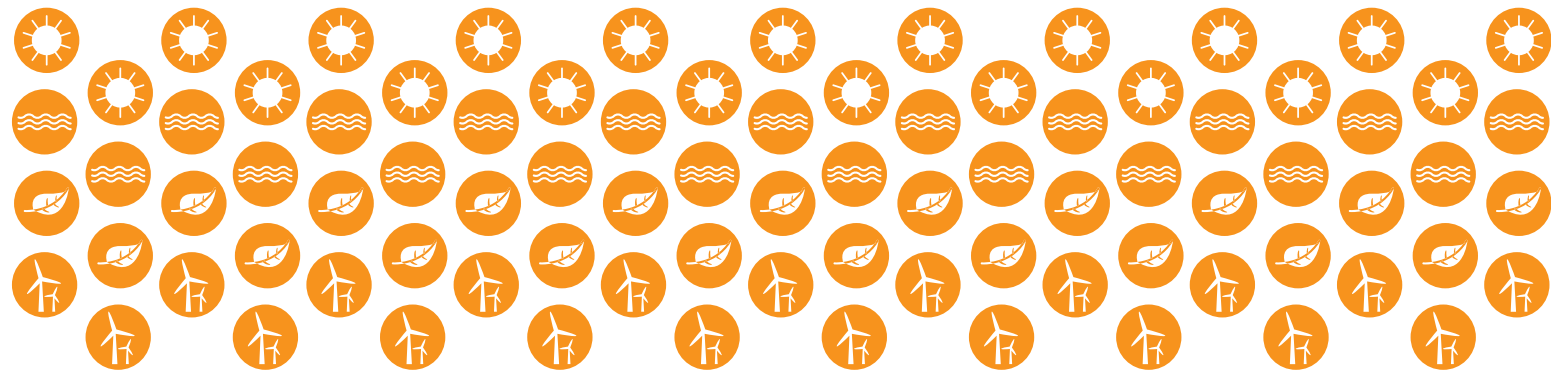
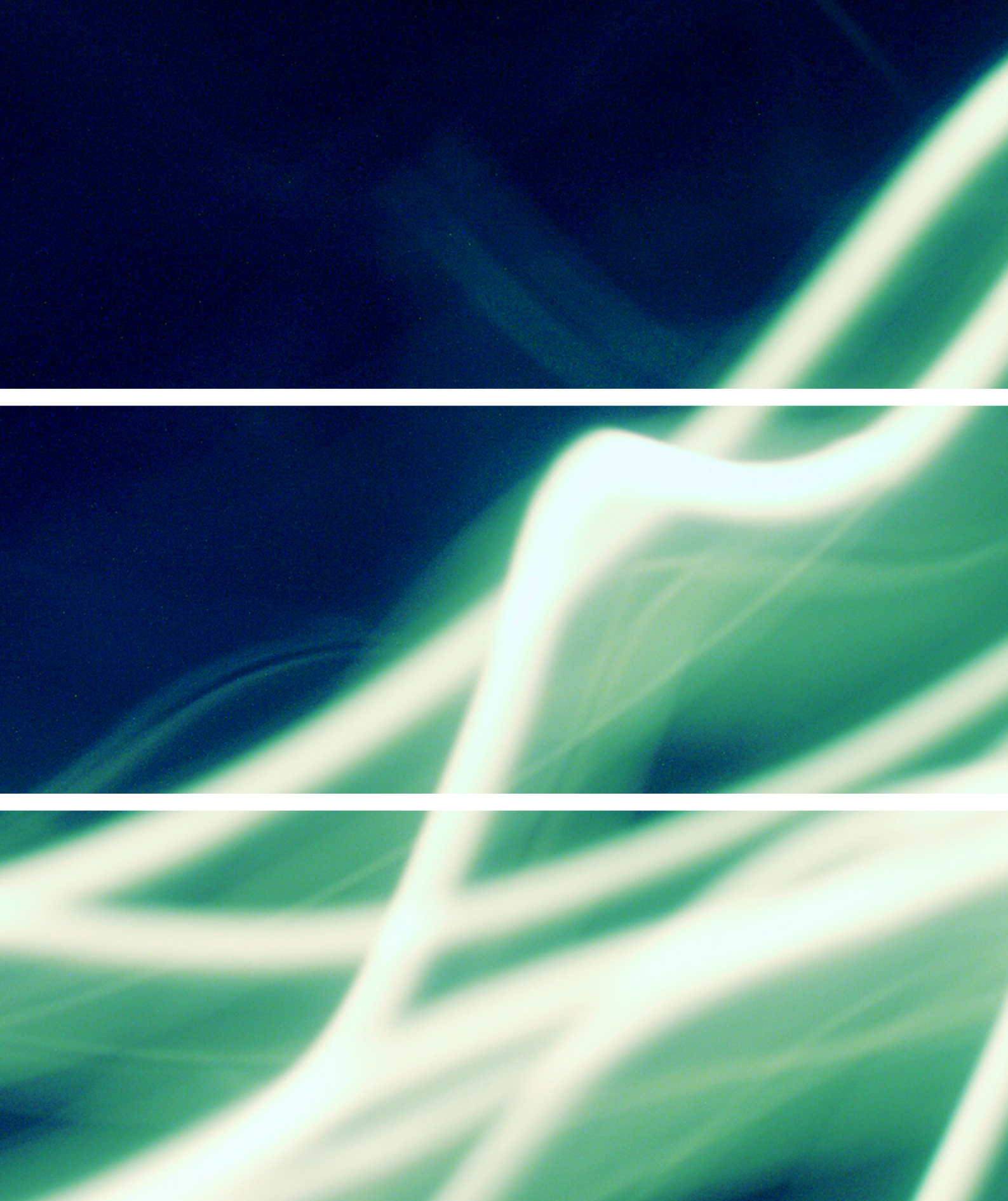


The Norwegian-Swedish Electricity Certificate Market

ANNUAL REPORT 2013

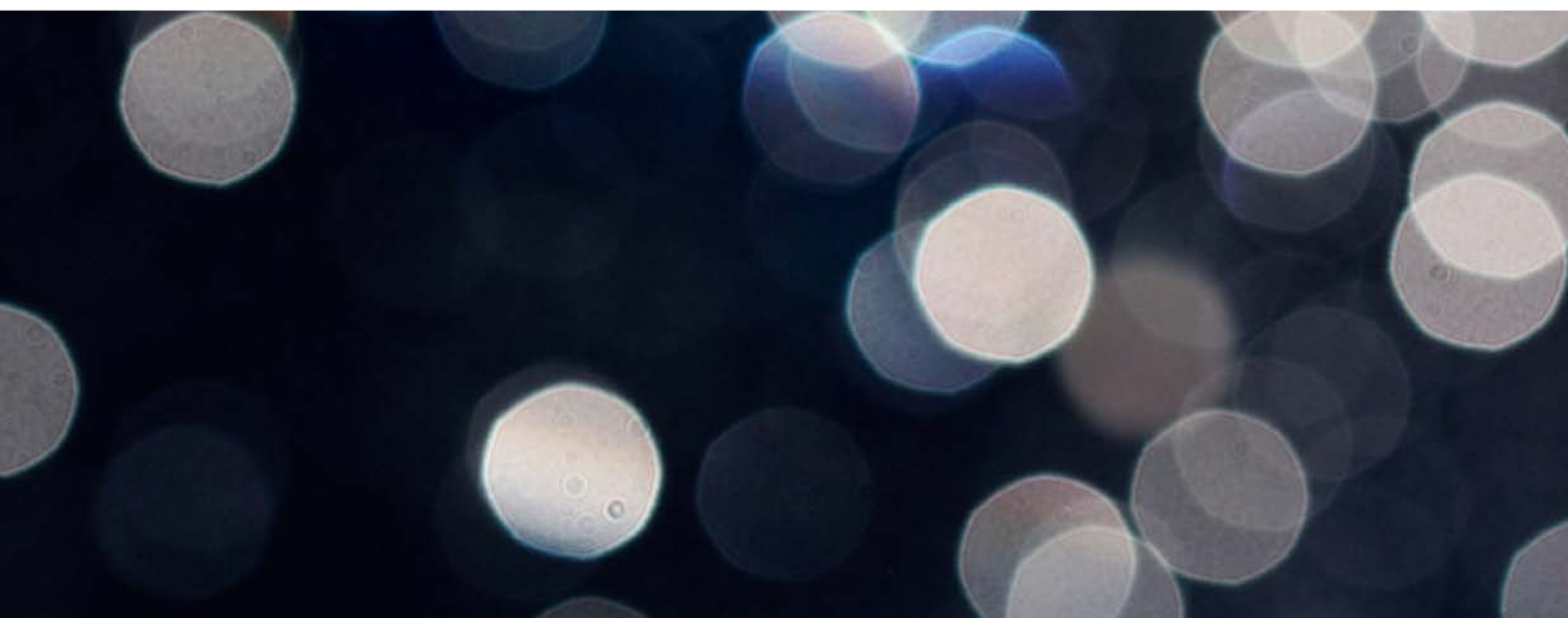




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Preface

This is the 2013 annual report from the Swedish Energy Agency and the Norwegian Water Resources and Energy Directorate (NVE) on the joint Norwegian-Swedish electricity certificate market.

Our intention in this report is to give a picture of the most important events and key figures for the electricity certificate market last year.

As well as information about progress towards the common goal, this report also includes a summary of the approved production in the Swedish electricity certificate system up to the end of 2011 and approved plants in the Norwegian transition system

Since 1 January 2012, Norway and Sweden have had a joint market for electricity certificates. This is based on the Swedish electricity certificate market, which has existed since 2003.

Together with Sweden, Norway's goal is to develop new power production based on renewable energy sources corresponding to 26.4 TWh by the end of 2020. The two countries will finance half each, but it is up to the market to decide where and when the new production will take place.

If you would like more information about the electricity certificate system and the electricity certificate market, see the respective authorities' websites.

The project managers for the annual report were Johan Lundberg of the Swedish Energy Agency and Anton Jayanand Eliston of NVE.

