ROYAL NORWEGIAN MINISTRY OF
LOCAL GOVERNMENT AND REGIONAL DEVELOPMENT

EFTA Surveillance Authority
Rue Belliard 35
B-1040 Brussels

Your ref	Our ref	Date:
Case No: 69538	11/849-12	15.11.2013

Complaint against Norway concerning restrictions on electrical heating of buildings

We refer to your letter dated 7 October 2013 concerning further information on the Norwegian regulation on energy supplies to buildings in the Forskrift av 26. mars 2010 nr 489 om tekniske krav til byggverk § 14-7 ("the Regulation").

In the following, we shall provide the requested information regarding the Regulation. It should be noted that the Regulation has been subject to public consultations. The Norwegian Government is aware that some bodies with interests in the use of electricity requested minimal restrictions on the use of electrical heating in buildings. However, neither the previous nor the new information provided by the complainant is known to us.

We have included the questions from the Authority.

1. The first stated aim which the above mentioned rule seeks to pursue is the security of energy supply. With regard to this aim, the Norwegian Government is invited to:

a. Please substantiate how the measure at hand is proportionate to the aim which is pursued, and how the measure makes this aim achievable.

Limiting the use of electricity for direct heating in buildings is one of many policy measures to securing energy supply in Norway. The effect of this particular measure is explained more in detail in 2b. In our view the Regulation is appropriate for achieving the aim of security of supply. As we see it, it is difficult to achieve the aim by applying less restrictive measures. It is necessary to ensure that a certain proportion of the heat demand can be covered by other energy supply than direct acting electric heating. As stated in our letter dated 18 May 2011, an

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alternative measure through a control system on direct acting electricity source will not provide equal protection for security of supply.

b. Whereas the Norwegian Government relies, in its letter of 14 February 2012, on the power situation in the winter of 2010-2011 to illustrate the Norwegian power system's vulnerability in this regard, the Authority would like to note the following. In the winter of 2010-2011, several factors contributed to the "power crisis". The extreme cold with record-low temperatures, in combination with the low precipitation, interruptions on the NorNed cable, and interrupted supply from Swedish nuclear power. Still, it seemed that Norway exported power during this time. If even in the "power crisis" winter of 2010-2011, security of supply was not truly in jeopardy - what are the Norwegian Government's thoughts on the necessity of § 14-7 of the Regulation with regards to the pursuit of the above mentioned aim?

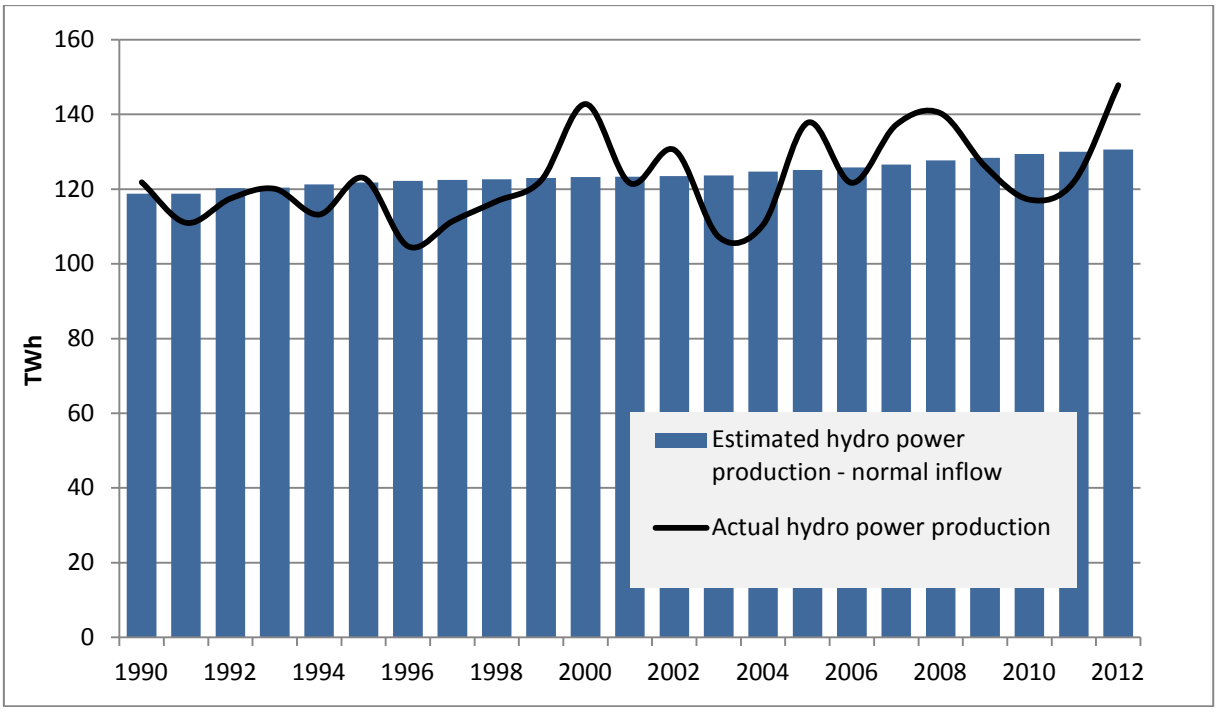
The vulnerability of the Norwegian energy system is closely linked to two elements:

