

Case No: 69042
Event No: 581685
Dec. No. 39/11/COL

EFTA SURVEILLANCE AUTHORITY DECISION

of

9 February 2011

on the aid to Finnfjord 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 to Article 61(3)(c),

HAVING REGARD to 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 to Article 24,

HAVING REGARD to Protocol 3 to the Surveillance and Court Agreement (“Protocol 3”), in particular to Article 1(3) of Part I and Article 4(2) of Part II,

Whereas:

I. FACTS

1 Procedure

By letter of 8 October 2010 (Event No 572667), the Norwegian authorities notified an individual aid grant under the approved Norwegian Energy Fund aid scheme to Finnfjord AS (“Finnfjord”), pursuant to Article 1(3) of Part I of Protocol 3.

The Norwegian authorities provided additional information regarding the calculation of the aid amount on 11 November 2010 (Event No 579175 with further attachments).

By letter dated 1 December 2010 (Event No 579309), the Authority requested additional information. By letter dated 15 December 2010 (Event No 580861), the Norwegian authorities replied to the information request.

The Authority requested and received further information via telephone and email in the period between 14 January 2011 and 4 February 2011 (Events No 583943, 584466-584568, 584613, 584810, 585333-585335, 585496, 585590-585595 and 585730).

2 The project

The notification concerns a direct grant of NOK 175 million to Finnfjord under the Norwegian Energy Fund aid scheme (“the Energy Fund scheme”). Finnfjord intends to install an energy recovery system in order to utilise energy otherwise lost in the process of making ferrosilicon and microsilica. Energy is the largest cost-component in Finnfjord’s production process and energy recovery is therefore considered important for the future operations of the plant.

2.1 The existing cooling installations at Finnfjord

Finnfjord produces ferrosilicon and microsilica which is a by-product from the production of ferrosilicon. The production of ferrosilicon is energy intensive, Finnfjord’s production requires an annual electrical supply of approximately 950 GWh. The production takes place in electric arc furnaces and requires the use of carbon-bearing products (coal and coke) as reducing agents. The coal and coke release energy during the production process, the emissions have an energy content which equals or even exceeds the electrical power used as an input factor for the production. At present time, this energy is not recovered, instead the emissions are cooled in order not to damage the production equipment and the bag house filters (dust cleaning installations) of the plant.

Various methods are deployed in order to cool the flue gas; the gas is led from the furnaces to the bag house filter through large steel pipes, which are designed to release as much energy as possible to the surroundings. Additionally, the temperature of the flue gas is controlled by two boilers, connected to the pipes, that operate at low pressure with a temperature of 110 to 120 degrees. Cool air is blown into furnace tops and the bag house filter and a cooling station cools the furnace equipment in water.

2.2 The notified energy recovery project

With the notified project, Finnfjord intends to replace parts of the existing cooling installations with an energy recovery system. The project requires investments in equipment for the recovery of 224 GWh of electrical power from the waste gasses of the company’s ferrosilicon ovens (phase 1 of the plan) and equipment enabling the production and end-user delivery of 125 GWh of process steam (phase 2 of the plan).¹ The expected annual energy production for both phases thus amounts to approximately 349 GWh. Most of the costs in phase 2 are related to investments made during phase 1.

The energy can only be recovered when the Finnfjord plant is in operation. The electrical output is to be used in Finnfjord’s production process, thereby reducing Finnfjord’s electricity consumption from the grid. However, the installation will also enable Finnfjord to transmit electricity to the grid, and occasionally, at given points in time, there is a theoretical possibility that the production of the Finnfjord plant may require a lower amount of electrical energy than what is recovered. Consequently, some of the recovered electricity may be transmitted to the grid and sold on the market.

The steam produced is to be sold at market price to a yet-to-be constructed factory to be located in the vicinity of the Finnfjord plant. This factory is intended to use the steam to produce bio-pellets or biogas. The Finnfjord plant is expected to produce steam on a commercial scale from 2018. In order to ensure the fulfilment of the envisaged energy

¹ The two phases are part of a more comprehensive plan; Finnfjord’s ultimate aim is to eliminate emissions altogether, by constructing a coal-fired power plant with CCS (CO₂ capture and storage) (phase 3), and thereafter connecting the ferrosilicon plant to the cleaning process in the coal plant (phase 4). Phases 3 and 4 are not supported with the notified aid.

result, Enova has made the disbursement of the last 25% of the aid dependent on Finn fjord concluding a contract for the sale of steam to a third party.

In sum, the notified project enables Finn fjord to recover energy in the form of (i) electricity, to be used in its own production process and (ii) steam, to be sold to a third party. The project does not influence the production of ferrosilicon and microsilica, in terms of production capacity, expected production volume or the quality of the products.

3 The recipient – Finn fjord AS (“Finn fjord”)

Finn fjord is a family-owned limited liability company. It is located in Finnsnes in the County of Troms, which is the second northernmost county in Norway.

Profits (before tax) amounted to NOK 25 million in 2007, NOK 64 million in 2008 and NOK 2 million for 2009.

3.1 Finn fjord is a medium-sized enterprise

The following table gives an overview over Finn fjord’s annual turnover and balance sheet total for 2006-2009 in million EUR:²

Year	Annual turnover	Balance sheet total
2006	30.1	34.2
2007	50	39.3
2008	96.1	47.4
2009	38.7	28.8

Finn fjord has approximately 120 employees. Due to the fact that it employs less than 250 individuals and its balance sheet does not exceed EUR 43 million³ over two consecutive accounting periods,⁴ Finn fjord is a medium-sized enterprise.