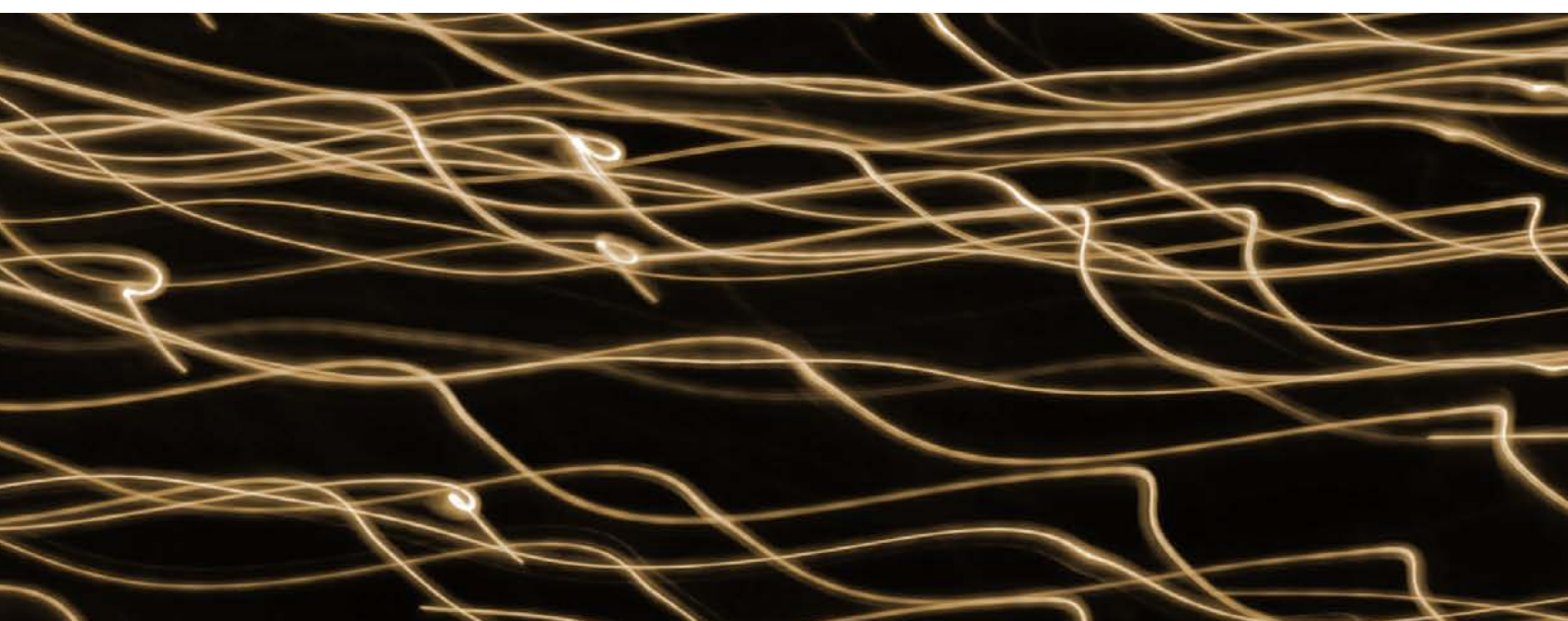
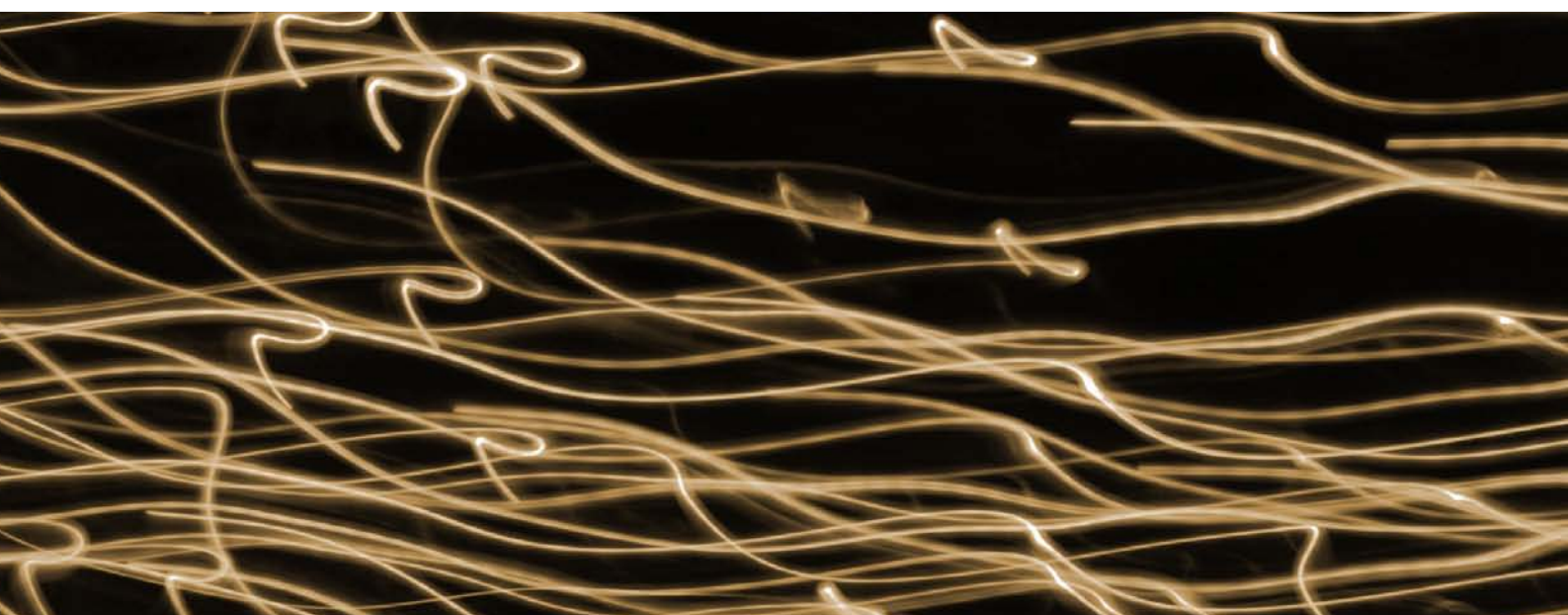


Erik Brandsma,
Director General
Swedish Energy Agency



Per Sanderud
Water Resources and Energy Director
Norwegian Water Resources and
Energy Directorate





The Nordic electricity market¹

The Nordic countries have a common, deregulated electricity market, where energy companies can buy and sell electricity via the Nord Pool exchange. Electricity distribution via the electricity networks (national, regional and local grids) is controlled by monopolies. The trading in electricity involves producers who sell electricity via the electricity exchange (Nord Pool) to electricity trading companies, who in turn sell the electricity to users. Alternatively, producers may sell the electricity direct to users. The total price paid by the user includes tax as well as the cost of the electricity. In addition to the sale of electricity, the producers' costs and income are affected by the EU's Emission Trading Scheme and the electricity certificate system.

Many energy companies and functions must cooperate efficiently on the electricity market in order to safely deliver electricity to users and in order to enable consumers to buy their electricity on a market where free competition prevails.

The national grids are owned and managed by each country's transmission system operator (TSO). They are Svenska Kraftnät in Sweden, Statnett in Norway, Energinet.dk in Denmark and Fingrid in Finland.

Electricity producers can choose whether they wish to sell the electricity directly to major users, to electricity trading companies or to the electricity exchange. Most of the electricity produced is sold via the electricity exchange's spot market.

Electricity trading companies purchase the electricity from the producers or from the electricity

exchange, and sell it to electricity end users. The role as electricity retailer (electricity supplier) involves having commercial contacts with the end users.

The grid operators own the regional and local networks. They are responsible for ensuring the electric energy is delivered to the users. The regional networks transport electricity from the national grid to the local networks, in some cases also to major users, such as large industrial companies. The local networks distribute the electricity to other electricity end users, such as households, offices, industries, etc.

Electricity end users, such as households and industries, use the electricity. Users normally have both an agreement with an electricity trading company to buy electricity and an agreement with an electricity network company to be connected to its network. Users pay a network fee to their electricity network company for the connection and transfer of electricity.

The market place for trading in electricity - the Nordic electricity exchange Nord Pool Spot - offers standard agreements that make it easier for the market participants to do business with each other. Nord Pool Spot has a spot market (physical trading) for the trade in electricity per hour up to the day before delivery. Nasdaq OMX Commodities have a forward market (financial trading) for long-term trade, where the market participants can hedge their electricity price. Most of the trade per hour is done on the spot market, while a minor part is done bilaterally between electricity producers and electricity trading companies. The long-term trade can also be done bilaterally.

¹ Source: Svenska kraftnät, *Elmarknaden i Sverige och Svenska kraftnäts roll (The Electricity Market in Sweden and the Role of Svenska Kraftnät)*, ISBN 978-91-976721-0-8, May 2011

Key figures for 2013

The tables below summarise the relevant figures for the electricity certificate market in 2013.

Analysis and further details of the content of the tables are presented throughout this publication.

Key figures a

Key figures	Norway	Sweden
Issued electricity certificates (million certificates)	0.9	15.4
Certificates issued to plants that are included in the joint electricity certificate target (million certificates)	0.4	4.1
Certificates issued to plants that are not included in the joint electricity certificate target (million certificates)	0.5	11.3
Normal annual production for plants that are included in the joint electricity certificate target (TWh)	0.9	5.3
Cancelled electricity certificates (million certificates)	3.9	12.3
Quota obligation fulfilment (%)	99.95	99.97

Key figures b

Key figures	Norway and Sweden
Surplus 2013 (million certificates) (change since 2012)	12.0 (+ 0.1)
Volume-weighted average price of transactions in the electricity certificate registers NECS and Cesar (NOK/electricity certificate) (change since 2012)	185 (+4)
Average spot price (NOK/electricity certificate) (change since 2012) ²	178 (+34)

1) An exchange rate of 100 SEK = 92.25 NOK has been used to calculate prices in Norwegian kroner.

2) Based on the average of the daily closing prices of spot price contracts at the three largest brokers in the electricity certificate market in 2013.

How the electricity certificate market works

Electricity certificates are a financial support for the production of electricity from renewable energy sources in Norway and Sweden. The electricity certificate system is market-based and is intended to increase power production from renewable energy sources in a cost-effective manner.

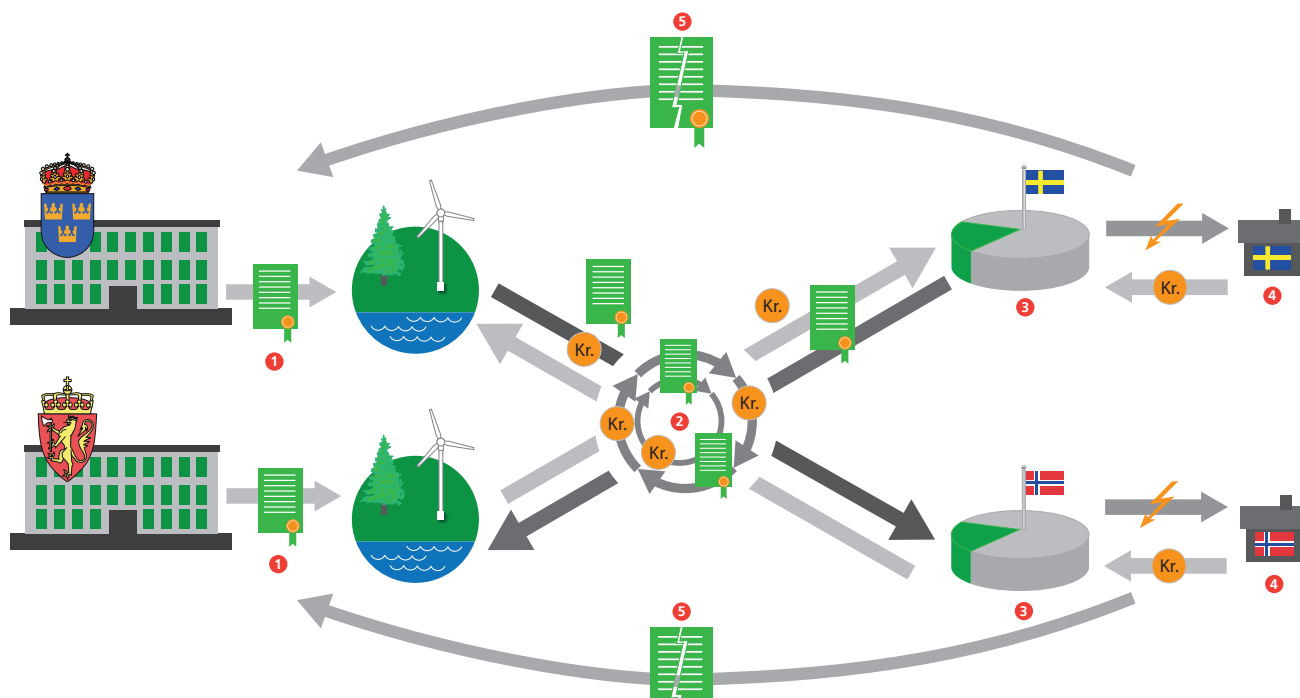


Illustration of the electricity certificate market

1 The power producers receive one electricity certificate for each megawatt hour (MWh) of renewable electricity produced, over a maximum 15 years.

2 The electricity certificates are sold in a market where supply and demand determine the price. In this way, the producers receive extra income in addition to the power price.

3 Demand for electricity certificates arises in that power suppliers and certain power customers are obligated by law to buy electricity certificates corresponding to a certain proportion (quota) of their electricity sales or usage.

4 The electricity end users pay for the development of renewable electricity production because the cost of the electricity certificates is included in the electricity bill.

5 Every year, the market participants with quota obligations must cancel electricity certificates in order to fulfil their quota obligation.

A COMMON MARKET

Since 1 January 2012, Sweden and Norway have had a joint market for electricity certificates. This common market is based on the Swedish electricity certificate market, which has existed since 2003. The target is to increase renewable power production by a total of 26.4 TWh in both countries from 2012 to the end of 2020, and thus contribute to the countries' targets in relation to the EU Renewable Energy Directive.³ The common electricity certificate market is an example of a so-called collaboration mechanism under the EU Renewable Energy Directive.

Norway and Sweden are credited with an equal proportion of the increased renewable energy production in relation to the 2012 level when reconciling with

the countries' target in 2020. Sweden and Norway will also finance renewable energy production in plants that came into operation before 1 January 2012 and that are entitled to electricity certificates. These plants are not included in the joint target. During the period from 2003 to 2012, i.e. before Norway and Sweden had a common market, Sweden increased its renewable power production by 13.3 TWh.

Norway has linked itself with the Swedish market, which means that the market has a greater volume and more participants than a national market would have had. The target for increased renewable electricity production can thereby be achieved in a more cost-effective manner, in that investment will be directed to where conditions are most favourable.