1. A hydro dominated power sector, with substantial and non-predictable variations in production from year to year
2. An electricity dominated demand side, with large non-predictable variations in the heating induced demand from year to year due to changes in temperatures

Regarding 1) and 2) we would also like to emphasize the difference between observed variations in production and consumption and the extreme scenarios that the energy authorities have to take into account when designing energy policy to ensure future security of supply . Yearly statistics may also conceal more strained situations within a year. Large hydro production in the spring may be offset by a very dry and cold winter, so that the power balance for the year as a whole may seem normal.
In our previous letter, the power situation in 2010-11 was mentioned to illustrate the Norwegian power systems vulnerability by providing a *recent* example of a year with low production and high consumption of electricity. It should also be noted that we do not refer to this situation as a ”power crisis”. There have been other occations where the situation has been more challenging than in 2010-11. One example is the situation in 2002-03, with the lowest inflow to the hydropower system ever registered.

Power production
As previously explained in our letters from of 18 May 2011 and of 14 February 2012, the availability of the Norwegian hydro power production can vary substantially from year to year. Over the last 20 years, the annual inflow available to Norwegian hydro power plants has varied by about 60 TWh. This is the main reason for the large variations in annual hydro power production, as shown in figure 1.

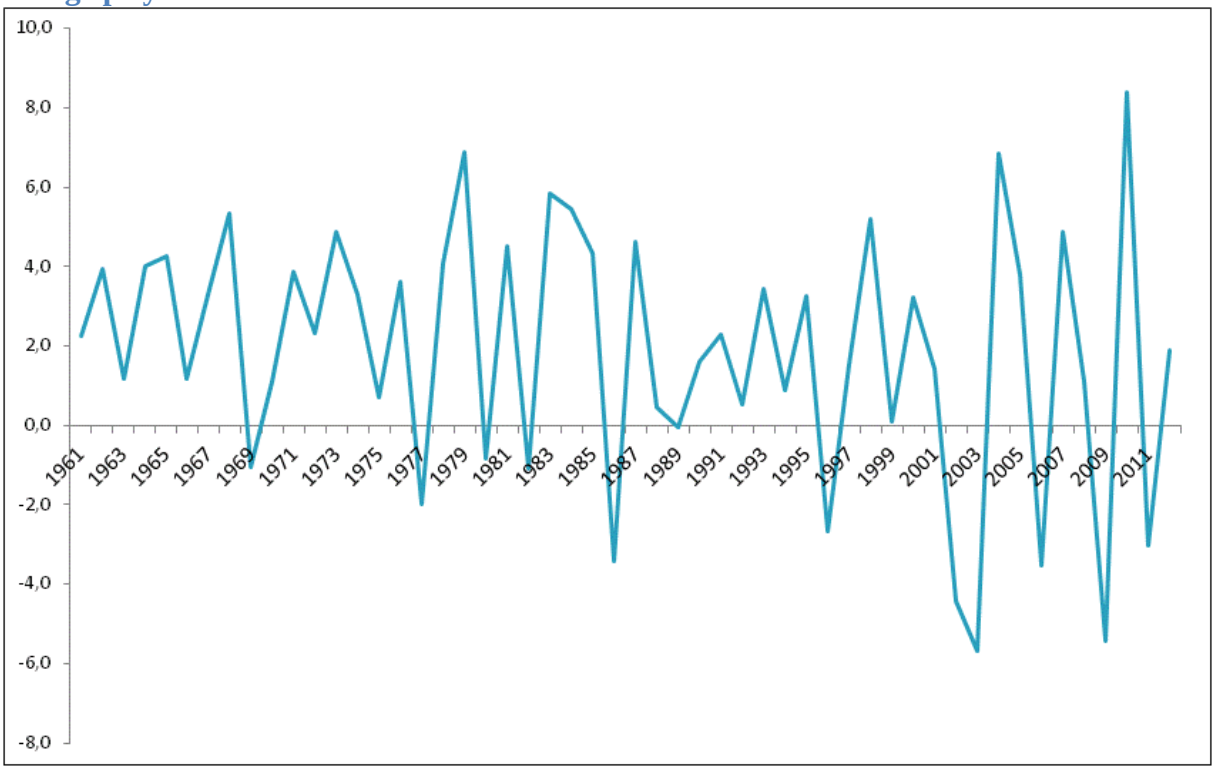
Figure 1 Hydro power production in Norway - estimated production in a year with normal inflow vs. actual production