3.2 Products

3.2.1 Ferrosilicon

Finn fjord is one of Europe’s leading producers of ferrosilicon. Ferrosilicon is essentially used as a deoxidizer and as an alloying component in the iron and steel industry. It is an intermediate product in steel production, used to give steel and cast iron desired qualities such as: strength, hardness, temperateness and corrosion resistance.

At maximum capacity, the Finn fjord plant produces 100 000 tonnes ferrosilicon annually, and its annual production amounts to approximately 90 000 to 100 000 tonnes. Finn fjord mainly serves the European market, where Finn fjord has a market share of approximately 10 to 15%.⁵

3.2.2 Microsilica

Microsilica is a useful by-product of the ferrosilicon production process. It is an effective pozzolanic material that is added to concrete in order to improve its properties (compressive strength, bond strength and abrasion resistance).

² Based on the exchange rates applicable under the state aid rules: <http://www.eftasurv.int/state-aid/rates/>.

³ See point 18 of the Authority’s Guidelines on aid to micro, small and medium-sized enterprises (“the SME Guidelines”). Available at the Authority’s website: <http://www.eftasurv.int/state-aid/legal-framework/state-aid-guidelines/>.

⁴ See point 32 of the SME Guidelines.

⁵ The total European demand typically varies between 800 000 to 1 000 000 tonnes of ferrosilicon per year, depending on the level of activity in the European steel sector.

Finnfjord produces 10 000 to 20 000 tonnes of microsilica annually. On average, less than half of which is sold on the European market. According to the Norwegian authorities, the annual European production of microsilica varies between approximately 100 000 to 200 000 tonnes.

4 The Energy Fund scheme

The notified funding to Finnfjord is granted on the basis of the Energy Fund scheme which was approved by the Authority's Decision No 125/06/COL of 3 May 2006 on the basis of Article 61(3)(c) of the EEA Agreement.⁶ The Energy Fund scheme is a financing mechanism with the objective of encouraging energy saving measures and the production of environmentally sound energy.⁷ The fund is managed by Enova SF ("Enova"), a state owned administrative body.

4.1 Enova's selection procedure

4.1.1 Competition for aid under the Industry Programme

Grants under the Energy Fund scheme are disbursed under programmes. The funding in the present case is granted on the basis of the Industry Programme. Enova supports various forms of environmental measures under the Programme, such as energy recovery and cogeneration. Projects are required to have an energy result (environmentally friendly energy produced/saved) of minimum 0.5 GWh in order to be eligible for the Industry Programme.⁸

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 are welcomed to apply for aid throughout the year.

Interested parties are encouraged to discuss their projects with Enova prior to formally submitting the application for aid. According to the Norwegian authorities, this practice enhances the quality of the applications, and limits the amount of ineligible applications. In 2009, Enova handled 46 applications under the Industry Programme.

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 and is within the intensities laid down in the EAG.
- (ii) Enova additionally determines the projects' net present value ("NPV") in order to pinpoint the amount of aid necessary to trigger them. 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.

⁶ As amended by the Authority's Decision No 486/10/COL of 15 December 2010 on the prolongation of the scheme.

⁷ Decision of Parliament 5.4.2001: Odelstingets vedtak til lov om endringer i lov 29. juni 1990 nr. 50 om produksjon, omforming, overføring, omsetning og fordeling av energi m.m (energilova). (Besl.O.75 (2000-2001), jf. Innst.O.nr 59 (2000-2001) og Ot.prp.nr.35 (2000-2001).

⁸ The Industry Programme is described on Enova's website:
<http://naring.enova.no/sitepageview.aspx?sitePageID=1263>.

- (iii) The projects are ranked on the efficiency ratio of KWh energy generated/saved per NOK of aid granted.

4.1.2 *The Finnjord project, eligible extra costs*

Finnjord applied for aid under the scheme on 12 March 2009. On the basis of the application Enova found the following investment costs eligible:

Component	Cost (in NOK)
Project planning and engineering costs, including the development of a concept for steam production from ferrosilicon furnaces, contract preparations and management costs during the construction and commissioning phase.	22 064 500
Conversion of water cooled furnace components into steam producing components.	79 000 000
Installation of two waste heat recovery boilers designed to process gasses with a high dust content and to convert the energy into overheated steam. This point includes foundation and erection costs.	192 000 000
Installation of a turbine and a generator (power plant) to transform the steam into electric power (includes appliances for delivery of steam to third parties).	164 000 000
Control systems (internal and general).	5 650 000
Commencement, education and isolation, especially including the costs for temporary shut-down of the ferrosilicon production during the installation and start-up phases.	48 945 500
Total	511 660 000

The counterfactual situation

According to the EAG⁹, 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.¹⁰

Finnjord 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-analysis), Finnjord would not have invested without aid. For the same reasons, Finnjord would not invest in a less effective energy recovery technology without the aid. Finnjord is located in a rural area. Its location limits investment opportunities with regard to for instance district heating, consequently, the scope of technologies that Finnjord would credibly invest in without aid is limited.

⁹ OJ L 144, 10.6.2010, p.1 and EEA Supplement No 29, 10.6.2010, p. 1, also available at: <http://www.eftasurv.int/state-aid/legal-framework/state-aid-guidelines/>.

¹⁰ Point 98(a) of the EAG in conjunction with point 81.

