norwegian energy mix.

(57) The hydropower produced in Norway can meet a substantial part of the national demand. In practice, only a minor part of the demand is covered by conventional energy and other renewable energies than hydropower. Moreover, Norway exports energy to other Nordic countries. The other Nordic countries rely on conventional power to a greater extent than Norway.

(58) The operating costs of renewable energy production is generally lower than that of conventional energy production (such as coal and gas). Because operating costs are lower, renewable energy production is well-suited to replace the production of conventional energy during those periods where electricity demand can be met by renewable energy. The aid to Elkem aims at lowering the total demand for electricity by supporting an energy saving measure, consequently, the aid is aimed at increasing the share of renewable energy in the Norwegian and Nordic energy mix.

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[18] The Authority's Decision No 39/11/COL *Aid to Finnfjord for an energy recovery system* (OJ C 278 28.7.2011 p. 9).

(59) The Authority notes that there is a commonly acknowledged market failure consisting of undertakings acting in their own interest without incentives to take into account the costs of negative externalities (pollution) arising from their production. An essential step on the way to achieve the aim of reducing the emissions of CO_2 is to encourage energy saving measures, by *i.a.* decreasing the power intensive industry's reliance on electricity off the grid. Investments in the kind of energy saving measure that Elkem intends to undertake are, however, expensive compared to conducting its business as usual by cooling the heat generated by the production process and buying the electricity off the grid. Elkem has no apparent alternative way of recuperating the extra costs of investing in the environmentally friendly energy recovery. In addition, there are no existing standards relating to the overall energy consumption of the beneficiary.[19]

(60) The EAG requires that state aid is targeted at the market failure (consisting of a lack of investments in energy saving/recovery) by having a substantial impact on environmental protection in quantifiable terms. Within that context, the Authority notes that the measure aims at a significant reduction in energy consumption by the Elkem Salten plant, from 942 GWh to 642 GWh annually. This corresponds to a reduction of 300 GWh annually in absolute terms and 32% in relative terms.

(61) For the reasons set out above, the Authority considers the aid to be targeted at the market failure consisting of the lack of investments in energy saving and that it makes a significant contribution to environmental protection through energy savings in the production process of the beneficiary and is thus targeted at a well-defined objective of common interest.

4.1.2 Appropriate instrument

(62) A measure is appropriate if there are no other less distortive instruments to achieve the objective of common interest.[20] Such less distortive instruments could comprise regulatory or taxation measures. However, the Authority notes that the beneficiary is active in a sector which is already deemed to be exposed to a significant risk of carbon leakage due to EU ETS allowance costs passed on in electricity prices. In other words, the Contracting Parties have recognised that undertakings active in the sector of the beneficiary are exposed to an exceptionally high degree of international competition due to their high energy costs. It follows that an additional increase in costs, may they result from the costs of mandatory energy saving measures or from higher taxes on energy consumption, may result in those companies relocating their production facilities to countries with lower standards or taxes (carbon leakage).

(63) On the basis of the above, the Authority concludes that state aid is an appropriate policy instrument for the purposes of addressing the market failure of protecting the environment by incentivising the Elkem energy saving project.

4.1.3 Incentive effect and necessity of aid

(64) The measure provides the necessary incentive effect if the beneficiary would not have engaged in the desired behaviour without the aid.[21] Conversely, a measure does not

[19] Point 167 of the EAG.
[20] Point 169 of the EAG.
[21] Point 171 of the EAG.

provide the necessary incentive effect, if the beneficiary would have engaged in the desired behaviour without the aid.[22]

(65) The project must not have started prior to the application by the beneficiary to the national authorities.[23] This criterion is fulfilled as Elkem applied for the aid on 30 May 2012 and the project has not yet started.

(66) In the following, the Authority assesses the incentive effect of the aid taking account of the elements referred to in point 172 of the EAG.

(67) Whether the aid results in Elkem changing its behaviour must be assessed with reference to the counterfactual situation.[24] The Norwegian authorities state that the counterfactual situation is that Elkem, without the aid, would have carried on with business as usual. The Authority has found the business as usual scenario to be a credible counterfactual in light of the following. Firstly, the current cooling installations could realistically be operational for at least another 30 years without any major investments and with low operating costs. Secondly Elkem's location in a rural area entails that it has limited investment opportunities with regard to for instance district heating. Consequently, the types of technologies that Elkem would credibly invest in without aid is more limited than those of a company located in a more densely populated area. Thirdly, Elkem has made a broad assessment of the currently available energy recovery systems, it would only invest in the most cost efficient form of energy recovery, and even that investment would not be profitable without aid, as demonstrated by a credible NPV-analysis as explained in paragraph (73) below.