Energy consumption

Energy usage in Norwegian buildings is predominately based on electricity. To a much larger extent than other countries, electricity is used for space heating and water heating. Due to the widespread use of electricity for heating, peak demand is at its highest on cold winter days, and the total electricity consumption is higher in years with cold winters. The total consumption of electricity in Norway varies from year to year, as shown in figure 2, partly because of these variations in temperature during the winter.

Figure 2 Yearly variations in the annual electricity consumption in Norway, percent change pr year



We would also like to underline that electricity is not the only energy carrier used for heating purposes in Norway. Other energy sources, like biomass and fuel oil, are important elements in securing energy supply. Without this flexibility in the energy mix used for heating purposes, the situation in 2010-11 would have been more difficult. Sustaining this flexibility on the demand side, and avoiding that the share of electricity used for heating purposes gets even higher are important measures in reducing the vulnerability in the Norwegian energy system.

Concluding remarks

These annual variations in Norway, both when it comes to production and consumption of energy, have to be taken into account when designing energy policy. The energy system must be able to handle the most challenging years in the future, i.e. years that are both very dry (low production) and very cold (high consumption), and the most challenging hours, ie. the highest level of peak demand during one hour of a cold winter day. Diversifying the energy mix and limiting the use of electricity for direct heating in buildings is therefore a central part of securing energy supply in Norway.

As for the registered amount of import and export in different periods; Norway is a part of a Nordic power market, with close integration to Sweden and Denmark, as well as interconnectors to Finland, the Netherlands and Russia. In 2010/2011, cold weather, low nuclear production and lower hydro power production led to higher prices also in Sweden. In periods of the week/day/month with an even more strained situation in Sweden, prices in this market will rise above the Norwegian price, and power will flow from Norway to Sweden.

c. **The Norwegian Government appears to focus on the winter of 2010-2011 with regards to illustrating the necessity of the measure in relation to its pursuit of the above mentioned aim, in its letter of 14 February 2012. However, what were the Norwegian Government's concerns in this regard at the stage at which the rules were at a draft stage (in 2009)?**

The energy authorities design energy policy to ensure future security of supply, and have to take into account possible extreme scenarios, as described in 1 b).

2. The second stated aim of the rules is the reduction of greenhouse emissions. With regard to this aim, the Norwegian Government is invited to:

a. **Please substantiate how the measure at hand is proportionate to the aim which is pursued, and how the measure makes this aim achievable.**

As previously stated the basis for the Regulation was made out of considerations for the need for reduction of emission by burning fossil fuels and the need for strengthening the security of energy supply. The regulations contributed to fulfillment of the objectives of the Directive 2002/91/EC, which aims at promoting energy efficiency and reducing emissions of greenhouse gases.

As we see it the questions in point 2 may indicate that the restrictions on electrical heating of buildings alone have the purpose of promoting the aim of limiting greenhouse gas emissions in Norway. In this context, we would like to underline that greenhouse gas emissions from the building sector mainly are caused by heating with fossil fuels. In general the objectives of the Regulation are not based on reduction of greenhouse emissions from electrical heating of buildings. Limiting the use of electricity for direct heating in buildings is primarily a central part of securing energy supply in Norway.

The majority of the energy consumed in buildings is electricity, mainly from hydropower. Energy usage in Norwegian buildings will therefore have only a minor impact on greenhouse gas emissions. Greenhouse gas emissions from the Norwegian building sector are caused by heating with fossil fuels. In 2010, emissions from heating in buildings were 1.9 million tonnes of CO2-eguivalents. This is equivalent to 3-4 percent of the national emissions. However, this will vary a lot from one year to another. There has been a reduction in the emissions since 1990, mainly because the use of fossil oil has decreased, cf. White Paper No. 28 to the Storting (2011-2012) Good buildings for a better society. A forward-looking building policy, Chapter 5. 2.

