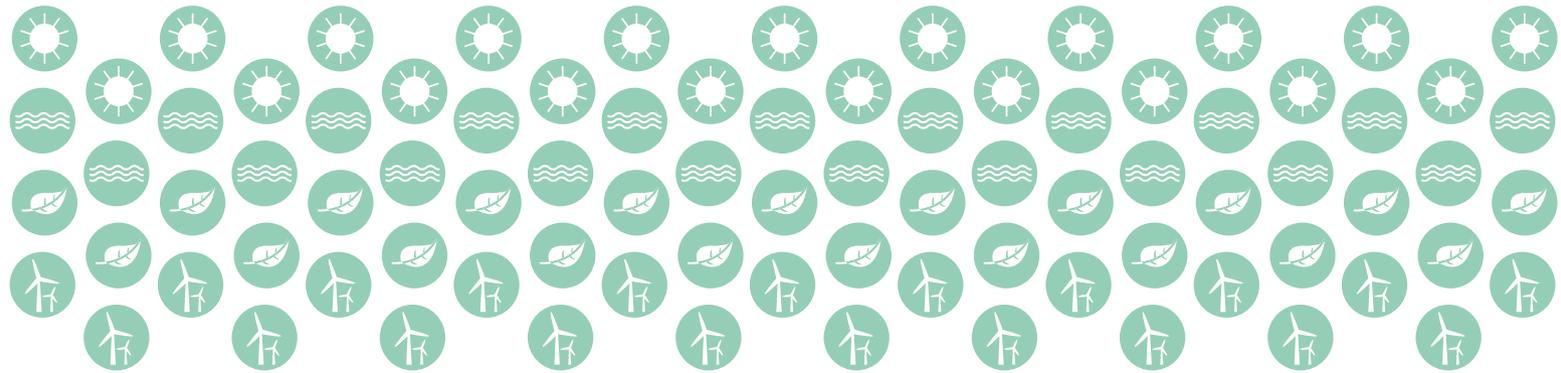
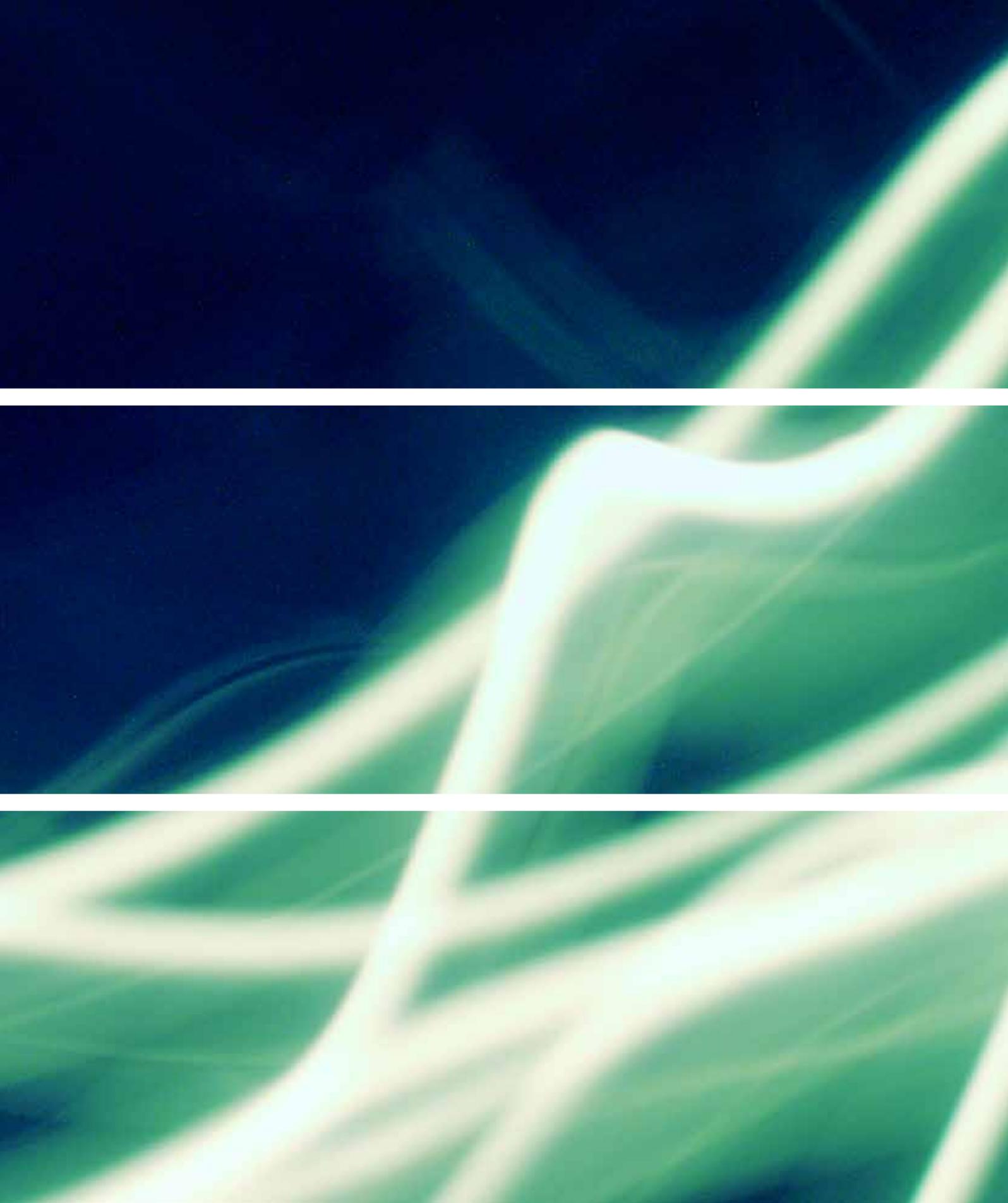