(68) In light of the fact that the Authority has found the business as usual as the credible counterfactual, the Authority has concluded that the increase in the level of environmental protection achieved by the Elkem project would not have been achieved without the aid.[25]

(69) As explained in chapter I.10 above, the Norwegian authorities have demonstrated that the eligible costs were calculated in accordance with the methodology set out in points 81-83 of the EAG.[26] The costs of the investment amount to NOK 1 009 million. The value of the scrap metal from the decommissioned cooling installation is estimated at NOK 5 million. The Norwegian authorities have furthermore taken into account the operational costs and benefits related to the investment for environmental protection for the first five years of the investment. The operational benefits amount to NOK 379 million. The operational costs amount to NOK 162 million. The overall extra costs of the environment protection-related investment consequently amount to NOK 787 million.

(70) The measure will only lead to a reduction in Elkem's consumption of electricity off the grid. The Norwegian authorities have explained that Elkem will not benefit from other advantages in terms of increased capacity, productivity, cost reduction or quality.[27]

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22 Point 172 of the EAG.
23 Point 143 of the EAG.
24 Point 172(a) of the EAG.
25 Point 172(b)(i) of the EAG.
26 Point 172 in combination with point 146 (b) of the EAG.
27 Point 172(c) of the EAG.

(71) The Norwegian authorities have furthermore explained that there will be no tangible advantages in terms of an improved product image.[28] An improved product image is usually relevant for labelled products which are sold directly to an end-user and where these end-users are conscious of environmental issues. However, Elkem is active in an upstream market high up the value chain and there are no indications that its commercial customers would base their choice on any other considerations than quality and price. Also, the Norwegian authorities have submitted that silicon and microsilica are sold on the market without any form of labelling with regards to environmental product image. In light of this, the Authority concludes that a more environmentally friendly production process is unlikely to have an impact on customer demand and general market conditions for Elkem's products.

(72) Although Elkem expects that production at the current best available technology level could become mandatory in the next 10-20 years, according to the Norwegian authorities there are no ongoing negotiations at national or EEA level to introduce new or higher mandatory standards and energy saving in the silicon or microsilica industries. In the absence of concrete ongoing negotiations, the Authority concludes that there are no indications that the measure at hand would help the beneficiary to achieve such standards faster or at lower costs.[29]

(73) The Norwegian authorities have provided an NPV calculation according to which, the project, without the aid, is not profitable over its lifetime, account being taken of all indentified advantages and risks.[30] In particular, the Norwegian authorities have provided a detailed documentation of the expected cash-flows including the investment costs, the operating costs and the operating benefits. On the basis of these cash-flows the Norwegian authorities have documented that without the aid the NPV of the investment is negative. This calculation is based on a required rate of return of 5.9% and on a project lifetime of 16 years.

(74) As regards the rate of return, the Norwegian authorities have submitted that Elkem normally requires a rate of return of 10%. In the case at hand, Elkem accepts a lower rate of return as the investment provides some strategic gains in taking the plant to the "best available technology" level. As noted above, in Elkem's view, in Europe, production at the current best available technology level is likely to become mandatory over the next 10-20 years. In this context, the Authority notes that in the Finnfjord case, it concluded that a rate of return of 12.35% was acceptable. Based on the above, the Authority concludes that the required rate of return of 5.9% is not excessive.

(75) As regards the expected lifetime the Norwegian authorities have submitted that the lifetime of the investment is 16 years, as it is in line with the relevant national depreciation rules and citing the intensive use the equipment will be subject to and the humid Salten environment. The Authority notes that in the Finnfjord case it accepted that a lifetime of 15 years for a similar energy recovery system was reasonable. Thus, the Authority concludes that the lifetime of 16 years in the case at hand appears reasonable.

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28 Point 172(d) of the EAG.
29 Point 172(e) of the EAG.
30 Point 172(f) and (g) of the EAG.

(76) On the basis of the above, the Authority concludes that the notified aid has the necessary incentive effect.