FACTS 1: The Renewable Energy Directive

The EU Renewable Energy Directive sets binding national targets for the proportion of renewable energy. Binding national targets have been set so as to ensure that by 2020 the EU will have a proportion of renewable energy corresponding to 20 per cent of total energy consumption. In order to achieve the overall target at the lowest possible cost, the directive allows for cooperation on measures through so-called collaboration mechanisms. The following four mechanisms are defined in the directive: (1) Renewable energy in excess of what is needed to achieve a country's own target can be sold (transferred statistically) from one member country to another. (2) Joint energy projects can be developed in electricity, heating and cooling (3) For electricity, collaboration on projects in third-party countries is also possible (4) Two or more member countries can coordinate support systems or establish joint support systems. The Norwegian-Swedish electricity certificate system is an example of a joint support system and is the first example within the EU of how collaboration mechanisms can be utilised in order to achieve the national targets in 2020.

3) Norway adopted the EU directive on renewable energy in December 2011

POWER PRODUCERS

A power producer applies to the Norwegian Water Resources and Energy Directorate (NVE) or the Swedish Energy Agency to have its plant approved for the issue of electricity certificates. Applications for approval are sent to NVE for power stations in Norway, while for power stations in Sweden, the application is sent to the Swedish Energy Agency. A power station cannot be approved for the issue of electricity certificates until the application is completed and the power station is in operation. The Norwegian or Swedish state issues electricity certificates to power producers for each megawatt hour (MWh) they produce. The electricity certificates can thereafter be sold and the producer will receive extra income in addition to the electricity price.

Electricity certificates are issued on the 15th of each month, based on the power production in the previous month reported by grid owners and power producers with responsibility for reporting the metered values. Certificates are issued to the producer's electricity certificate account in the Norwegian or Swedish electricity certificate register: NECS or Cesar.⁴

New plants and production increases in existing plants are entitled to receive electricity certificates for 15 years, although not after the end of 2035, when the electricity certificate system expires. The total number of electricity certificates issued is determined by power production in the approved

FACTS 2: Obligation in accordance with agreement

In accordance with the agreement between Norway and Sweden for a common market for electricity certificates, the two countries will endeavour to cancel 198 million electricity certificates each (corresponding to 198 TWh) by 2035. The reason why each country is to cancel 198 TWh is that they are each to finance 13.2 TWh of renewable power production a year for 15 years (15 years x 13.2 TWh = 198 TWh).

Norway and Sweden have agreed on equal ambitious obligations, starting from the date on which the common market was established. After the Swedish Riksdagen's decision in 2010 to establish a new Swedish quota curve that would give an increase of 25 TWh from 2002 to 2020, a quota curve was obtained that was designed to give an increase of 13.2 TWh from 2012. Since the two countries agreed to have the same ambition, the target for the common market became 26.4 TWh by the end of 2020.

FACTS 3: Energy sources

Electricity produced from the following sources is entitled to electricity certificates:

- Biofuel (and peat in combined heat and power plants in Sweden)
- Geothermal energy
- Solar energy
- Hydropower
- Wind power
- Wave power

4) Statnett is responsible for the NECS register and Svenska Kraftnät (SvK) is responsible for Cesar.

5) In Sweden pursuant to the Regulation (2011:1480) on electricity certificates. In Norway pursuant to FOR 2011-12-16 no. 1398: Regulation on electricity certificates. The owner of a biofuel plant must itself report each month, for the previous month, how great a proportion of the electricity produced comes from fuel that is entitled to electricity certificates.

plants. In combined heat and power plants, the issue of certificates is also affected by the proportion of renewable fuel. External factors such as temperature, rainfall, wind and power prices also affect power production and thereby the issue of electricity certificates.

QUOTAS AND MARKET PARTICIPANTS WITH A QUOTA OBLIGATION

The market participants with quota obligations are primarily power suppliers, but also certain electricity customers (see fact box below). These must buy electricity certificates each year corresponding to a certain proportion of their electricity deliveries or consumption, the so-called quota obligation. The quota curve states how great a proportion of the calculation-relevant electricity consumption the market participants with quota obligations must buy electricity certificates for each year.

The quotas, which are defined in legislation on electricity certificates, gradually increase until 2020 (see Table 1 in the table section and Figure 1), which causes

FACTS 4: Issue period for approved plants

- Plants that have come into production in Sweden from 1 May 2003 are issued with electricity certificates for 15 years.
- In Norway, the issue period is 15 years from the date of approval, less any time the plant may have been in operation before 1 January 2012.
- Production increases at existing plants in Norway and Sweden are entitled to electricity certificates for the increased volume of renewable power production for a maximum of 15 years.
- Comprehensive rebuilding of existing plants in Sweden is treated as a new plant with certificates issued for up to 15 years.

5) Svenska Kraftnät (Svk) is the regulatory authority for accounts in Cesar, Statnett for NECS

increasing demand for electricity certificates. The quotas are specific to each country. Norway's quotas run from 2012 to 2035. Sweden's quota curve is from

FACTS 5: Market participants with quota obligations

In Norway the following market participants have quota obligations:

- All those who supply electrical energy to end users,
- All those who consume electrical energy that they have produced themselves and
- All those who buy electrical energy for their own use on the Nordic power exchange or through bilateral agreements.

In Sweden the following market participants have quota obligations:

- Power suppliers
- Electricity consumers who use power they have produced themselves, if the quantity of consumed electrical energy exceeds 60 MWh per year of calculation and has been produced in a plant with an installed output greater than 50 kW.
- Electricity consumers who have used electricity they have bought on the Nordic power exchange.
- Power-intensive industries that have been registered by the Swedish Energy Agency.

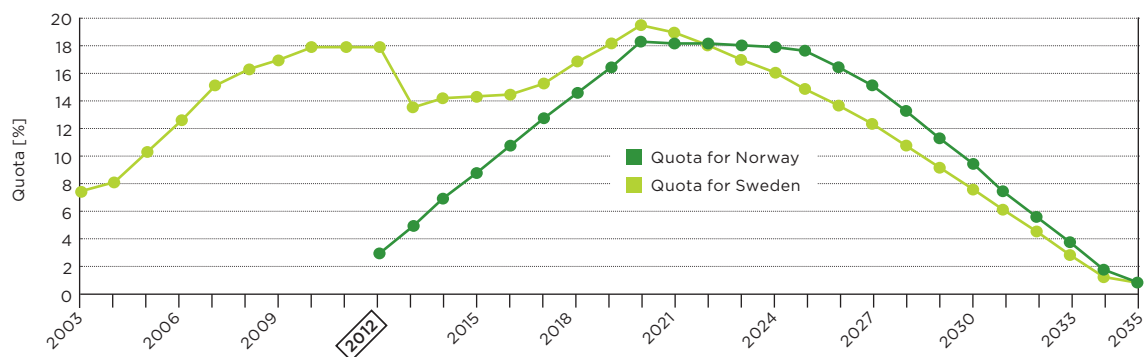


Figure 1. Quota for Sweden and Norway

Source: Act (2011:1200) regarding electricity certificates; Act 24.06.2011 no. 39: Act regarding electricity certificates.

2003 to 2035. The quota curves are designed to stimulate the development of renewable power production in accordance with the countries' established targets. The respective countries' quota curves are calculated and set based on assumptions of future calculation-relevant electricity consumption. If the actual calculation-relevant electricity consumption deviates from expectations, this may mean that the quota curves must be adjusted so that cancellation can occur in accordance with the agreement between countries. The first adjustment is to occur in connection with the progress review in 2015. Such an adjustment of quotas does not mean any change in the target of 26.4 TWh in increased renewable power production.

For 2013, Norwegian market participants with quota obligations had to purchase electricity certificates corresponding to 4.9 per cent of their calculation-relevant electricity consumption. In Sweden, the quota was 13.5 per cent. The main reason for the quotas being different is that they have also been determined to finance the plants in the transition system. The difference in quotas is also due to the calculation-relevant electricity consumption being higher in Sweden than in Norway.

TRADING

Trading in electricity certificates occurs on the electricity certificate market, where the price is determined by supply and demand. The common market makes it possible to trade in both Swedish and Norwegian electricity certificates. Trading occurs through bilateral agreements between power producers and market participants with quota obligations, as well as via brokers. Both power producers and market participants with quota obligations must have an electricity certificate account. Swedish participants have electricity certificate accounts in Cesar, while Norwegian participants have accounts in NECS. When traded, electricity certificates are transferred from the seller's to the buyer's account. Electricity certificates are mainly traded in two types of contract: spot price contracts and forward contracts. For both types of contract, the price of electricity certificates is set on the date of the agreement. The main difference between the contract types is the date of transfer of and payment for the electricity certificates. With forward contracts, transfer and payment occur on a specified future date, while with spot price contracts the certificates are paid for and transferred within five and ten working days respectively.

QUOTA OBLIGATION AND CANCELLATION

Each year, market participants with quota obligations must notify NVE or the Swedish Energy Agency of the number of certificates they need to fulfil their quota obligation and have that number in their electricity certificate accounts. Swedish market participants with quota obligations do this by sending a declaration of their quota obligation to the Swedish Energy Agency. Norwegian market participants with quota obligations approve the quota obligation that is presented in NECS.

In order to fulfil the quota obligation, the market participants with quota obligations must have certificates corresponding to the statutory proportion of their calculation-relevant electricity consumption in their electricity certificate accounts. The certificates are cancelled on 1 April, which means that the electricity certificates are deleted and cannot be re-used. Cancellation means that market participants

with quota obligations must buy new electricity certificates in order to fulfil next year's quota obligation. This creates a constant demand for electricity certificates.

Important dates for quota obligation and cancellation:

15. February - Norway: The grid companies must report to NECS the calculation-relevant electricity consumption for every market participant with quota obligations in their areas.

16. February - Norway: The total calculation-relevant electricity consumption of the market participants with quota obligations for the previous year is available on the participant's account in NECS.

1 March - Norway: The last day for market participants with quota obligations to approve their quota obligation for the previous calendar year, as well as any corrections for the calendar year before that.

FACTS 6: The power suppliers' costs

The power suppliers buy electricity certificates on the electricity certificate market, where the price is set by supply and demand and thus varies over the course of time. The power suppliers' costs for electricity certificates are included in invoices to electricity customers. The costs vary according to the power suppliers' expenses in buying electricity certificates and the quota curve. The price that electricity customers pay for electricity certificates also depends on the type of electricity agreement. In order to calculate how much a certain electricity certificate price corresponds to in cost per kWh, the following formula can be used:

$$\frac{\text{Electricity certificate price} \left[\frac{\text{Kr.}}{\text{MWh}} \right] \times \text{Annual quota [\%]}}{10} = \text{cost of electricity certificate (øre/kWh)}$$

The volume-weighted average annual price for transactions in the electricity certificate registers NECS and Cesar for electricity certificates in 2013 was NOK 190 per certificate. The quotas in 2013 were 4.9 per cent in Norway and 13.5 per cent in Sweden. This corresponds to an approximate average cost for electricity certificates of 0.9 øre/kWh (NOK) in Norway and 2.5 øre/kWh (NOK) in Sweden. Transaction costs for the power supplier and VAT are in addition to this cost.

Sweden: Last day for Swedish market participants with quota obligations to send in declarations of their calculation-relevant electricity consumption as a basis for the previous year's quota obligation.

31 March - Norway and Sweden: Last day for market participants with quota obligations to have a sufficient number of electricity certificates in their accounts to fulfil their obligations.

1 April - Norway and Sweden: Cancellation of the number of electricity certificates needed to fulfil the quota obligation. If there are insufficient certificates in the account, NVE or the Swedish Energy Agency will charge a quota obligation fee.

THE ELECTRICITY CERTIFICATE MARKET IS FINANCED BY ELECTRICITY CUSTOMERS

If the market participant with quota obligations is a power supplier, the costs of electricity certificates are included in the electricity customers' invoices. In this way power customers in Sweden and Norway help to pay for the development of power production from renewable energy sources. Power-intensive industries have an electricity certificate cost linked to their electricity consumption that is not used in production processes.

Even though Sweden and Norway are to finance an equally large amount of their common target, the cost per kilowatt hour (kWh) is different. Different certificate quotas mean that the cost per kilowatt hour is different in the two countries, even though the electricity certificate price is the same.

Household customers with an annual electricity consumption of 20,000 kWh in Sweden and Norway paid an average of kr 540 and kr 240 excluding VAT respectively for electricity certificates in 2013.⁶

ONE ELECTRICITY CERTIFICATE MARKET, TWO NATIONAL REGULATIONS

The agreement of 29 June 2011 between Norway and Sweden on a common market for electricity certificates sets out the purpose of the electrical certificate system and how the market is to function. In spite of the market being in common, each country has national laws and regulations that regulate the electricity certificate system in that country. The agreement between Norway and Sweden on a common electricity certificate market is available in its entirety on the websites of the relevant authorities.

www.regeringen.se

www.regjeringen.no

If the market participant with quota obligations is a power supplier, the costs of electricity certificates are included in the electricity customers' invoices.