The Norwegian authorities have explained that without the aid, Finnjord would keep the currently installed cooling system. The main components of that system (boilers, ducts and pipes) all have an expected lifetime of 30 years or more. With regular maintenance (at a relatively low cost), Finnjord would not have to make investments in new equipment until the end of life of the currently installed system. 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.

To the extent that the investment requires Finnjord to obtain equipment not directly connected to the energy recovery, these investments are not covered by the aid. Finnjord has to construct a new service building for heat management. The investment in the service building is not covered by the aid.

The market price of the existing cooling system that will be replaced by the new equipment, must be deducted from the eligible costs.¹¹ The installed cooling system consists of boilers, insulated steel ducts and pipes custom-made for the Finnjord plant. According to the Norwegian authorities, the components can only be sold as scrap metal. According to the Norwegian authorities, the value of scrap metal is currently NOK 1.8/kilo, hence, the 15 tonnes of components currently have a total scrap value of NOK 27 000.

Net operating benefits

As Finnjord is a medium-sized enterprise, the eligible costs must be calculated net of any operating benefits and costs related to the first three years of the life of the investment in accordance with point 98(c) of the EAG.

The project is expected to produce 150 GWh of electricity in its first year (2012), the volume is expected to increase by 25 GWh in the two consecutive years (i.e. 175 GWh in 2013 and 200 GWh in 2014). The average price of electricity for that period is expected to be NOK 0.36/KWh,¹² Finnjord's energy recovery will enable the undertaking to reduce its consumption of electricity off the grid, the value of that benefit corresponds to the price it would have had to pay for that volume of electricity off the grid. The net extra operating costs¹³ are expected to be approximately NOK 40 million for each of the three years. The following table gives an overview (in million NOK) of the operating costs and benefits for the first three years:¹⁴

Year	2012	2013	2014	Sum
Benefits	54	63	72	189
Costs	39.877	39.877	39.877	119.631
Sum	14.123	23.123	32.123	69.369

Eligible extra cost

The total eligible cost (NOK 511 660 000) less the market price of replaced cooling system (NOK 27 000) and less the net operating benefits of the three first years (NOK 69 369 000) gives NOK 442 264 000 of eligible extra cost.

¹¹ See the Commission Decision in case N 358/2007 (Czech Republic), at paragraphs 14-16.

¹² Based on the latest (at the time of Finnjord's application for aid) six month average of 3-year forward contracts at the Nordic energy exchange Nord Pool.

¹³ The operating cost of the new energy recovery system less the operating cost related to the scrapped cooling equipment.

¹⁴ Based on information submitted by the Norwegian authorities (Event No 583943).

Aid intensity

Finnfjord is a medium-sized enterprise, in accordance with point 96 of the EAG, the aid intensity cannot exceed 70% of the costs. The aid amount of NOK 175 million represents 39.57% of the eligible extra costs, and is therefore within the aid intensity in the EAG.

4.1.3 The net present value method (“the NPV method”)

After determining the eligible extra cost of the project, Enova applies the NPV method in order to limit the amount of aid to what is necessary to trigger the project. The NPV calculation is based on the following predetermined conditions:

- (i) With the aid, the NPV (including a reasonable return on capital) cannot exceed zero.
- (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.
- (iv) The lifetime of all projects is set according to the same criteria.

Without the aid, the project would have given Finnfjord an rate of return of 7.39%. In Enova’s experience, companies usually require a rate of return between 12% - 16% for energy investments outside its core activity. After negotiating with Enova, Finnfjord accepted a rate of return of 12.35%. The aid of NOK 175 million was required to give the project such a rate of return.¹⁵

Enova determines the price of electricity based on the latest (at the time of the application) six month average of 3-year forward contracts at the Nordic energy exchange Nord Pool, which at the time of Finnfjord’s application was NOK 0.36/KWh. The price of steam was set in accordance with observed market prices, which at the time was 0.30 NOK/KWh.

The lifetime is set at 15 years in line with the relevant national depreciation rules.

4.1.4 Efficiency ratio

Finnfjord competes for aid on the basis of the project’s efficiency ratio. Based on the projected energy savings amounting to 349 GWh, and the aid amount of NOK 175 million, the project has an efficiency ratio of 1.99 KWh/NOK of aid. In 2009, all projects that had an efficiency ratio equal to or better than 1.99 KWh/NOK, were found eligible for aid under the Industry Programme.

5 The financing of the project

The Finnfjord project will receive NOK 175 million from the Energy Fund. The Norwegian authorities have informed the Authority that the remaining project costs will be financed by Finnfjord via capital contributions, bank loans and a loan from the public institution Innovation Norway.¹⁶ At present time, a loan agreement has yet to be concluded, hence the terms and conditions under which the loan will be granted are not settled. The Authority notes that in general, a loan from a public institution at terms that are more beneficial than those that could be obtained in the market would normally

¹⁵ See Event No 572667.

¹⁶ In Norwegian: *Innovasjon Norge*.

involve state aid within the meaning of Article 61 of the EEA Agreement. However, the Norwegian authorities have informed the Authority that the loan will be granted on market terms.¹⁷ Innovation Norway has been informed about the allocation of NOK 175 million to Finnjord from Enova.

II. ASSESSMENT

1 The presence of state aid

Article 61(1) of the EEA Agreement reads as follows:

“Save 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.”

In its Decision No 125/06/COL, the Authority concluded that disbursements to undertakings under the Energy Fund scheme 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.