4.1.4 Proportionality of the aid

(77) A state aid measure is proportional if the desired change in behaviour of the beneficiary cannot be obtained with less aid. In making this assessment account shall be taken (a) of an accurate cost calculation (limiting the costs to the necessary); (b) of the presence of a transparent, open and non-discriminatory selection process; and (c) that the aid is limited to the minimum and does not exceed the lack of profitability (including a normal return over the life time).[31]

(78) For ease of understanding, the second criterion is dealt with first. Elkem applied for aid under the ECI Programme in 2012. All undertakings established in Norway can apply for aid under the ECI Programme. The programme is described in full on Enova's website. All applicants can discuss their projects with Enova prior to submitting an application. All applications are evaluated on the basis of the same criteria: (i) the projects will be assessed on the basis of an NPV analysis, (ii) the rate of return cannot exceed the level of what can be considered as a normal return, (iii) the value of the energy results of all projects is evaluated according to the same criteria, and (iv) the lifetime of all projects is set according to the same criteria. These criteria are clear, transparent, objective and non-discriminatory.

(79) The Norwegian authorities have provided a detailed and *prima facie* accurate description of the costs and their calculation.

(80) Within that context, the Authority notes that whilst the Elkem and the Finnfjord projects are very similar, the aid amount to Elkem (NOK 350 million) is twice that of the amount that granted to Finnfjord for its energy recovery system (NOK 175 million), the total eligible costs of the Elkem project are NOK 1 009 million, compared to the NOK 511.66 million of the Finnfjord project. Elkem Salten has an annual energy consumption of 942 GWh compared to Finnfjord's 950 GWh. Elkem's goal is to recover 300 GWh annually in electric energy, whilst Finnfjord's goal was to recover 349 GWh annually (224 GWh of electric energy and 125 GWh of steam). On the basis of these differences, the energy efficiency ratio of the Elkem project is substantially lower (0.86 KWh/NOK in aid) than that of the Finnfjord project (1.99 KWh/NOK in aid).

(81) The Norwegian authorities have explained that the Finnfjord project substantially exceeded the initial cost estimates and that the updated estimates indicate that the total project costs, at present, are above NOK 850 million.

(82) As a condition for receiving the aid, Finnfjord had to share its project related "know-how", Elkem has therefore been able to adjust its cost estimates on the basis of that information. The Norwegian authorities have furthermore explained that the Elkem Salten plant covers a larger area than the Finnfjord plant, which represents a significant cost-adding factor.

(83) On the basis of the above, the Authority is of the view that the substantially lower cost estimates of the Finnfjord case do not indicate that the cost estimates of the Elkem case

[31] Point 174 of the EAG.

appear inaccurate. In any event, the Authority notes that Elkem is not automatically entitled to the full aid amount. The amount of NOK 350 million effectively represents a maximum threshold for aid. In accordance with the rules for disbursements of aid under the Energy Fund Scheme as explained in chapter I.11 above, the aid amount will be reduced in case the incurred investment costs are lower than budgeted. In case of realised savings, the aid amount will be proportionately reduced. Furthermore, Elkem is not free to redistribute costs between budget posts, changes are subject to Enova's approval. The adjustment of the aid is facilitated by the fact that Enova holds back the last 20% of the aid until the project is completed, and will only disburse the remaining aid when it has approved an audited final project report with audited final project accounts.

(84) The Authority notes that the calculation of the eligible costs of the Elkem project complies with the extra cost method of the EAG, and the aid amount of NOK 350 million represents 44% of the eligible extra costs, well within the maximum aid intensity of 60%.[32] This alone, however, does not necessarily ensure that the costs are limited to the minimum necessary. That the costs are kept to the minimum can be verified by taking account of the NPV calculation coupled with the open, transparent and non-discriminatory selection process under the ECI Programme and the aid adjustment rules of the Energy Fund Scheme.

(85) The Elkem project has an efficiency ratio of 0.86 KWh/NOK which was the lowest of the eligible projects under the ECI Programme that year. The Authority notes that a competition for aid where all eligible projects are supported does not necessarily ensure the proportionality of the aid. On the other hand, the Authority notes that Enova in 2012 turned down projects that had a lower energy efficiency than Elkem whilst also failing to meet other criteria of the ECI Programme.

(86) As regards the requirement that the aid does not exceed the lack of profitability, this is exactly the objective of determining the amount of aid needed by calculating its net present value. By calculating the net present value of a project, Enova determines the amount of aid necessary to trigger it. Enova only grants aid to bring the net present value to zero (with a reasonable return on capital). Additionally, Enova adjusts the aid amount downwards in case the actual investment costs are lower than budgeted, see chapter I.11 above.