The relevant laws and regulations that apply to the electricity certificate system in Norway are as follows:

- Act no. 39 of 24/06/2011: Act regarding electricity certificates.
- REG no. 1398 of 16/12/2011: Regulation on electricity certificates.

The relevant laws and regulations that apply to the electricity certificate system in Sweden are as follows:

- Act (2011:1200) regarding electricity certificates
- Regulation (2011:1480) regarding electricity certificates
- The Swedish Energy Agency's regulation STEMFS (2011:4) regarding electricity certificates

6) Costs stated for Swedish household customers exclude transaction costs that may be added. Costs for Norwegian household customers include transaction costs and are based on data reported by power suppliers in Norway

WHO DOES WHAT?

The Swedish Energy Agency and NVE

- Administer the electricity certificate systems in each country.
- Process applications for electricity certificates.
- Register/deregister market participants with quota obligations.
- Supervise each country's regulations regarding electricity certificates.
- Provide ongoing information about developments in the electricity certificate market.
- Handle penalties and quota obligation fees.

The Norwegian Water Resources and Energy Directorate (NVE) and the Swedish Energy Agency report market statistics, such as the number of approved production plants and registered market participants with quota obligations, on their websites. These also carry information on which power producers electricity certificates can be bought from, as well as other information about the electricity certificate market. This publication can be found in electronic format on the websites.

www.nve.no/elsertifikater

www.energimyndigheten.se/elsertifikat

Svenska kraftnät and Statnett

- Responsible for registrations in the Swedish and Norwegian electricity certificate registers (Cesar/NECS) respectively.
- Issue electricity certificates on the 15th of each month.
- Cancel electricity certificates after the decisions of NVE or the Swedish Energy Agency.
- Publish ongoing information about the number of issued and cancelled electricity certificates and the average certificate price.

Statnett and Svenska Kraftnät have up to date information on their websites. Among other things, they have information about the numbers of certificates issued, sold and cancelled, and also the average certificate price.

necs.statnett.no certifikat.svk.se

SWEDISH ENERGY MARKETS INSPECTORATE

In Sweden, the Swedish Energy Markets Inspectorate is the supervisory authority for the electricity, natural gas and district heating energy markets. The Swedish Energy Markets Inspectorate checks that energy companies follow the regulations and works to ensure that energy markets function well. The

FACTS 7: Differences between the two countries

There are certain differences in legislation between the two countries, even though the underlying principles are the same. Some important differences are presented below:

- In Sweden, peat gives entitlement to electricity certificates.
- The proportion of biofuel in mixed waste gives entitlement to electricity certificates in Norway.
- Plants in Sweden that come into operation after 2020 receive electricity certificates.
- In Sweden it is possible to receive electricity certificates for the entire production after comprehensive rebuilding.
- In Norway, only the production increase receives electricity certificates.
- Certain minor differences in the exemption rules for power-intensive industries.

Swedish Energy Markets Inspectorate has information about power suppliers' electricity prices on its website, including the price of electricity certificates, so that electricity customers can compare prices on the market. The website also has analyses and information about monitoring of the power market.

www.energimarknadsinspektionen.se

THE COUNCIL

The Council for the electricity certificate market was established in accordance with article 11 of the agreement on a common electricity certificate market of 29 June 2011 between Norway and Sweden. The Council consists of representatives of the Norwegian Ministry of Petroleum and Energy and the Swedish Ministry of Enterprise, Energy and Communications. The Council's tasks include facilitation for planning and implementation of the progress reviews. This includes, for example, initiating investigations, continuous monitoring of trends in the market, analysis of possible need for developing regulations and developing a common communication strategy for measures of significance for those involved. The Council has no decision-making authority on national issues, in terms of amending national legislation.

THE COMMITTEE

The Committee for the electricity certificate system was set up in accordance with Article 12 of the Agreement on a Common Market for Electricity Certificates dated 29 June 2011 between Sweden and Norway. The Committee consists of representatives from the Swedish Energy Agency and NVE. The Committee shall keep itself informed and discuss the design and implementation of the regulatory framework for allocating electricity certi-

ficates. This applies, for example, the allocation for production increases within existing plants and new allocations following major reconstruction. The Council sets the Committee's work procedures. The representatives on the Committee shall provide the background information necessary for the Committee to carry out its tasks.



Goal fulfilment

Since 2012, the Norwegian-Swedish electricity certificate system has contributed 6.2 TWh of new renewable production capacity (normal annual production). During 2013, 2.5 TWh was built in Sweden and 0.5 TWh in Norway. Production from these plants is included in the common target of 26.4 TWh of new renewable power production by the end of 2020.

Swedish wind power continues to dominate the development that is included in the common target. In 2013, Swedish wind power accounted for about 63 per cent (3.9 TWh) of the new normal annual production. The wind power stations that came into operation in Sweden up to and including 2013 were mainly built in elspot areas SE2 and SE4 (see Table 4.1 in the table section).

It was primarily new hydropower plants that contributed to the increase in production capacity in Norway. Most of the new power production in Norway is evenly distributed between the five elspot areas (see Figure 3 and Table 4).

In 2013, wind power stations with a normal annual production of 0.35 TWh came into production in Norway.

Half of the power production from these power stations is not included in the electricity certificate system, because the owners chose to keep investment support from ENOVA rather than participate in the electricity certificate system⁷

In order to achieve the target of 26.4 TWh by the end of 2020, an average of 2.93 TWh of renewable power production must come into operation each year. There is no fixed target for each individual year. However, the relationship between actual

FACTS 8: Expected mean annual production in relation to actual production

Normal annual production is an estimate of a plant's annual production under normal operating conditions. This will differ from the actual production each year. In this section, normal annual production is used because it gives a picture of the plants' anticipated annual production. It is the actual production that decides how many electricity certificates a plant receives.

The issue of electricity certificates is partly dependent on weather conditions and the time of year the plant was approved into the system. The target of 26.4 TWh will be compared with the actual production in 2020. In 2013, the plants that are included in the common target were issued with electricity certificates corresponding to approximately 0.4 TWh in Norway and approximately 4.1 TWh in Sweden.

7) ENOVA is a state-owned Norwegian organisation that was established by the Storting in 2001 to promote conversion to sustainable energy utilisation and energy production and to contribute to the development of new energy and climate technology.

development and the average figure gives an indication of how much new production must come about by 2020 (see Figure 2). It is the market participants

that make investment decisions and build plants and that determine how much renewable power production is developed each year.

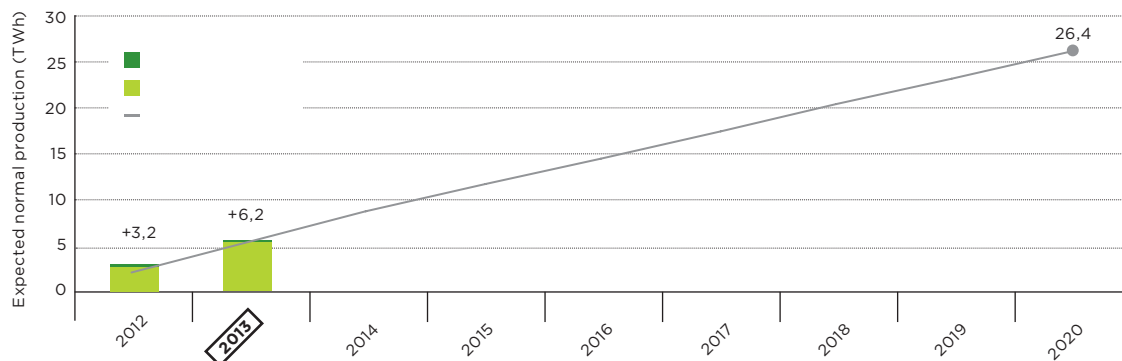


Figure 3. Normal annual production for plants included in the 26,4 TWh target

Source: Swedish Energy Agency, NVE

FACTS 9: Plants that are not included in the common target

Plants that are entitled to receive electricity certificates but that came into operation before 2012 are not included in the common target of 26.4 TWh by 2020. Electricity certificates that are issued to these plants must be financed by the country in question. In 2013, these plants had a production with electricity certificate entitlement of 0.47 TWh in Norway and 11.30 TWh in Sweden.

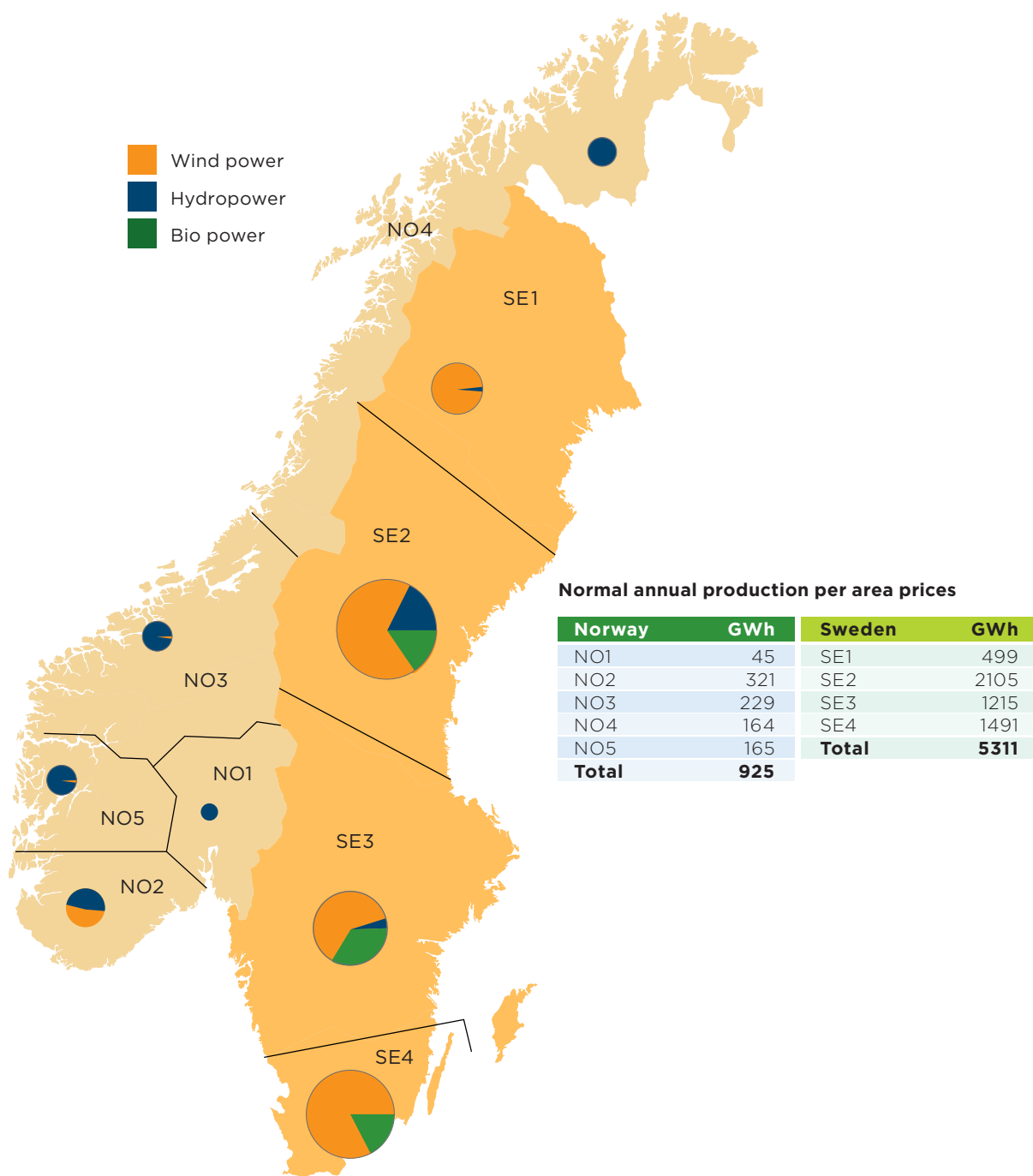


Figure 3. Normal annual production for power plants that are included in the 26.4 TWh target, by elspot area

Source: Swedish Energy Agency, NVE



Issuing of electricity certificates

In 2013, power producers in Sweden and Norway were issued with a total of 16.3 million electricity certificates. In Norway, hydropower still dominates, while in Sweden wind power accounts for most of the certificate issue.

In total, power producers in the two countries were issued with 16.3 million electricity certificates in 2013. The distribution between Sweden and Norway was 15.4 and 0.9 million certificates respectively. Figure 4 and the table on the next page show certificates issued in each country and the distribution between different energy sources.