In that context, it is recalled that Finnjord has been granted aid under the Industry Programme of the Energy Fund. First, the funding under the Industry Programme is coming 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, Finnjord receives a grant under the Industry Programme, the grants are awarded to a limited circle of undertakings and are therefore selective. Finally, Finnjord produces ferrosilicium and microsilica, which it sells on the European market.¹⁸ Thus, the aid affects trade between the Contracting Parties to the EEA Agreement and distorts competition in the EEA because the beneficiary is active in a sector where trade between Contracting Parties takes place.¹⁹

For these reasons, the allocation of NOK 175 million to Finnjord constitutes state aid within the meaning of Article 61(1) of the EEA Agreement.

2 Procedural requirements

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”*.

The aid to Finnjord is granted under the Energy Fund scheme, which was approved on the basis of the previous EAG. On 16 July 2008 the Authority adopted the new EAG. According to the new EAG, investment grants which exceed the threshold set out in point 160(b)(i) of EUR 7.5 million must be individually notified.²⁰ The aid of NOK 175 million

¹⁷ Event No 580861.

¹⁸ As described above in chapter I.3.1.

¹⁹ See in this respect Case 730/79 *Philip Morris v Commission* [1989] ECR p. 2671, paragraph 11, where it is stated that *“When State financial aid strengthens the position of an undertaking compared with other undertakings competing in intra-Community trade the latter must be regarded as affected by that aid.”*

²⁰ Point 200(ii) of the EAG provides that the thresholds set out in Point 160 apply as of the first day following the adoption of the EAG.

(approximately EUR 21.3 million²¹) to Finnjord was therefore notified on the basis of point 160(b)(i) of the EAG.

An amount of NOK 111 514 was granted to Finnjord prior to the submission of the notification to the Authority. The Authority can therefore conclude that the obligations pursuant to Article 1(3) of Part I of Protocol 3 have not been fully respected.

3 Compatibility of the aid

3.1 Applicability of Chapter 3.1.5 of the Environmental Aid Guidelines

Chapter 3.1.5 of the EAG lays down a set of conditions under which to assess the compatibility of aid to energy saving. 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 Finnjord to recover energy (in the form of electricity and steam) from its production process.

The recovered electricity is to be used in Finnjord’s own production process. However, Finnjord 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, Finnjord may actually do so. This would, however, be the exception and not the rule. In light of the fact that Finnjord’s annual electricity consumption greatly overshadows the volume of the recovered electricity (950 GWh/224 GWh), and that Finnjord only on rare occasions will transmit the recovered energy to the grid, Finnjord can for practical purposes be regarded as the only end-user of the recovered electricity. Consequently, the recovered electricity enables Finnjord to reduce its consumption of externally supplied electricity. Finnjord’s reduced reliance upon energy off the grid constitutes a form of energy saving within the meaning of point 70(2) of the EAG.

The recovery of energy in the form of steam that is to be sold to a third party cannot be held to be covered by the definition in point 70(2) of the EAG. The steam will not reduce the amount of energy used by Finnjord itself, but will reduce the amounts of energy used by another company. The EAG allows for aid to district heating,²² and speaks favourably of the “useful application” of waste heat “in district heating”.²³ The Commission has accepted a similar analogous application of the EU Environmental Aid Guidelines.²⁴ In light of this, the Authority has applied Chapter 3.1.5 of the EAG analogously for Finnjord’s energy recovery in the form of steam.

For the sake of simplicity, no further references to the analogous application of the EAG is made in the following.

3.2 Detailed assessment under the EAG, introductory remarks

As explained above, since the grant of aid to Finnjord exceeds the threshold set out in point 160(b)(i) of the EAG, the project must be individually notified. Point 160(b)(i) of the EAG provides that the Authority has to carry out a detailed assessment under Chapter 5 of the EAG for purposes of verifying compatibility with the EEA Agreement. The detailed assessment requires a balancing of the positive and negative elements of the aid

²¹ Based on the Authority’s exchange rate for 2010 (EUR 1 = NOK 8.229), available on the Authority’s website: <http://www.eftasurv.int/state-aid/rates/>.

²² Chapter 3.1.8 of the EAG.

²³ Point 51 of the EAG.

²⁴ See the Commission’s Decision in Case N 485/2008 (Austria) at paragraphs 16-17.

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.

3.3 Positive effects of the aid

The main positive element to be taken into consideration when assessing the compatibility of the aid is that it induces undertakings to pursue environmental protection which they would not otherwise have pursued.²⁵

3.3.1 Existence of a market failure

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.

The Norwegian authorities have indicated that the hydropower produced in Norway can meet 98.5% of the current Norwegian demand. In practice a 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.

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 CO₂ 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 Finn fjord 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. Finn fjord has no apparent alternative way of recuperating the extra costs of investing in the environmentally friendly energy saving and recovery.

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.

The environmental effect of the planned project will be the recovery of an annual volume of approximately 349 GWh of energy from the heat generated by Finn fjord's production of ferrosilicon and microsilica, which at present time is cooled and released into the environment. The recovered electric energy (224 GWh) will be used by Finn fjord in its production process thereby reducing Finn fjord's need for electricity from the grid. The recovered energy in the form of steam (125 GWh) will be sold to an as of yet unconstructed bio-pellets/biogas plant to be located in the vicinity of the Finn fjord plant. By enabling the company to use environmentally friendly steam in its production process, the aid ensures that the company does not rely on less environmentally friendly energy sources.