The Swedish-Norwegian Electricity Certificate Market

ANNUAL REPORT 2012





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Preface

The first joint annual report from the Swedish Energy Agency and the Norwegian Water Resources and Energy Directorate (NVE) about the Swedish-Norwegian electricity certificate market has now been completed. With this report, we wish to present a picture of the most important events and key figures for the electricity certificate market during 2012.

For further information about the electricity certificate system and the electricity certificate market, please see the websites of either public authority.

Since 1 January 2012, Sweden and Norway have had a common market for electricity certificates. It is based on the Swedish electricity certificate market, which has been in existence since 2003.

The goal of the electricity certificate market is to increase the renewable electricity production in both countries combined by 26.4 TWh by the end of 2020. Sweden and Norway are responsible for financing half of the increase each, but it is up to the market to decide where and when the new production is to take place.

In addition to information about fulfilment of the common goal, this report also includes a summary of approved production in the Swedish electricity certificate system up to the end of 2011 and approved plants in the Norwegian transitional settlement.

The Agency and NVE are happy to receive feedback about the annual report. Please contact us if you wish to put forward your views on how to make next year's report even better.

The project managers for the annual report were Johanna Nilsson at the Swedish Energy Agency and Anton Jayanand Eliston at NVE.



Erik Brandsma,
Director-General
Swedish Energy Agency



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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.

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

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 marketplace 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.



Key figures for 2012

The tables below summarise relevant figures for the electricity certificate market in 2012. Analyses and clarifications of the content of the tables are provided continuously in the publication.

Key figure table A

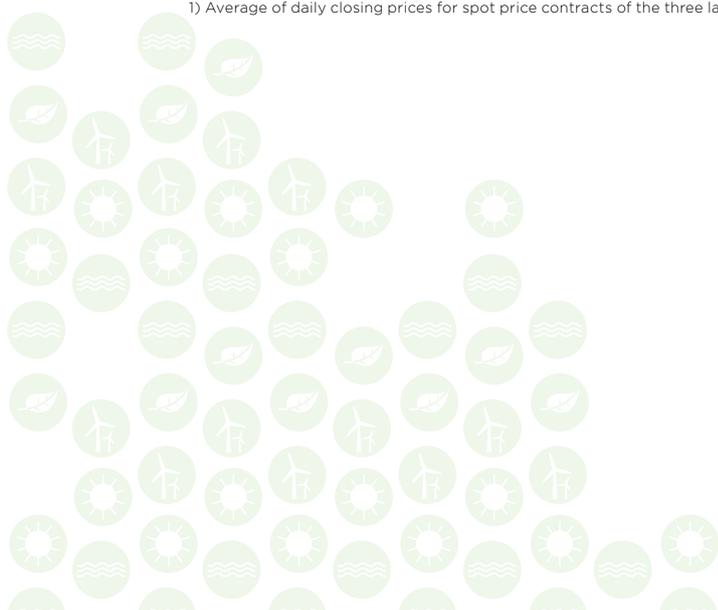
Key figures	Sweden	Norway
Electricity certificates issued [million electricity certificates] ¹	21.4	0.2
Electricity certificates issued to plants included in the common electricity certificate goal [million electricity certificates]	0.74	0.04
Electricity certificates issued to plants not included in the common electricity certificate goal [million electricity certificates]	20.7	0.16
Expected renewable mean annual production for plants included in the common electricity certificate goal [TWh]	2.8	0.4
Cancelled electricity certificates [million electricity certificates]	16.3	2.4
Quota obligation fulfilment [%]	99.95	99.97

¹⁾ 1 million electricity certificates = 1 TWh electricity production entitled to electricity certificates.