(87) In conclusion, the Authority considers that (i) Enova's open, transparent and non-discriminatory competitive selection procedure, (ii) the NPV calculation, and (iii) the aid adjustment rules under the Energy Fund Scheme ensure that the overall aid amount is limited to the costs which are necessary and that the aid is limited to cover the unprofitability of the Elkem project. In light of this, the Authority concludes that the aid to Elkem is proportionate.

4.2 Analysis of the distortion of competition and trade

4.2.1 Distortion of competition

(88) The aid to Elkem is only compatible with the functioning of the EEA Agreement if the distortions of competition and the effect of the aid measure on trade are limited, so that the overall balance is positive.

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[32] As laid down in point 96 of the EAG. The Finnfjord project had an aid intensity of 39.57%.

(89) The Authority has examined the effects of the aid on competition and trade in the relevant markets.[33]

(90) The silicon produced by Elkem is, depending on its grade, used by the electronics industry, the chemical industry and used for aluminium alloys. According to the Norwegian authorities the market for these silicon products is global.

(91) Elkem also produces microsilica. According to the Norwegian authorities the market for high quality microsilica is global whilst the market for regular quality microsilica is more regionalised due to high transportation costs in relation to the value of the product.

(92) As a starting point the Authority has assessed the likelihood that Elkem will be able to increase or maintain sales as a result of the aid. The Authority notes that with the aid Elkem will not increase its production capacity. The Authority furthermore notes that competition in the markets for Elkem's products is likely to be price inelastic. Elkem's products are globally traded commodities which mainly compete on the basis of price and there are a number of competitors active in these markets. Therefore, it would seem likely that Elkem could increase sales by reducing its prices. However, as demonstrated above, without the aid the costs of the measure outweigh the benefits and even with the aid the project does not exceed the expected lack of profitability including a normal return over the lifetime of the project. Therefore, Elkem is likely to maintain its regular price levels in order to recoup the investment costs. Consequently, it is unlikely that Elkem will be able to increase sales through a reduction in prices.[34]

(93) Furthermore, as explained above, Elkem is not likely to benefit from tangible advantages in terms of an improved product image, because it is active in an upstream market high up the value chain and there are no indications that its commercial customers would base their choice on any other consideration than quality and price. Consequently, it is unlikely that an improved environmental image of Elkem's products could generate an increase in sales.[35]

(94) Moreover, the Norwegian authorities have confirmed that the measure will not lead to the creation of new products and will have no impact on the properties or the quality of the existing products. Therefore, Elkem will not be able to increase its sales through the creation of new or improved products.[36]

4.2.2 Dynamic incentives/crowding out

(95) The Authority has assessed whether the aid may distort dynamic incentives or crowd out investments in the specific technology in other EEA States.[37]

(96) In that regard the Authority notes that the investment is technologically neutral. Enova grants aid merely on the basis of the best energy-efficiency ratio and does not require its beneficiaries to use specific technologies. Moreover, the Norwegian authorities have submitted that the heat recovery system is based on commercially available technologies

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33 Point 175 of the EAG.
34 Point 177(a) of the EAG.
35 Point 177(b) of the EAG.
36 Point 177(c) of the EAG.
37 Points 178-179 of the EAG.

and will not provide Elkem with a technological "first mover advantage". In any event, Enova requires Elkem to share the acquired "know how".

(97) On this basis, the Authority finds it unlikely that the aid will distort dynamic incentives and crowd out investments in the specific technology in other EEA States.

4.2.3 Maintaining inefficient firms afloat

(98) The Authority has assessed whether the aid will contribute to keep an inefficient firm afloat in accordance with the criteria listed in the EAG.[38]

(99) The Norwegian authorities have provided the Authority with Elkem's accounts for 2008-2011, which show positive net results and a stable balance sheet structure.[39] On the basis of the information available to the Authority, the sector in which Elkem operates, does not appear to be characterised by overcapacity or inefficient market structures.

(100) The Norwegian authorities have submitted that they are aware of only one comparable producer (*Elkem Bjølvefossen*, in Norway) that has implemented an energy recovery measure without aid. However, this recovery installation is older and less effective. Besides, the Norwegian authorities note that other producers such as the aforementioned Finnfjord have installed heat recovery installations only with the support of state aid as an additional incentive. The Authority is not aware of other operators that have implemented similar energy recovery installations. Thus, the aid appears to incentivise Elkem to go beyond the normal behaviour in the sector.