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.

²⁵ Point 166 of the EAG.

The aid to Finn fjord 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.

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.²⁶

3.3.2 *Appropriate instrument*

In accordance with point 169 of the EAG, the Authority has taken account of whether state aid is an appropriate instrument to obtain the objective of environmental protection.

The Norwegian authorities have stated that a regulatory measure would not represent a suitable instrument to achieve the same result in terms of environmental protection as with the aid. The Authority notes that the Norwegian authorities in theory, could set a certain standard for energy recovery in the ferrosilicon industry, but not impose a specific technology requirement. However, due to the unprofitability of energy recovery in the ferrosilicon production process, such a standard-setting would appear inexpedient. In the present case, the Authority considers that state aid is the appropriate policy instrument for the purposes of addressing the market failure of protecting the environment by encouraging energy saving.

3.3.3 *Incentive effect and necessity of aid*

According to point 143 of the EAG, “(t)he Authority considers that aid does not present an incentive effect for the beneficiary in all cases in which the project has already started prior to the aid application by the beneficiary to the national authorities.” Finn fjord submitted its application for aid on 12 March 2009, before the project commenced (11 May 2009). Therefore, the incentive effect referred to in point 143 of the EAG is met.

Under the detailed assessment, the Authority must further assess the incentive effect and necessity of aid in accordance with points 171-173 of the EAG. The aid “must result in the recipient changing its behaviour to increase the level of environmental protection”.²⁷

Whether the aid results in Finn fjord changing its behaviour must be assessed with reference to the counterfactual situation.²⁸ Without state aid, Finn fjord would not envisage constructing an energy recovery plant. The Norwegian authorities state that the counterfactual situation is that Finn fjord 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 Finn fjord’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 Finn fjord would credibly invest in without aid is more limited than those of a company located in a more densely populated area. Thirdly, Finn fjord 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.

In terms of increasing the level of environmental protection as required by point 172(b)(i) of the EAG, the aid measure is estimated to ensure that an annual volume of 349 GWh of

²⁶ Point 167 of the EAG.

²⁷ Point 171 of the EAG.

²⁸ Point 172(a) of the EAG.

energy is saved. This in the sense that heat which would otherwise be cooled will be recovered and used in Finn fjord's production processes and by the biomass/bio-pellets factory to be established in the vicinity of Finn fjord. Thus, the investment will contribute to freeing electrical capacity and increasing the portion of renewable energy in the Norwegian and Nordic energy mix.²⁹

According to the EAG, the assessment of the incentive effect and necessity of aid must furthermore be based on the following factors; aid will normally have an incentive effect when: the relevant market conditions are such that the aid recipient goes beyond the level of environmental protection,³⁰ there is a particular risk connected to the investment and³¹ the level of profitability is negative.³² The incentive effect of the aid is normally lower when there are other production advantages linked to the investment and³³ there are possible future mandatory standards.³⁴

In terms of other production advantages and levels of risk and profitability, Enova undertook a financial analysis of the project by applying the NPV method. In applying the method Enova took account of all production advantages, the level of risk and profitability. Enova applies the method in order to determine how much aid is needed in order to trigger the investment. A project is triggered when it reaches an NPV of zero with a reasonable rate of return. Without the aid,³⁵ the rate would be 7.39%. Due to the level of risk and the fact that the investment in energy recovery falls outside the scope of Finn fjord's core activities, Finn fjord is not prepared to carry out the project with a rate of return of 7.39%. Through its work as a public body whose primary task is to assess applications for aid for energy production and saving measures, Enova has acquired a thorough knowledge of the energy sector. In Enova's experience, companies usually require a rate of return between 12% - 16% for energy investments outside its core activity under normal market conditions. After negotiating with Enova, Finn fjord accepted a rate of return of 12.35%. On this basis, the Authority considers the absence of production advantages that are unaccounted for, the project's level of risk and the low level of profitability contributes to demonstrate that the aid has incentive effect.

According to the Norwegian authorities, ferrosilicon and microsilica are sold on the market without any form of labelling with regards to environmental product image. In light of this, the more environmentally friendly production process is unlikely to have an impact on customer demand and general market conditions for Finn fjord's products. Due to the relative unimportance of a green product image in the ferrosilicon and microsilica markets, it is likely that the aid gives Finn fjord an incentive to invest in environmental protection, which would be present in the absence of aid.

There are no ongoing negotiations at Community level to introduce new mandatory energy saving standards for the ferrosilicon industry. In the absence of such standards the aid cannot be held to have a lower incentive effect.

In light of the above, the Authority considers the aid to have incentive effect.

²⁹ Reference is made to the more elaborate explanation of the environmental effect in Chapter II.3.3.1 of this Decision.

³⁰ Point 172(d) of the EAG.

³¹ Point 172(f) of the EAG.

³² Point 172(g) of the EAG.

³³ Point 172(c) of the EAG.

³⁴ Point 172(e) of the EAG.

³⁵ And with an NPV of zero.

3.3.4 *Proportionality of the aid*

Point 174 of the EAG requires that the state aid amount must be limited to the minimum to bring about the investment. 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 non-discriminatory selection process; and (c) that the aid should not exceed the lack of profitability (including a normal return over the life time).