DISTRIBUTION OF ELECTRICITY CERTIFICATES ISSUED

That the number of electricity certificates in Sweden is increasing is mainly due to the development of wind power. In 2013, 9.7 million electricity certificates were issued to wind power producers there. The proportion of bio and hydropower in Sweden has been more than halved since 2012. This

is due to many older Swedish power plants being phased out of the electricity certificate system at the end of 2012. Swedish wind and bio power plants that were in operation during the whole of 2013 produced on average 98% and 87% per cent respectively of their normal annual production.

The number of electricity certificates issued in Norway, compared with Sweden, was low due to there being few approved power plants. Also, there are mainly small plants with a low combined installed output. Of the electricity certificates that were issued in Norway in 2013, hydropower was dominant. Norwegian hydropower plants that were in operation throughout 2013 produced on average 80% of their normal annual production.

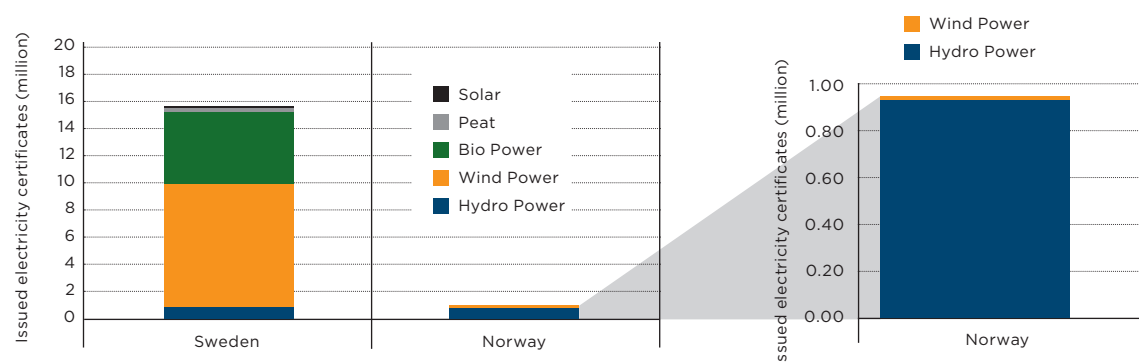


Figure 4. Electricity certificates issued in Sweden and Norway during 2013

Source: Cesar, NECS

Key figures c

Electricity certificates issued in 2013	Sweden [million certificates]	Norway [million certificates]
Wind	9,69	0,04
Hydro	0,84	0,88
Bio Fuel	4,81	-
Solar	0,004	-
Peat	0,11	-
Total	15,4	0,92

PHASING OUT OF APPROVED POWER PLANTS

Swedish plants that were in operation before 1 May 2003 and have received state support for investment or rebuilding are entitled to receive electricity certificates until the end of 2014. About 280 Swedish power plants will be phased out of the electricity certificate system at the end of 2014. These power plants have a combined annual production of approximately 1.5 TWh and consist mainly of wind and bio power plants.

Tables 7 and 8 (see table section) show installed output and normal annual production for all approved plants, by when the certificate issue period expires. It is important to remember that the amount of production that will be phased out at various times may change because of varying operating conditions. Factors that can affect the calculation are changes in the proportion of fuel with certificate entitlement and external conditions, such as temperature and wind.

FACTS 10: Power producers receive one electricity certificate for each MWh that is produced from renewable energy sources.

1 MWh = 1 electricity certificate 1 TWh = 1 million electricity certificates



Cancellation of electricity certificates

In 2013, 16.2 million electricity certificates were cancelled. Of these, 12.3 million were cancelled in Sweden and 3.9 million in Norway.

The quota curves are devised on the basis of how much renewable energy production is to be financed and how great the calculation-relevant electricity consumption is estimated to be in each country. The relationship between these figures gives a proportion that represents the quota each year. Since the quota is fixed by law, while the calculation-relevant electricity consumption varies with temperature and economic cycles, the number of cancelled electricity certificates will not always correspond with the cancellation that is necessary to achieve the target. In years when electricity consumption is higher or lower than anticipated in the quota curves, too many or too few certificates respectively will be cancelled.

In 2013, the calculation-relevant electricity consumption in Norway was higher than expected in the quota curve. More certificates were therefore cancelled than had been calculated. Because the electricity certificate quota in Norway was low (4.9 per cent), this represented a relatively low number of certificates (see figure 5).

In Sweden, the calculation-relevant electricity consumption in 2013 was lower than expected in the quota curve. Fewer certificates were therefore cancelled than had been calculated. The percentage deviation in Sweden and Norway was approximately the same, but because of the higher electricity certificate quota in Sweden (13.5 per cent), this

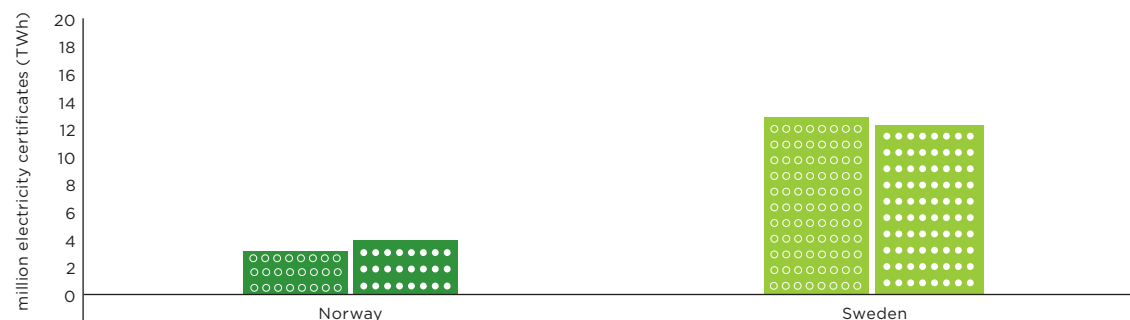


Figure 5. Number of cancelled electricity certificates in relation to the number assumed in the quota curve

Source: Cesar, NECS, Swedish Energy Agency and NVE

Assumed in quota curve
Actual cancellation

Key figures d

Cancellation for 2013	Sweden	Norway
Cancellation (million certificates)	12.3	3.9
Quota obligation fulfilment (per cent)	99.97	99.95
Quota obligation fee	SEK 301 each	NOK 277.52 each

Key figures e

Cancellation for 2013	Sweden		Norway	
	Assumed in quota curve	Actual usage and cancellation	Assumed in quota curve	Actual usage and cancellation
Usage (TWh)	96,6	91,1	74,5	80
Quota obligation [%]	13,5		4,9	
Cancelled [TWh]	13	12,3	3,7	3,9

activity represented a greater number of certificates. In order to ensure that Sweden and Norway finance an equal amount of new power production, the quota curves must be adjusted as part of the ongoing collaboration on the electricity certificate market. In the basis for the progress review, NVE and the Swedish Energy Agency have recommended changes to the electricity certificate quotas with a view to meeting the obligations in the treaty on electricity certificates (see separate section regarding the progress review).

For 2013, 32 participants (13 in Norway and 19 in Sweden) must pay a fee of NOK 277.52 per certificate by which they failed to fulfil the quota obligation. In total the shortfall of certificates for cancellation was 5,840 certificates (3,594 in Sweden and 2,246 in Norway). The fee amounts to 150 per cent of the volume-weighted average price in the year of calculation in transactions in the account systems (Cesar and NECS).

FULFILMENT OF QUOTA OBLIGATION

The cancellations for 2013 show that most market participants with quota obligations cancel a sufficient number of certificates. In 2013, the joint cancellation percentage was 99.96 per cent. Market participants with quota obligations who do not cancel electricity certificates are charged a quota obligation fee.

Surplus

The surplus of electricity certificates at the end of 2013, minus the certificates that were cancelled in April 2014, was 12 million. This is a marginal increase of 0.1 million certificates over the year before and corresponds to an increase of 1 per cent. Higher calculation-relevant electricity consumption in Norway and quota adjustments in Sweden are factors that affected the surplus.

Electricity certificates that have been issued but not cancelled represent the electricity certificate surplus. There must be a sufficient number of electricity certificates to balance the market. The surplus increases in years when electricity certificate production is higher than demand.

Demand is statutory through the quota curves in Norway and Sweden. An explanation of the difference between supply and demand for electricity certificates in some years may be that new production is phased in earlier than assumed or that fewer

certificates than expected are cancelled. The latter occurs if the calculation-relevant electricity consumption is lower than assumed in the quota curve or if market participants with quota obligations fail to cancel certificates. The participants must then pay a quota obligation fee.

At the start of the common electricity certificate market in 2012, the surplus was 8.8 million electricity certificates. This surplus was built up in the Swedish electricity certificate market from 2003 and is now included in the common market.

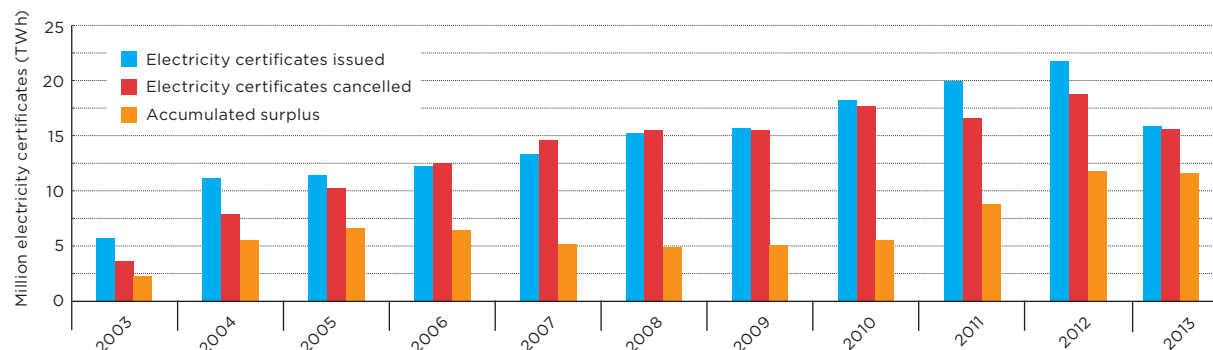


Figure 6. Issued electricity certificates, cancelled electricity certificates and the accumulated surplus for 2003–2013.

Source: Svenska Kraftnät's and Statnett's account systems (respectively Cesar and NECS)

In 2013, the surplus increased by 0.1 million electricity certificates. This gives a surplus after cancellation for 2013 of 12 million electricity certificates (see Figure 6). Even though the calculation-relevant electricity consumption in Sweden was lower than forecast in the quota curve and the issue of certificates to power plants in the Swedish transition system was higher than the basis taken for the quota curve (see section on the progress review), the surplus increased only marginally in 2013. This was due to higher cancellation in Norway than was taken as the basis for the quota curve and also that all power plants that are approved within the target were in operation throughout 2013. This contributed to a lower issue than anticipated, which affected the surplus of certificates.

Looking at the surplus in relation to the number of electricity certificates to be cancelled can give an indication of pressure in the electricity certificate market. A low surplus in relation to the number of

electricity certificates to be cancelled can contribute to increased pressure in the electricity certificate market, since competition to buy increases.

Conversely, a large surplus in relation to the number of certificates to be cancelled contributes to negative price pressure.

DISTRIBUTION OF THE SURPLUS

After cancellation of electricity certificates on 1 April 2014, there were 15.2 million certificates left in various accounts in NECS and Cesar. These include certificates that were issued for production in January and February 2014.

After cancellation on 1 April 2014, the certificates remaining in the accounts in Norway and Sweden had a combined market value of NOK 2.5 billion. Figure 7 shows how these electricity certificates were distributed in the various participants' accounts in Norway and Sweden.