Key figure table B

Key figures	Sweden and Norway
Surplus for 2012 [million electricity certificates] (change since 2011)	11.7 (+ 3)
Volume-weighted average price of transactions in the electricity certificate registers NECS and Cesar [SEK/electricity certificate] (change since 2011)	201 (- 46)
Average spot price [SEK/electricity certificate] (change since 2011) ¹	168 (- 19)

¹⁾ Average of daily closing prices for spot price contracts of the three largest brokers on the electricity certificate market during 2012.



How the electricity certificate market works

Electricity certificates provide financial support to producers of renewable electricity in Sweden and Norway. The electricity certificate system is market-based and aims to increase the production of electricity from renewable sources in a cost-effective way.

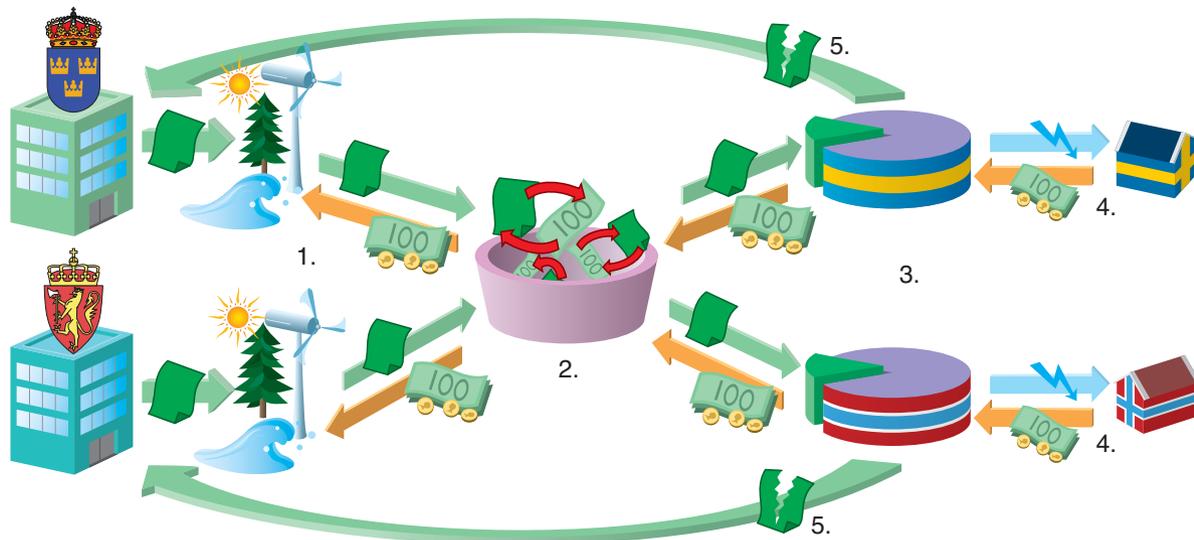


Illustration of the electricity certificate market

1. Electricity producers receive one electricity certificate for each megawatt-hour (MWh) of renewable electricity produced for a maximum of 15 years.

2. The electricity certificates are sold on the electricity certificate market, where supply and demand govern the price. In this way, the producers receive an extra income from the electricity production in addition to the price of the electricity.

3. Demand for electricity certificates is created by electricity suppliers and some electricity end users being obligated by law to buy electricity certificates corresponding to a certain proportion (quota) of their electricity sales or usage.

4. It is the electricity end user who finally pays for the expansion of the renewable electricity production, as the cost of the electricity certificate is part of the electricity invoice.

5. Each year, the body with quota obligation must cancel electricity certificates in order to fulfil its quota obligation.

A COMMON MARKET

Since 1 January 2012, Sweden and Norway have had a common market for electricity certificates. It is based on the Swedish electricity certificate market, which was established in 2003. The goal is to increase renewable electricity production by a total of 26.4 TWh in the two countries between 2012 and 2020, and in this way contribute to the achievement of the countries' goals under the EU's Renewables Directive². The common electricity certificate market is due to continue until the end of 2035.

Sweden and Norway are benefitting from equal shares of the increased common renewable electricity production from the 2012 level when offsetting the countries' goals for 2020. In addition to this, Sweden and Norway shall independently finance the renewable electricity production in plants that became operational before 1 January 2012 and which are entitled to electricity certificates.

These plants are thus not included in the common goal. During the period from 2003 to 2012, i.e. before Sweden and Norway formed a common market, Sweden financed increased renewable electricity production of 13.3 TWh.