For reasons of simplicity, the second criterion is dealt with first. Finnfjord applied for aid under Enova's Industry Programme in 2009. All undertakings established in Norway are welcome to apply for aid under the Industry Programme. The programme is announced in major national and regional newspapers and described in full on Enova's website. All applicants are welcome to discuss their projects with Enova prior to submitting an application. All applications are subject to the same criteria: (i) with the aid, the NPV (including a reasonable return on capital) cannot exceed zero, (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 objective and non-discriminatory.

The Norwegian authorities have provided a seemingly accurate and detailed description of the costs and their calculation. The calculation of eligible costs complies with the extra cost method of the EAG, and the aid amount of NOK 175 million represents 39.57% of the eligible costs, well within the maximum aid intensity of 70%. This, 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 examining Enova's NPV method coupled with the competition for aid under the Industry Programme. In the same context, the question of whether the aid exceeds the lack of profitability can be answered.

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).

Furthermore, as regards the limitation of the costs to the minimum necessary, the Authority notes that only the most efficient projects are selected. The applicants compete on producing/saving the most energy for the least amount of aid. All projects that had an efficiency ratio equal to or better than 1.99 KWh/NOK of aid were awarded aid under the Industry Programme in 2009. A project's net present value is in essence composed of its costs, revenues and the investor's required rate of return. Enova applies the same fixed methods for all projects for determining the lifetime and the price of electricity, steam and other products. Hence the scope for competition on the revenue side is limited. With regards to the rates of return, Enova will limit the rate to a level than can be considered normal for the type of investment. Hence, the applicants to a large extent compete on costs and the level of the rate of return (below the threshold of a normal rate of return). This serves to press the costs and rates of return downwards and hence limit the aid to the least amount necessary.

Enova's efficiency requirements ensures that the aid to Finnfjord is limited to the least amount necessary to trigger the project. Finnfjord initially applied for NOK 200 million in aid, Enova's above described procedure effectively ensured that Finnfjord accepted a reduction in the aid of NOK 25 million.

In conclusion, the Authority considers that Enova's open, transparent and non-discriminatory selection procedure, the NPV method coupled with the competition for aid ensures that the overall aid amount is limited to cover the unprofitability of efficient projects. In light of this, the aid to Finnfjord is proportionate.

3.4 Analysis of the distortion of competition and trade

The Authority has examined the distortion of competition in light of the impact of the aid on competition and trade between undertakings in the relevant markets.

Finnfjord produces ferrosilicon. According to the Norwegian authorities, the quality of ferrosilicon depends on its level of silicon content.³⁶ Finnfjord's product consists of 75% silicon and is therefore commonly referred to as FeSi 75.³⁷ Ferrosilicons with 55% - 86% silicon are used for the same industrial purposes.³⁸ Ferrosilicon with a silicon content of 87% - 95% (FeSi 90) can in theory replace ferrosilicon with a lower silicon content, however, in practice, due to the specific qualities of FeSi 90, and on account of it being considerably more expensive, it is only used by the specialised steel industry.³⁹ Hence, the relevant product market is the market for ferrosilicon with 55% - 86% silicon.

Microsilica, on the other hand, can be replaced by a wide range of other materials with the same abilities, such as rice husk, fly ash and silica sand.⁴⁰ All these products are used in the production of a wide variety of goods from concrete to cosmetics to wallboards.⁴¹ As the volume of Finnfjord's production of microsilica, (like any other ferrosilicon producer's) is fully dependent on the volume of production of ferrosilicon,⁴² and as microsilica competes with a wide range of other materials,⁴³ the Authority has not made an attempt at defining a precise product market since Finnfjord's share of the market where microsilica is sold will be considerably smaller than its share of the ferrosilicon market.

Based on the information provided by the Norwegian authorities,⁴⁴ the Authority has concluded that the geographic markets for ferrosilicon and microsilica are global.

With regard to point 177 of the EAG, the Authority finds it unlikely that Finnfjord will be able to increase or maintain sales of ferrosilicon and microsilica as a result of the aid. The energy recovery installation neither increases Finnfjord's production capacity,⁴⁵ nor will it enable Finnfjord to produce a new or higher quality product.⁴⁶ Additionally, the measure is not expected to appreciably affect Finnfjord's production costs. Ferrosilicon and microsilica are sold on the market without any form of labelling with regard to environmental product image. In light of this, the more environmentally friendly production process is unlikely to have an impact on customer demand and general market conditions for Finnfjord's products.⁴⁷

³⁶ See Event No 584568.

³⁷ Ferrosilicon consisting of 72% - 80% silicon is commonly referred to as FeSi 75, according to the information provided by the Norwegian authorities in Events No 583943, 584568, 585593 and 585595.

³⁸ Based on information provided by the Norwegian authorities in Event No 585593.

³⁹ Based on information provided by the Norwegian authorities in Event No 584568.

⁴⁰ Based on information provided by the Norwegian authorities in Event No 585730.

⁴¹ L.c.

⁴² Based on information provided by the Norwegian authorities in Event No 585595.

⁴³ L.c.

⁴⁴ Based on information provided by the Norwegian authorities, see Events No 572667 and 583943.

⁴⁵ Point 177(a) of the EAG.

⁴⁶ Point 177(c) of the EAG.

⁴⁷ Point 177(b) of the EAG.