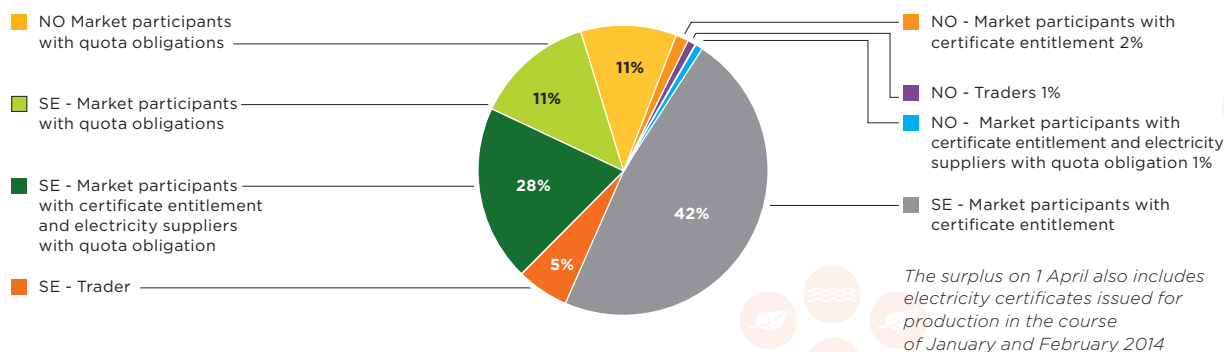
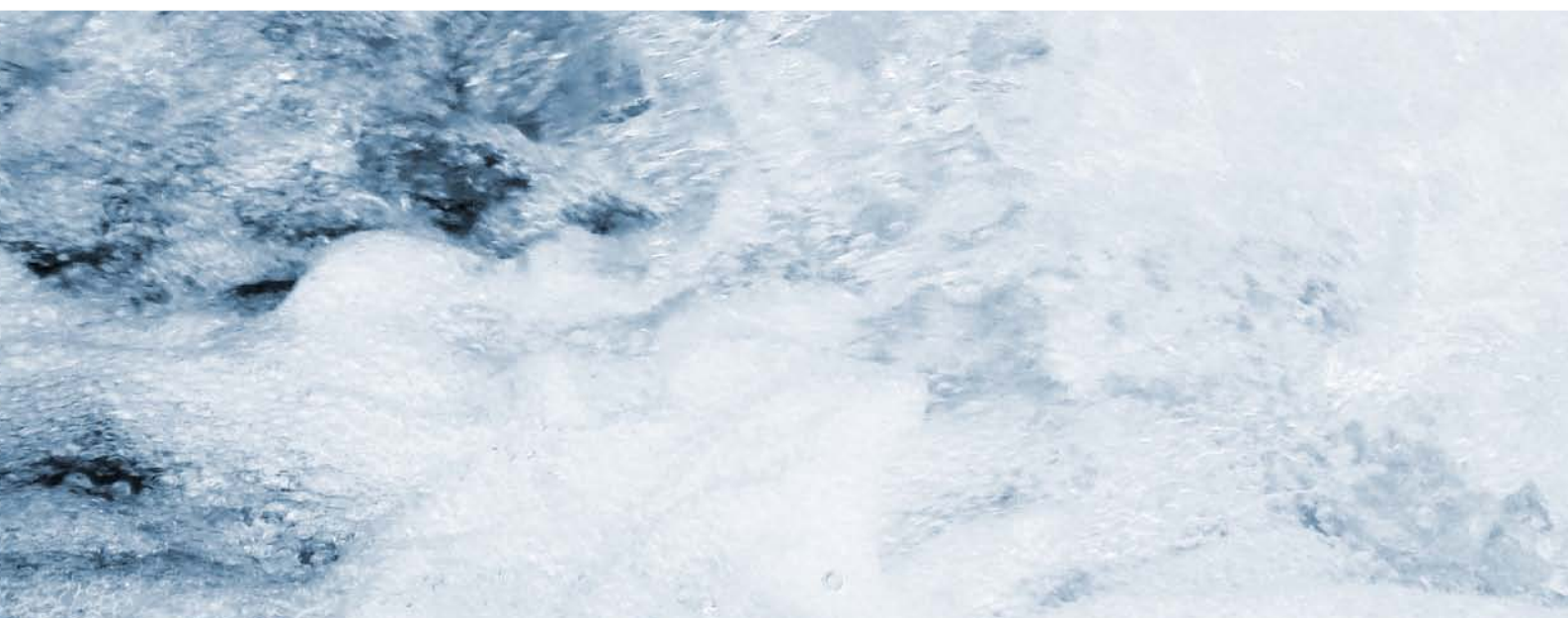
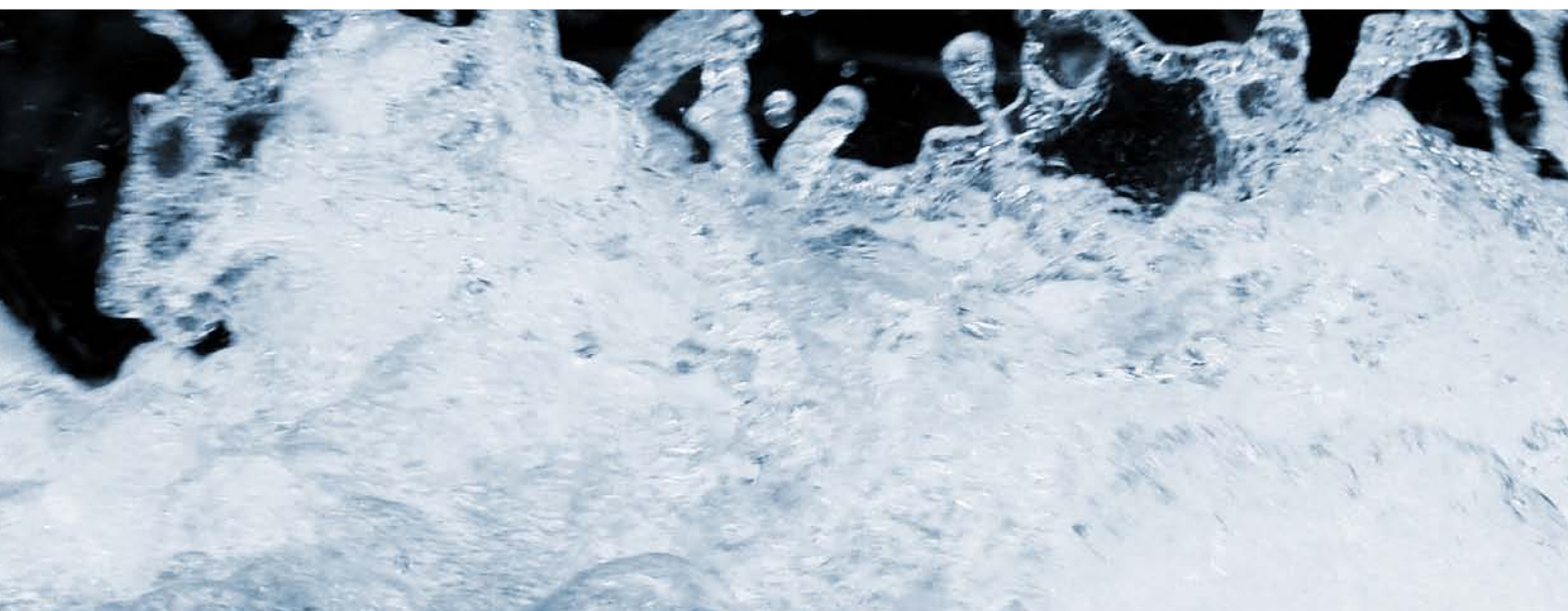


Figure 7. Distribution of electricity certificates between participants in Norway and Sweden

Source: Svenska Kraftnät's and Statnett's account systems (respectively Cesar and NECS)



Price and trading

The average market price traded in the spot market for electricity certificates was NOK 178 per MWh in 2013. This corresponds to a price rise of 23 per cent from 2012. In spite of the average price increase in the spot price for electricity certificates from 2012 to 2013, the spot price for electricity certificates fell by 14 per cent during the course of 2013.

2013 began with high certificate prices. The highest level was reached in March (in SEK the highest price was reached in February) when the average spot price for the month was NOK 205 per MWh (SEK 235 per MWh) at the three largest brokers of electricity certificates. The price stayed below NOK 200 per MWh in the other eleven months.

TRADING ON THE ELECTRICITY CERTIFICATE MARKET

Trading in electricity certificates mainly occurs between market participants with quota obligations and market participants with certificate entitlement. There are also traders with accounts in the electricity certificate registers NECS and Cesar. The intention of these traders is to buy electricity certificates and

sell them later at a profit. They can thereby help to even out prices on the electricity certificate market over the course of time.

According to NECS and Cesar, approximately 47.7 million electricity certificates (corresponding to 47.7 TWh) were sold during the period 1 April 2013 to 31 March 2014. This includes spot trading during the year, forward contracts with physical transfer of certificates during the period and transactions within the same group of companies. Data from the three largest brokers in the electricity certificate market shows that approximately 29 TWh was sold through brokers during the period from 1 April 2013 to 31 March 2014. This corresponds to an increase of 4 TWh from the previous year.

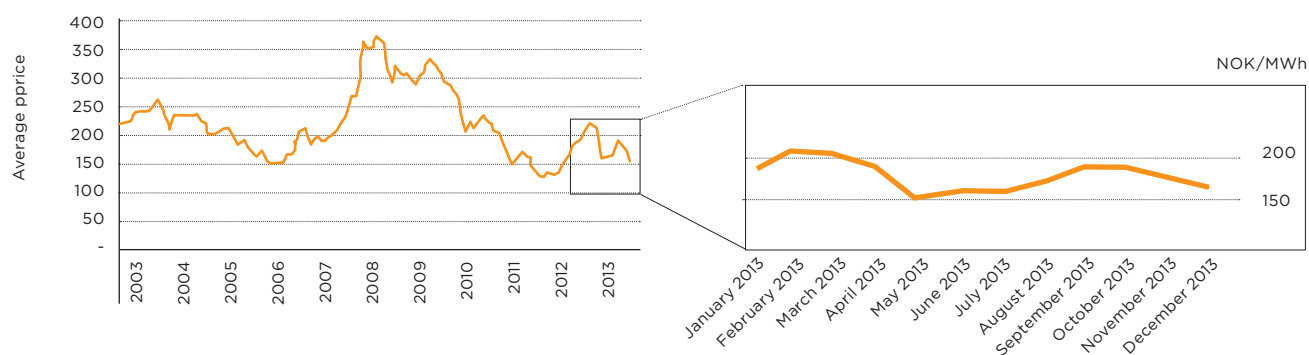


Figure 8. Electricity certificate prices 2003-2013

Source: CleanWorld, ICAP and Svensk Kraftmäkling

Figure 9 shows the distribution of trading volume for the various contracts that were sold through brokers.

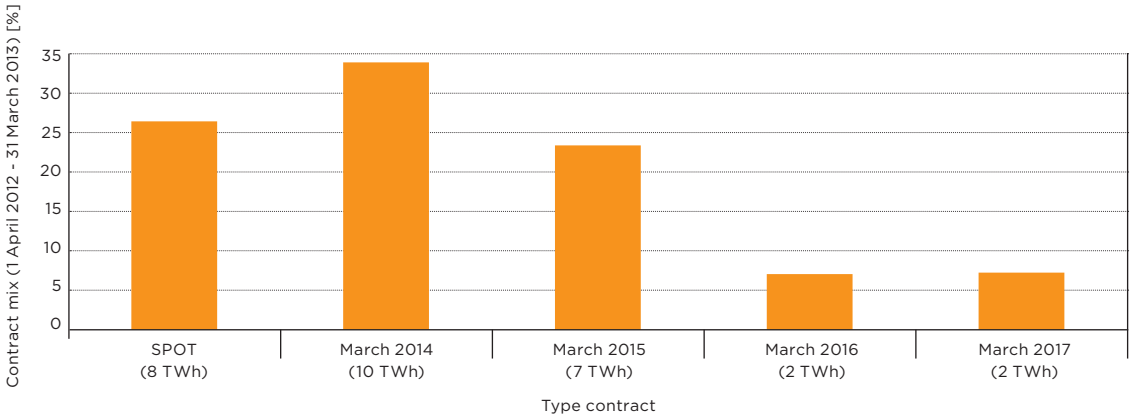


Figure 9. Trading in electricity certificates via brokers by type of contract during the period 1 April 2013 to 31 March 2014

Source: CleanWorld, ICAP and Svensk Kraftmäklings

FACTS 11: Standard contract – delivery and payment

Electricity certificates are traded both bilaterally and via brokers. There are two types of broker contracts on the electricity certificate market, spot price contracts and March contracts. These contracts are available for the next five years.

Spot contract	Price	Determined on date of agreement
	Delivery	Within five working days after agreement
	Payment	Within ten working days after agreement
March contract	Price	Determined on date of agreement
	Delivery	18 March each year
	Payment	Within five working days after delivery

REGISTER PRICES

The volume-weighted average price of transactions in NECS and Cesar from 1 April 2013 to 31 March 2014 was NOK 185 per MWh. This represents an increase of NOK 6.5 per MWh from the previous period. The average price that is presented in the certificate registers NECS and Cesar is the volume-weighted average price of transactions in the register during the course of the period in question. Thus the price reflects all transfers between two juridical

entities during the period. The register price states a value of electricity certificates sold over a historical period, weighted according to traded volume in the same period. The register price also includes transfers that were agreed in earlier years. The market price gives an indication of the value of an electricity certificate at a given time. The register price cannot therefore be regarded as a market price for electricity certificates.