(101) The Authority finally notes that, with the aid, the notified project does not exceed the expected lack of profitability including a normal return (5.9%) over the lifetime of the project, and that Elkem was chosen as a beneficiary in a non-discriminatory, transparent and open selection process.

(102) In light of the above, the Authority finds it unlikely that the aid will keep an inefficient firm afloat.

4.2.4 Market power/exclusionary behaviour

(103) The Authority has assessed whether the aid will enable the beneficiary to increase its market power or to exclude competitors.[40]

(104) The Authority notes that the measure will not enable Elkem to increase its capacity or to improve the characteristics or the quality of its products. Moreover, the aid is not expected to have an impact on Elkem's production costs. Elkem will therefore not be in a position to lower its prices to the detriment of its competitors.

(105) Elkem produces various types of silicon. Even though the silicon products cannot easily substitute each other from a demand side perspective, it is fairly easy for manufacturers to switch from the production of one grade of silicon to another. The Norwegian authorities have provided information according to which the market for silicon is worldwide. Elkem, however, only supplies silicon to customers located in Europe. Elkem's share of the EEA market is 14%. Its share of the global market is consequently lower. The

38 Point 180 of the EAG.
39 Point 180(a) of the EAG.
40 Point 181-182 of the EAG.

Authority notes that it is unlikely to identify competition concerns related to market power in markets where a beneficiary has a market share below 25%.[41] Moreover, there are significant other alternative suppliers on the market. Elkem's main competitor is FerroAtlantica with a market share of approximately 26% in the EEA. According to the Norwegian authorities, there are a number of other competitors in Brazil and China, which provide silicon products to European customers.

(106) Elkem also produces high and regular quality microsilica. The Authority understands that high quality microsilica is used in refractory products, in fibre cement and in ceramics. Regular quality microsilica is used as an additive to concrete. The Authority understands that microsilica can be replaced by a wide range of other materials with the same abilities, such as rice husk, fly ash and silica sand. There are a number of alternative suppliers of both qualities of microsilica.

(107) Thus, should Elkem change its behaviour towards its clients, for example by unilaterally increasing its prices, its clients would have a number of alternative suppliers and switch to any of them suppliers.

(108) On the basis of the above the Authority concludes that Elkem does not have a high degree of market power and is unlikely to strengthen its position at the expense of its competitors as a result of the aid.

4.2.5 Effect on trade and location

(109) A measure might have a significant effect on trade in particular if it reduces production costs or increases production standards in some territories at the expense of other territories, which may incentivise companies to relocate from the non-aided to the aided areas.[42] The Authority notes that Elkem produces silicon and microsilica that are sold on global or EEA-wide markets. The Authority has no indication that some territories will benefit from favourable production conditions. On this basis the Authority concludes that it is unlikely that the measure will affect trade and location.

4.3 Balancing

(110) The overall balance of a measure is positive, if the benefits for the objective of common interest outweigh the distortions of competition and effects on trade. With regard to the distortions of competition and the effects on trade it has been noted above, that these are limited. In particular, the costs of production per unit should remain unchanged over the lifetime of the project, there should be no tangible advantages in terms of an improved environmental image and the aid will not enable Elkem to invent new products or improve existing products. With regard to the positive effects, environmental protection is a well-established objective of common interest and energy saving measures are considered to be well-targeted to meet this objective. In view of the above, it can be concluded that the limited negative effects on competition and trade are outbalanced by the positive effects of the aid for the environment, so that the overall balance of the measure is positive.

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41 Point 181 of the EAG.
42 Point 183 of the EAG.

5. Conclusion

(111) On the basis of the assessment above, the Authority concludes that the state aid to Elkem is compatible with the functioning of the EEA Agreement on the basis of its Article 61(3)(c).

HAS ADOPTED THIS DECISION:

Article 1

The aid to Elkem for an energy recovery system is compatible with the EEA Agreement on the basis of its Article 61(3)(c).

Article 2

The implementation of the measure is authorised accordingly.

Article 3

This Decision is addressed to the Kingdom of Norway.

Article 4

Only the English version is authentic.

Made in Brussels, 10 July 2013.

For the EFTA Surveillance Authority

Oda Helen Sletnes
President

Sverrir Haukur Gunnlaugsson
College Member