As mentioned above, the aid measure enables Finn fjord to produce electricity, Finn fjord will be technically able to sell electricity to other end users. However, as noted above, Finn fjord is producing electricity as an energy saving measure in the sense that the electricity is meant to be used in Finn fjord's production process. The amount of electricity to be transmitted to the grid will be minimal, the volume of energy produced will under no circumstances exceed Finn fjord's demand. The Authority notes that the detailed assessment is a "proportionate assessment", that is, it should be proportionate to the extent to which competition is distorted in individual cases.⁴⁸ Due to the special characteristics of Finn fjord's electricity production, the Authority considers the potential effect on competition to be non-existent, or in any case, extremely limited.

In addition, the aided measure also enables Finn fjord to sell steam (as a form of district heating) to a yet-to-be constructed factory to be located in the vicinity of the Finn fjord plant. At present time, there are no potential customers in the relevant area around the Finn fjord plant.⁴⁹ Hence, the above-mentioned yet to be constructed factory is regarded as the only potential customer. Due to the obvious technical and practical limitations connected to the transportation of heat, any potential customers would have to establish themselves close to the Finn fjord plant. The aid aims at attracting one company to the specific location, otherwise the aid would lack environmental effect. The steam is intended to be sold at market price. The Authority notes that the attraction of one undertaking to the area will have limited effects on competition. Finn fjord is new to the district heating market and does not plan on investing further in district heating. Finn fjord invests in standard technologies available on the market, the aid will not give Finn fjord a "first mover" advantage. In light of the above and the fact that the detailed assessment is a "proportionate assessment", the Authority will not carry out a further separate examination of the effect of the aid on the district heating market in the following.

3.4.1 *Dynamic incentives/crowding out*

In accordance with points 178 and 179 of the EAG, the Authority has assessed whether the aid may distort dynamic incentives or crowd out investments in the specific technology in other EEA States.

The Authority reiterates that Finn fjord has invested in heat recovery equipment readily available in the market. The technology has been chosen on account of its expected efficiency with regard to energy result in relation to NOK invested. The main purpose of the investment is to increase Finn fjord's control over the main input factor (electricity) in its production process. For Finn fjord, the investment is not technologically strategic; it will not result in new products or production techniques, and it is not innovative as such. In any event, Enova requires Finn fjord to share the acquired "know how".⁵⁰ In light of this, the Authority finds it unlikely that the technology will provide Finn fjord and other Norwegian producers with a "first mover" advantage.

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.

⁴⁸ Point 164 of the EAG.

⁴⁹ The nearest city, Finnsnes, with its 6 000 residents, could in principle represent a potential group of customers. However, the total annual energy demand of the city of Finnsnes amounts to less than 10% of Finn fjord's envisaged production of 125 GWh/year. Furthermore, the city will soon be provided with district heating from a nearby garbage incineration plant run by the inter-municipal waste collection company *Senja Avfall IKS*.

⁵⁰ Finn fjord will *i.a.* take part in seminars and participate in knowledge-sharing projects.

3.4.2 *Maintaining inefficient firms afloat*

In accordance with point 180 of the EAG, the Authority has assessed whether the aid will contribute to keep an inefficient firm afloat.

On the basis of the information provided by the Norwegian authorities, it can be concluded that Finnfjord is not an inefficient company which would need to be held afloat with the aid. The accounts for 2006 to 2009 show positive net results.⁵¹ Finnfjord has a stable balance sheet structure with 37% equity ratio (in 2009).⁵² The aid is related to the extra environmental cost of the measure and, according to the Norwegian authorities, it is not expected to have a significant impact on Finnfjord's production costs related to ferrosilicon and microsilica.⁵³

The Norwegian authorities have informed the Authority that they are aware of only one other ferrosilicon producer (*Elkem Bjølvfossen*, in Norway) that has implemented an energy recovery measure. This recovery installation is older and less effective than the one Finnfjord intends to install. In light of this, the Authority considers that the aid enables Finnfjord to go beyond the normal behaviour in the market.⁵⁴

The Finnfjord project is granted aid on the basis of an open and transparent selection process with a high degree of competition between applicants under the Industry Programme of the Energy Fund,⁵⁵ in addition, the Energy Fund scheme under which the aid is granted covers a high number of potential beneficiaries without excluding companies that could address the same environmental objective,⁵⁶ all undertakings established in Norway are welcome to apply for aid under the Energy Fund scheme, in 2009, all projects that had an energy efficiency ratio equal to or better than 1.99 KWh/NOK of aid received aid under the Industry Programme.

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

3.4.3 *Market power/exclusionary power*

Finnfjord is one of Europe's leading producers of ferrosilicon. Its annual production amounts to approximately 100 000 tonnes of ferrosilicon.

According to the information provided by the Norwegian authorities, the world-wide annual production of ferrosilicon (with 55% - 86% silicon) amounts to approximately 7 million tonnes. The five largest producers of ferrosilicon are; Erdos (China), Russian Ferro Alloys (Russia and Ukraine), Ferro Atlantica (France, Spain, Mexico and Venezuela), Privat (Ukraine) and Elkem (Norway and Iceland). The two largest of these producers, Erdos and Russian Ferro Alloys, jointly produce approximately 500 000 tonnes. China is the largest ferrosilicon producer in the world.⁵⁷

The Norwegian authorities have explained that Finnfjord holds an approximate share of 1.4% of the global market, and an approximate share of 10% to 15% of the European

⁵¹ See Chapter I.3 of this Decision.

⁵² Point 180(a) of the EAG.

⁵³ Point 180(d) of the EAG.