Progress review

In February 2013, NVE and the Swedish Energy Agency were charged by their respective ministries with preparing the basis for the progress review. The results were published in two reports on 11 February 2014. The reports will form the basis of further work on the so-called progress review for the electricity certificate system.

In accordance with the agreement for a common Norwegian-Swedish electricity certificate market, progress reviews must be performed at regular intervals. Joint investigations are performed in a progress review in order to evaluate the need for changes in the regulations and adjustments to the quota curve in order to achieve the target.

The national reports and the input that has been received after the reports were sent for consultation will form the basis of further work on the progress review. Any changes in the relevant national legislation and regulations will come into force on 1 January 2016.

THE MINISTRY OF ENTERPRISE, ENERGY AND COMMUNICATIONS' ASSIGNMENT TO THE SWEDISH ENERGY AGENCY IN BRIEF

In the assignment to prepare a basis for the progress review, the Swedish Energy Agency was asked to look at the following topics:

1. Analyse and propose any changes to the

quota curve that may be necessary for Sweden to be able to fulfil its obligations under the agreement for a common electricity certificate market with Norway.

2. Identify and assess risks that might lead to the pace of development not being as anticipated up until 2020.

3. Investigate the role of peat in the electricity certificate system and analyse the consequences of any phasing out of peat.

4. Analyse the historical development of the electricity certificate market, including with regard to electricity certificate prices, holdings and the phasing out of power stations with entitlement to electricity certificates.

5. Analyse the way in which the market functions, including with regard to sales turnover, liquidity, number of market participants and market equilibrium. On the basis of the analysis, the Swedish Energy Agency is to propose any measures

FACTS 12: The responses to the assignments from the ministries may be found in:

"Kontrollstation för elcertifikatsystemet 2015 (ER 2014:04)" and "Kontrollstasjonsrapport: NVEs gjennomgang av elsertifikatordningen NVE-rapport 05/2014".

that might improve the way in which the market functions.

THE MINISTRY OF PETROLEUM AND ENERGY'S ASSIGNMENT TO NVE IN BRIEF

In the assignment to prepare a basis for the progress review, NVE was asked to look at the following topics:

1. Analyse the need for an adjustment in the annual electricity certificate quotas so as to fulfil Norway's obligations in the agreement with Sweden.
2. Consider whether there is sufficient access to projects in renewable electricity production in

Norway and Sweden to achieve the target of 26.4 TWh of new renewable power. NVE is also to consider the risk that the pace of development is not developing sufficiently to achieve the target.

3. Consider the present design of the quota curve and discuss the advantages and disadvantages of replacing the statutory electricity certificate quotas with a collective quota obligation in accordance with the agreement.

4. Assess the present structure of quota obligation fees against possible alternative fee structures.

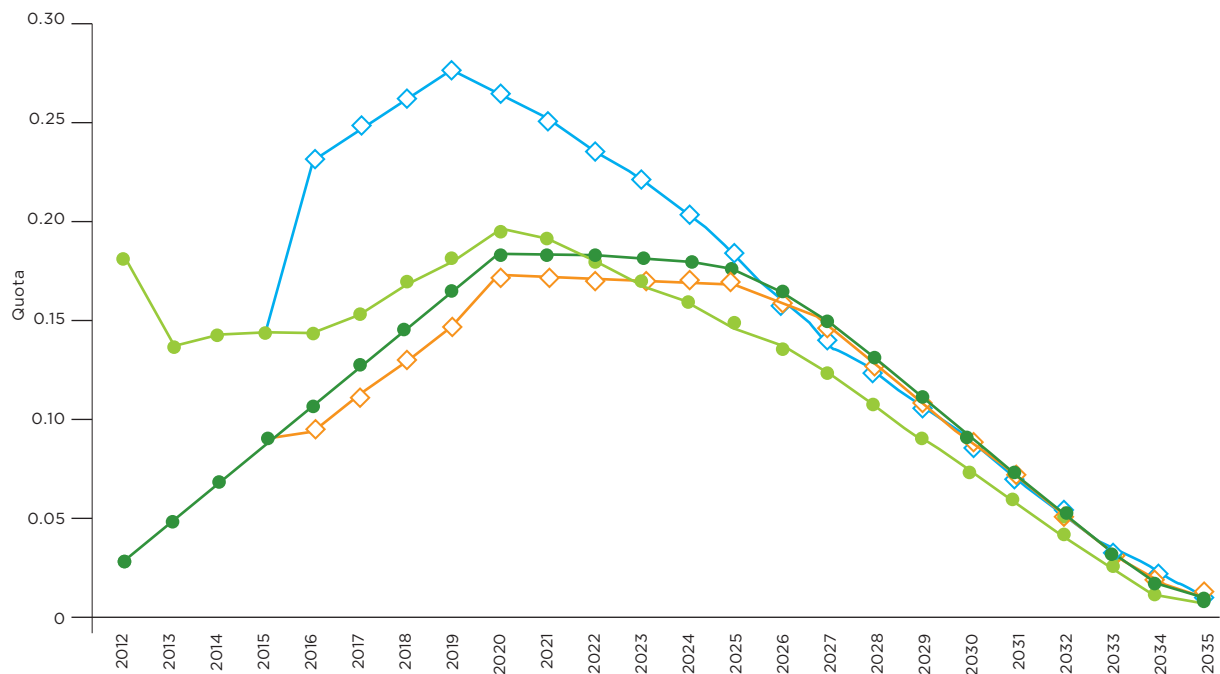


Figure 10. Proposal for new quota curves

- Sweden - electricity certificate quotas in the Act regarding electricity certificates
- Norway - electricity certificate quotas in the Act regarding electricity certificates
- The Swedish Energy Agency's proposal for electricity certificate quotas for Sweden
- NVE's proposal for electricity certificate quotas for Norway

Source: Swedish Energy Agency, NVE 2014

SUMMARY OF THE RECOMMENDATIONS

Presented below is a summary of the recommendations from NVE and the Swedish Energy Agency. The background to the recommendations is described more fully in the respective national reports.

ADJUSTMENT OF THE QUOTA CURVE

New estimates of calculation-relevant electricity consumption and production from the transition system indicate that the present electricity certificate quotas are not designed to meet the obligations in the agreement on electricity certificates between Norway and Sweden. The Swedish Energy Agency and NVE therefore propose adjustment to both countries' quota curves. This means an estimated increase in demand of 61 TWh. 28 TWh of this is to be cancelled during the period 2016 to 2019 and the remainder during the period 2020 to 2035.

In Norway, the electricity certificate quotas would be adjusted downward, giving an estimated reduction in demand for electricity certificates of approximately 14 TWh during the period 2016 to 2035. In Sweden, the electricity certificate quotas would be adjusted upward by 75 TWh in the same period. The objectives for the common Norwegian-Swedish electricity certificate market are unchanged.

NVE and the Swedish Energy Agency have taken the same principles as a basis for the technical adjustment of quota curves during work on the progress review and recommend that these principles are also used for future progress reviews.

ACCESS TO PROJECTS AND RISK FACTORS

In the opinion of NVE and the Swedish Energy Agency, there is good availability of investable

projects in both Norway and Sweden. This will therefore facilitate the achievement of the target of 26.4 TWh of new renewable power. In the national report, an assessment is made of access to investable projects in both countries. The methods used to perform this analysis in Norway and Sweden are different. However many factors could affect the extent to which Norway and Sweden attain the target. The most important risk factors have been identified in the national reports.

QUOTA OBLIGATION FEE

NVE and the Swedish Energy Agency recommend that the present formulation for the quota obligation fee should be kept. It is currently 150 per cent of the volume-weighted average price of electricity certificates in Norway and Sweden. Sweden has had this fee structure since 2005.

STATUTORY OBLIGATION OR CONTINUED STATUTORY ELECTRICITY CERTIFICATE QUOTAS

In its national report, NVE analysed the present formulation of the quota curve.

NVE recommends that the TWh obligation in accordance with the agreement between Norway and Sweden is established in the electricity certificate legislation and that rules should be established in legislation or regulations for how this volume should be converted into shares. This would give better predictability for the market participants.

To allow the number of electricity certificates to be cancelled by each market participant with a quota obligation to be calculated, the TWh obligations must be converted into shares.

NVE recommends that the share is calculated in

advance and that it is fixed for a period of four years at a time. The share would be published before the first year of the period. This would simplify the system for the market participants with quota obligations. Deviations that arise would be adjusted during the following four-year period according to rules determined in the electricity certificate legislation.

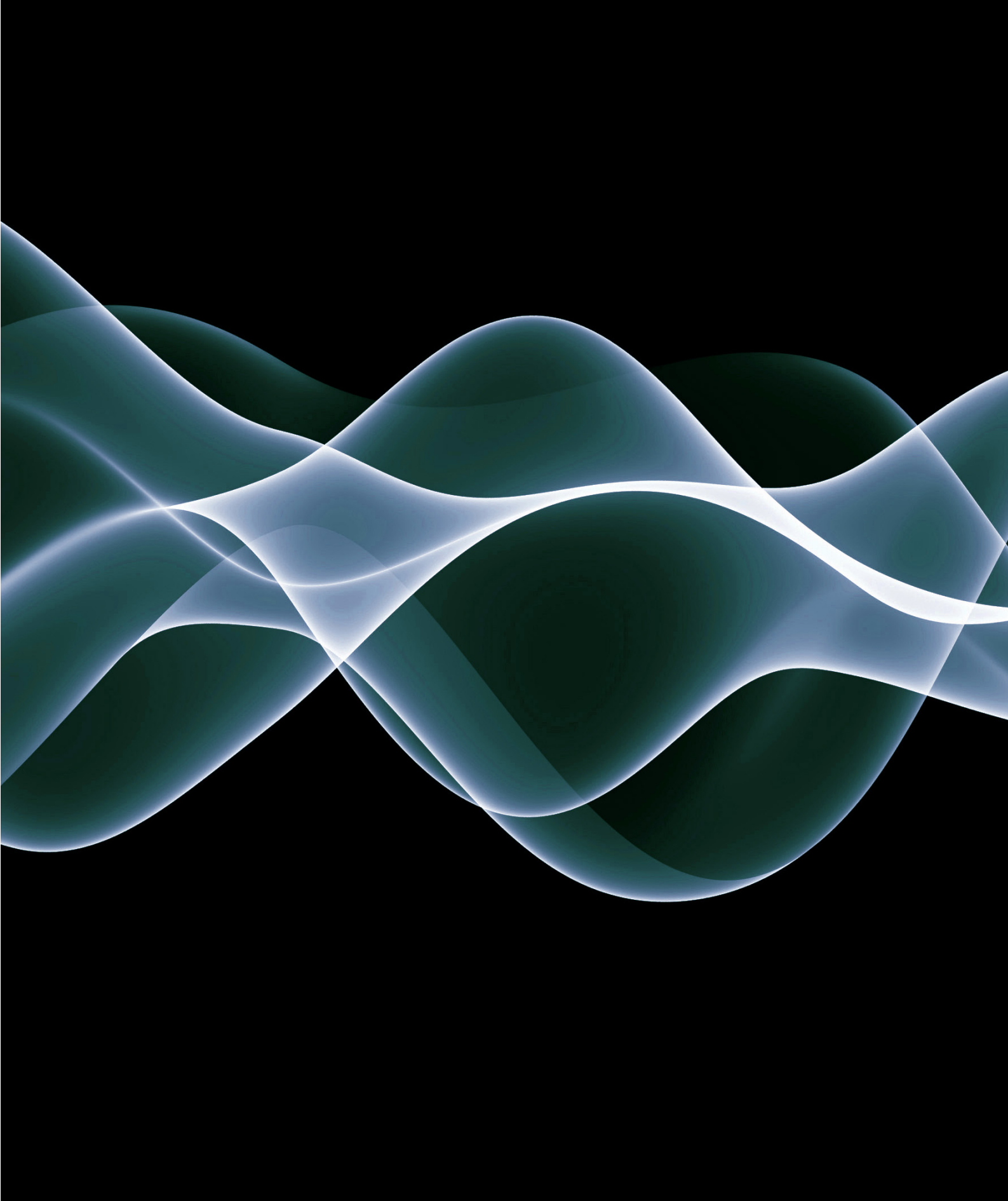
MARKET IMPROVEMENT MEASURES

In its report, the Swedish Energy Agency looked at the way in which the market functions and puts forward the following recommendations:

- The Swedish Energy Agency proposes that an annual analysis should be made of the relationship between the current electricity certificate quotas and the factors on which the electricity certificate quotas are based. The Swedish Energy Agency proposes that this analysis is presented at annual seminars.
- Developments over the next few years should be carefully followed so as to consider whether the next progress review should be held earlier than planned.
- The Swedish Energy Agency points out that there is a need for a database of power production with entitlement to electricity certificates, with information about projects with licences to build, investment decisions and plants under construction. Whether companies should be under a statutory obligation to report such information should be investigated.
- The Swedish Energy Agency recommends that a requirement should be introduced for Swedish electricity suppliers to report invoiced electricity consumption every quarter.