As regards the Regulation, the aim of reduction of greenhouse gas emissions from buildings is for the most part achieved by restrictions on heating systems based on fossil fuels. The Regulation is appropriate for achieving the aim of limiting greenhouse gas emissions from heating of buildings.

b. Which technologies did the Norwegian Government wish to promote with § l4-7 of the Regulation? How did the Norwegian Government consider these technologies suitable and necessary for the purposes of achieving the above mentioned aim?

The Norwegian Government did not seek to promote any specific technologies with § 14-7 of the Regulation. The aim of the amendment was to stimulate the introduction of alternative sources than those using fossil fuels or direct acting electricity. The basis for the restrictions was made out of considerations for securing energy supply and limiting greenhouse gas emissions. Examples of alternative heating systems are biofuels, biogas, district heating, solar energy and heat pumps from ambient air, ground and water

c. Were less restrictive means only considered in relation to heating sources for buildings, i.e. as a reduced or smaller percentage of the requirements in Section 14-7(2) and (3) of the Regulation, or as requirements to control systems for direct-acting heating, as indicated in your letter of 14 February 2013 (on page 3-4)? Was there any consideration of alternative, less restrictive measures on a broader scale?

Less restrictive means were not only considered as a reduced percentage. As previously explained in our letter dated 18 May 2011, it was considered whether the requirement should only be amended for fossil fuels, and not for electrical heating. In this case, the alternative would be measure through control system on direct acting electricity source.

The Authority also asks if alternative, less restrictive measures on a broader scale were considered. As the possibilities for choosing more environmentally friendly solutions for energy supply mainly exists for heating purposes, the Government focused on these in the draft stage of the energy rules. Other measures, such as price-control, were not considered appropriate as they will potentially have an unfair impact.

d. The Authority notes that Directive 2009/128/EC aims at promoting the use of energy from renewable sources, hereto inter alia the use of district heating. In this context the Authority would kindly like to ask you to explain:

i. The Authority invites Norway to describe the potential and the actual use of district heating at the present time. In this regard, the Authority particularly welcomes information on the percentage and the co2 emissions of district heating based on bioliquids/waste energy sources and district heating which captures waste heat from industrial processes etc.

1. Which added value does Section l4-7 of the Regulation have for the purposes of promoting district heating, considering the requirements in Section l4-8 of the Regulation?

The production of district heating in Norway was 4.7 TWh in 2012, according to Statistics Norway. Service industries accounted for the largest share of the consumption with 2.8 TWh, whereas households and industry consumed 913 GWh and 477 GWh, respectively.

In 2012, the most used fuel for district heating production was waste incineration which accounted for 53 % of the fuel mix, followed by bio waste and bio liquids (23%). Oil and natural gas share of the fuel mix was 7, 4 %.

In recent years, there has been a declining share of fossil fuels in district heating production and producers are continually making efforts to substitute fossil fuels with more environmentally friendly options.

The government supports district heating development through the state owned company Enova. Enova expects that the production of district heating will continue to grow in coming years.

District heating contributes to security of energy supply.

(2 d i 1)
Section14-7 of the regulation aims to ensure alternatives to direct-acting electricity heating solutions in order to contribute to security of supply. To meet the requirement in the regulation a wide range of heating solutions can be used, such as heat-pumps, wood burning and pellet fire, thermal solar collectors, biogas, bio liquids and district heating.

Whereas section 14-7 applies to all new buildings in Norway, section 14-8 concerns district heating specifically and is only relevant in areas where concession is given to a district heating producer. Within the concession area, the local municipality may make it mandatory for new buildings to connect to the district heating system. Section 14-8 commands new buildings to connect to the local district heating system if the local municipality has made it mandatory.

e. How does the Norwegian Government consider the restrictions in Section l4-7 of the Regulation on direct-acting electricity for heating, which is approximately 96% of renewable, as suitable and necessary for the purposes of attaining the aim of reducing CO2 emissions?

The restrictions in § 14-7 on direct-acting electricity for heating is a policy measure to diversify the energy supply away from electricity in order to increase the security of energy supply in Norway.

Yours sincerely,

Ann Ingeborg Hjetland

Director General

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Deputy Director General

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