⁵⁴ Point 180(c) of the EAG. The Authority does not consider Point 180(b) on aid to companies in sectors with overcapacity as relevant since the aid does not enable Finnfjord to increase its capacity with regard to production of ferrosilicon (or microsilica) and the markets are characterised by a higher demand than supply.

⁵⁵ Point 180(e) of the EAG.

⁵⁶ Point 180(f) of the EAG.

⁵⁷ This paragraph is based on information provided by the Norwegian authorities in Event No 572667.

market. According to Norway, other important EEA based market players are Elkem (which holds a 16% share of the European market), Ferro Atlantica (12%) and Fesil (10%). Under normal market conditions, the average European demand for ferrosilicon amounts to approximately 950 000 tonnes/year. European plants produce approximately 650 000 tonnes annually. The European demand is thus greater than the production. In practice, the European industry relies on imports from China. Chinese ferrosilicon is available on the European market, at affordable prices, despite anti-dumping duties imposed by the Council of the European Union.⁵⁸ Ferrosilicon is not quoted on any exchange services.⁵⁹

In addition to ferrosilicon, Finnfjord produces approximately 20 000 tonnes of microsilica annually. As noted above, Finnfjord's share of the market where microsilica is sold is considerably lower than its share of the ferrosilicon market.

According to the EAG competition concerns related to market power are unlikely to be identified in markets where the aid beneficiary has a market share below 25%.⁶⁰ As regards ferrosilicon, Finnfjord has a global market share of approximately 1.4% (and a share of 10% - 15% of the European market).

Finnfjord is neither dominant on the ferrosilicon nor the microsilica markets.⁶¹ In any event, the Authority considers that the aid will not significantly strengthen or maintain the market power of Finnfjord, compared to the counterfactual business as usual scenario, as the aid measure will not increase Finnfjord's capacity/expected production volume or the quality of the ferrosilicon or microsilica.⁶² Furthermore, the aid is granted to cover the extra environmental cost of the energy recovery measure and is not expected to appreciably influence Finnfjord's production costs. Hence, the aid is not expected to enable Finnfjord to lower its prices to the detriment of its competitors. Based on the above, the Authority does not consider it likely that the aid will enable Finnfjord to prevent new entrants to the market.⁶³

The buyers in the ferrosilicon and microsilica markets have a number of suppliers to choose amongst. In case Finnfjord changes its behaviour in the ferrosilicon or microsilica market (by for instance increasing its prices), the potential buyer can choose among a number of alternative suppliers, hence, the behaviour would be counterbalanced by the market forces as the buyer simply could change its source of supply.⁶⁴

⁵⁸ See Council Regulation No 172/2008 (OJ L 55, 28.2.2008, p. 6) imposing a definitive anti-dumping duty and collecting definitively the provisional duty imposed on imports of ferro-silicon originating in the People's Republic of China, Egypt, Kazakhstan, the former Yugoslav Republic of Macedonia and Russia. The measures consist of duties in the range of 5.4% to 33.9%, depending *i.a.* on the country of origin (certain companies are subject to individual duty rates independent of the country of origin). Regulation 172/2008 was amended by Council Regulation 1297/2009 (OJ L 351, 30.12.2009, p. 1) repealing the anti-dumping duty imposed on imports from the former Yugoslav Republic of Macedonia.

⁵⁹ This paragraph is based on information provided by the Norwegian authorities in Event No 572667.

⁶⁰ Point 181 of the EAG.

⁶¹ Point 182(a) of the EAG.

⁶² The quality of the ferrosilicon produced will not be affected by the aided measure, furthermore, as noted previously, ferrosilicon is not labeled with regard to its environmentally friendly image. Hence, the aid is not likely to have the negative effect of facilitating product differentiation and price discrimination by Finnfjord (point 182(c) of the EAG).

⁶³ Point 182(b) of the EAG.

⁶⁴ Point 182(d) of the EAG.

3.4.4 *Effects on trade and location*

The ferrosilicon and microsilica produced by Finnjord are sold on global markets. Based on the information available to the Authority, there is nothing to indicate that some territories will benefit from more favourable production conditions.⁶⁵

3.5 **Balancing**

On the basis of the above, the Authority considers that the positive effects of the aid to Finnjord, namely the fact that the aid is aimed at environmentally friendly energy recovery, outweigh the negative potential impact which the aid might have on competition and trade.

4 **Conclusion**

On the basis of the foregoing assessment, the Authority considers that the aid to Finnjord AS for an energy recovery system which the Norwegian authorities are planning to implement is compatible with the functioning of the EEA Agreement within the meaning of Article 61(3)(c) of the EEA Agreement.

With regard to the loan that is to be granted by *Innovation Norway* to Finnjord, referred to in Chapter I.5 of this Decision, the Authority notes that in the event that the terms of the loan turn out to be more advantageous than loans Finnjord could obtain in the market, the loan would likely involve state aid, within this context, the Authority reiterates that the Norwegian authorities are required to notify state aid to the Authority in accordance with Article 1(3) of Part I of Protocol 3.

HAS ADOPTED THIS DECISION:

Article 1

The EFTA Surveillance Authority concludes that the aid is compatible with the EEA Agreement within the meaning of its Article 61(3)(c) and raises no objections to the aid to Finnjord AS for an energy recovery system amounting to NOK 175 million.

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 language version of this decision is authentic.

⁶⁵ Points 183-185 of the EAG.

Decision made in Brussels, on 9 February 2011.

For the EFTA Surveillance Authority

Per Sanderud
President

Sabine Monauni-Tömördy
College Member