THE ROLE OF PEAT IN THE ELECTRICITY CERTIFICATE SYSTEM

In its national report, the Swedish Energy Agency describes the role of peat in the electricity certificate system. Peat represents only a small proportion of electricity production with entitlement to electricity certificates and the proportion is falling. Peat means little to the electricity certificate system, but the electricity certificate system has a certain, but limited, significance for the peat sector. If circumstances remain unchanged, the Swedish Energy Agency recommends that peat-based electricity production with entitlement to electricity certificates should continue to have such entitlement.



Tables

Table 1 Quotas for Sweden and Norway

Year	Quota Sweden	Quota Norway
2003	0.074	
2004	0.081	
2005	0.104	
2006	0.126	
2007	0.151	
2008	0.163	
2009	0.170	
2010	0.179	
2011	0.179	
2012	0.179	0.030
2013	0.135	0.049
2014	0.142	0.069
2015	0.143	0.088
2016	0.144	0.108
2017	0.152	0.127
2018	0.168	0.146
2019	0.181	0.165
2020	0.195	0.183
2021	0.190	0.182
2022	0.180	0.181
2023	0.170	0.180
2024	0.161	0.179
2025	0.149	0.176
2026	0.137	0.164
2027	0.124	0.151
2028	0.107	0.132
2029	0.092	0.113
2030	0.076	0.094
2031	0.061	0.075
2032	0.045	0.056
2033	0.028	0.037
2034	0.012	0.018
2035	0.008	0.009

Source: Act (2011:1200) regarding electricity certificates,
Act 24/06/2011 no. 39: Act regarding electricity certificates.

Table 2.1. Electricity customers' calculated costs for electricity certificates in Sweden (per kWh) during the course of the years 2003-2013

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Volume-weighted average annual price of electricity certificates (Cesar, NECS)	201	231	216	167	195	247	293	295	247	201	201
Quota Sweden	0.074	0.081	0.104	0.126	0.151	0.163	0.17	0.179	0.179	0.179	0.135
Electricity customers' average costs for electricity certificates in Sweden (øre/ kWh) ¹ *	1.5	1.9	2.3	2.1	3.0	4.0	5.0	5.3	4.4	3.6	2.7

¹) VAT and transaction costs may accrue

Source: Svenska Kraftnät's account system (Cesar), Swedish Energy Agency

Table 2.2. Electricity customers' calculated costs for electricity certificates in Norway (per kWh) in 2012-2013

	2012	2013
Electricity customers' average costs for electricity certificates in Norway (øre/ kWh) ¹	0.6	1.2

¹) Costs for Norwegian household customers are based on data reported by power suppliers in Norway. Source: NVE

Table 3: Normal annual production for plants within the 26.4 TWh target in 2013

Energikilde	Norway [TWh]	Sweden [TWh]
Bio Fuel	-	1.00
Solar	-	0.01
Hydro	0.739	0.43
Wind	0.185	3.90
Total	0.9	5.3

Source: Energimyndigheten, NVE

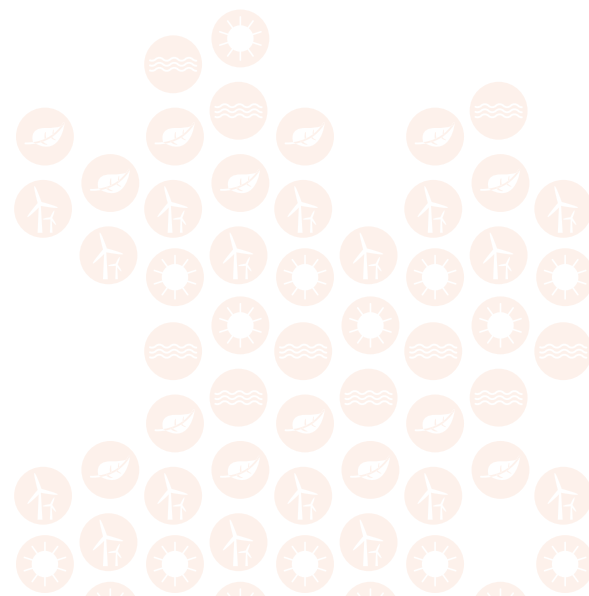


Table 4.1 Normal annual production for plants in Sweden within the 26.4 TWh target, by elspot area¹

Normal annual production [GWh]	SE1	SE2	SE3	SE4
Biofuel, peat	2	310	410	279
Solar	-	-	5	2
Hydro	7	360	50	10
Wind	490	1438	755	1216
Total	499	2108	1220	1507

Source: Energimyndigheten.

Table 4.2 Normal annual production for plants in Norway within the 26.4 TWh target, by elspot area¹

Normal annual production [GWh]	NO1	NO2	NO3	NO4	NO5
Biofuel, peat	-	-	-	-	-
Solar	-	-	-	-	-
Hydro	45	151	218	164	161
Wind	-	169	11	-	5
Total	45	321	229	164	165

Source: Energimyndigheten.

Table 5 Electricity certificates issued in Sweden and Norway 2013

Energy source	Sweden [million]	Norway [million]
Hydro	0.84	0.882
Wind	9.68	0.04
Biofuel	4.8	-
Peat	0.105	-
Solar	0.004	-
Total	15.4	0.92

Source: Svenska Kraftnåts og Statnetts kontoføringssystem (hvv. Cesar og NECS)

1) Rounded figures

Table 6.1 Number of plants and power production by energy source in 2012 and 2013 that are included in the target of 26.4 TWh

Number of plants	Sweden		Norway	
	2012	2013	2012	2013
Biofuel, peat	13	25	-	-
Solar	62	379	-	-
Hydro	9	64	29	73
Wind	218	492 ¹	2	3
Total	302	960	31	76

Power production - renewable and peat [GWh] ²	Sweden		Norway	
	2012	2013	2012	2013
Biofuel, peat	174 (773)	731 (1001)	- (-)	- (-)
Solar	0.4 (1)	2 (7)	- (-)	- (-)
Hydro	2 (11)	78 (427)	263 (343)	404 (740)
Wind	566 (2061)	3244 (3899)	8 (16)	39 (186)
Total	743 (2846)	4055 (5334)	271 (358)	443 (926)

Table 6.2 Number of plants and power production by energy source in 2012 and 2013 that are included in the transition system

Number of plants	Sweden	Norway
Biofuel, peat	113	-
Solar	82	-
Hydro	206	182
Wind	1470 ₁	-
Total	1871	182

Power production - renewable and peat (GWh)	Sweden	Norway
Biofuel, peat	4155 (4417)	- -
Solar	1 (1)	- (-)
Hydro	759 (922)	478 (632)
Wind	6437 (6795)	- (-)
Total	11353 (12135)₂	478 (632)

1) 492 wind power plants consist of 640 wind power stations.

2) Actual power production is based on electricity certificates issued and normal annual production is give in brackets.

Source: Svenska Kraftnät's account system (Cecar), Swedish Energy Agency.

Table 7.1 Norway - Phasing out of plants (power production)³ 2014-2028

GWh	2014	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Bio	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar	-	-	-	-	-	-	-	-	-	-	-	-	--
Hydro	-	-	-	8	29	52	26	42	55	193	531	436	1371
Wind	-	-	-	-	-	-	-	-	-	-	16	169	185
Total	-	-	-	8	29	52	26	42	55	193	547	605	1557

Table 7.2 Sweden - Phasing out of plants (power production)⁴ 2014-2028

GWh	2014	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Bio	953	7	38	125	524	654	125	1417	321	246	779	228	5418
Solar	0	0	0	0	0	0	0	0	0	0	1	6	8
Hydro	14	69	91	51	88	272	63	142	32	100	11	416	1349
Wind	551	60	135	134	112	664	634	973	1523	1945	2125	1838	10694
Total	1519	135	264	310	724	1590	823	2532	1876	2291	2916	2488	17469

Source: Cesar, Swedish Energy Agency, NVE

Table 8 Issued electricity certificates, cancelled electricity certificates and the accumulated surplus for 2003-2013 The surplus increases in years when the number of certificates issued is higher than the number cancelled

	Electricity certificates issued	Electricity certificates cancelled	Surplus/year	Accumulated surplus
2003	5.6	3.5	2.1	2.1
2004	11.0	7.8	3.2	5.4
2005	11.3	10.1	1.2	6.5
2006	12.2	12.4	-0.2	6.3
2007	13.3	14.5	-1.2	5.1
2008	15.0	15.3	-0.3	4.8
2009	15.6	15.4	0.2	5.0
2010	18.1	17.5	0.5	5.5
2011	19.8	16.5	3.3	8.8
2012	21.7	18.7	3.0	11.8
2013	16.4	16.2	0.1	12.0

Source: Svenska Kraftnät's and Statnett's account systems (respectively Cesar and NECS)

3) Rounded figures

4) Rounded figures

Glossary

Term	Explanation
Electricity certificates system	Market-based support system for electricity produced from renewable resources pursuant to laws and regulations on electricity certificates.
Electricity certificate	Proof issued by the government that one MWh (megawatt hour) of renewable electricity has been produced in accordance with the laws and regulations on electricity certificates.
Electricity producer with entitlement to electricity certificates	Power producer that is entitled to electricity certificates in accordance with the laws and regulations on electricity certificates.
Quota obligation	Electricity suppliers and others with a quota obligation must procure electricity certificates and have an obligation to cancel a stated number each year.
Cancellation	The removal of electricity certificates in order to fulfil the annual electricity certificate obligation.
Quota obligation fee	A fee that those with a quota obligation must pay for every certificate in their annual quota that has not been cancelled. The fee is intended to give suppliers and others an incentive to fulfil the quota obligation.
Calculation-relevant electricity consumption	Electricity consumption for which there is a quota obligation. There are national differences in the regulations that determine electricity consumption for which electricity certificates must be obtained.
Quota	Ratio that designates how great a proportion of calculation-relevant electricity consumption must be cancelled each year.
Quota curve	A curve that shows annual electricity certificate quotas over the effective lifetime of the electricity certificates system from 2012 to 2035.
Renewable electricity -production	Electricity produced from renewable energy sources, such as water, wind and sun, as well as geothermal or bioenergy.
Transition system	The transition system applies to plants that came into operation before 1 January 2012. The rules for being able to be approved for the system differ in Norway and Sweden.

Term	Explanation
Electricity certificate surplus	Electricity certificates that have been issued but not cancelled represent the electricity certificate surplus.
Technical adjustment	Necessary adjustments in electricity certificate quotas so as to fulfil the obligations in the agreement on electricity certificates between Norway and Sweden. Thus this does not involve any target increase.
NECS	The Norwegian electricity certificate register. The electricity certificate register is an electronic register with summaries of the issue, cancellation and sale of electricity certificates, It is operated by Statnett.
Cesar	The Swedish electricity certificate register. The electricity certificate register is an electronic register with summaries of the issue, cancellation and sale of electricity certificates, It is operated by Svenska Kraftnät.
Declaration of quota obligation	On 1 March each year, market participants with quota obligations in Norway and Sweden must declare their quota obligations. In Norway this is done on the basis of values reported by grid companies. In Sweden, the market participants with quota obligations make a declaration to the Swedish Energy Agency.
Forward contract in the electricity certificate market	A forward contract is an agreement between two parties to buy or sell a number of electricity certificates on a predetermined date in the future. A distinction is therefore made between the trading date and the delivery date. The price is determined at the time of agreement.
Spot contract in the electricity certificate market	A spot contract is an agreement between two parties to buy or sell a number of electricity certificates at a price determined on the date of agreement. The agreed number of electricity certificates is transferred from seller to buyer within a way of the agreement date.

A common electricity certificate market – more renewable energy production

Norway and Sweden have had a common market for electricity certificates since 1 January 2012. The common electricity certificate market means that renewable resources are used more effectively than if the countries had operated independently. The annual report on the electricity certificate market is published by the Norwegian Water Resources and Energy Directorate (NVE) and the Swedish Energy Agency. With this publication, NVE and the Swedish Energy Agency wish to present statistics for the electrical certificate system and to increase understanding in how the system works.

This report is also published in Norwegian and Swedish.
Download or order the publication from www.energimyndigheten.se or www.nve.no

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