The common electricity certificate market means that the renewable resources are used more efficiently than if the countries were to work each by itself on increasing the production of renewable electricity. A larger market with more participants contributes to increased liquidity. As both Swedish and Norwegian producers of renewable electricity can receive support from the system, investments are made where the circumstances and the profitability are best. This means that the goal of increased renewable electricity production can be achieved in a more cost-effective way than by having two national markets.

FACT 1: Contractual undertaking

According to the agreement on a common market for electricity certificates between Sweden and Norway, both countries together shall strive to cancel 198 million certificates (corresponding to 198 TWh) by 2035. The reason why 198 TWh are to be cancelled is that each country shall finance 13.2 TWh new renewable electricity production during 15 years (which makes $15 \text{ year} \times 13.2 \text{ TWh} = 198 \text{ TWh}$).

Sweden and Norway have agreed on equally ambitious undertakings from the time the common market started. In conjunction with the Swedish Riksdag deciding on a new Swedish quota curve in 2010 in order to produce an increase of 25 TWh between 2002 and 2020, a quota curve was achieved that was designed to produce an increase of 13.2 TWh as from 2012. As the countries had agreed on an equally ambitious undertaking, the goal for the common market became 26.4 TWh between 2012 and 2020

²) The EU's Renewables Directive was incorporated in the EEA agreement in December 2011.

ELECTRICITY PRODUCERS

Electricity producers apply to have their plant approved for allocation of electricity certificates from the Swedish Energy Agency or the Norwegian Water Resources and Energy Directorate (NVE). The Swedish or Norwegian state issue electricity certificates to the electricity producers for each megawatt-hour (MWh) of renewable electricity produced. The electricity certificates can then be sold, and the electricity producers receive an extra income from the electricity production over and above the price charged.

Electricity certificates are issued on the 15th of each month, based on the electricity production of the previous month. The certificates are issued to the electricity producers' certificate accounts with the Swedish or Norwegian accounting systems, named Cesar and NECS³ respectively.

New plants and production increases within existing plants are entitled to receive electricity certificates for a maximum of 15 years, however no longer than to the end of 2035, when the electricity certificate system ends. The total number of electricity certificates issued is governed by the electricity production of the approved plants. For combined heat and power plants, the proportion of renewable fuel also has an impact. External factors, such as temperature, precipitation, wind availability and electricity balance affect the electricity production, and therefore also the number of electricity certificates issued.

FACT 2: Energy sources

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

- biofuels⁴ (and peat in combined heat and power plants in Sweden),
- geothermal energy,
- solar energy,
- hydro energy,
- wind energy,
- wave energy.

FACT 3: Assignment periods for approved plants

- Plants that have become operational in Sweden as from 1 May 2003 are entitled to electricity certificate for 15 years.
- In Norway, the assignment period is 15 years from the approval date, minus any time the plant may have been operational before 1 January 2012.
- Production increases within existing plants in Norway and Sweden give entitlement to electricity certificates for the increased renewable electricity production for a maximum of 15 years.
- Major reconstruction within existing plants in Sweden is deemed equal to new plants, with an allocation period of 15 years.

3) Svenska Kraftnät is the accounting authority for Cesar, and Statnett has registration responsibility for NECS.

4) In Sweden according to the Ordinance (2011:1480) concerning Electricity Certificates. In Norway according to FOR 2011-12-16 No 1398: Regulation concerning Electricity Certificates. Owners of biofuel plants must declare monthly in arrears in Cesar or NECS respectively how large a proportion of the electricity produced comes from fuels entitled to electricity certificates compared to the total input fuel.



QUOTAS AND MARKET PARTICIPANTS WITH A QUOTA OBLIGATION

Market participants with a quota obligation are primarily electricity suppliers, but there are also some electricity end users (see fact box below). Each year, they must buy electricity certificates for a certain proportion of their electricity sales or usage – the “quota obligation”. The quotas state the percentage of the electricity usage with quota obligation for which the market participants with quota obligation need to purchase electricity certificates.

The quotas, which are set in the Act concerning Electricity Certificates, will gradually increase until 2020 (see Table 1 in the table section, and also Figure 1), which leads to increased demand for electricity certificates. The quotas are set for each country. Sweden’s quota curve applies from 2003 to 2035. Norway’s quota applies from

2012 to 2035. The quota curves are designed to stimulate the expansion of renewable electricity according to the goals set for the countries. Each country’s quota curve has been calculated and adopted based on assumptions about future electricity usage with quota obligation. If the actual electricity usage with quota obligation diverges from the expected electricity usage, this may mean that the quota curves need to be adjusted in order for cancellation to take place according to the agreement between the countries. The first adjustment will be made in conjunction with the progress review in 2015.

Such an adjustment of the quotas does not entail a change of the goal of 26.4 TWh new production of renewable electricity.

For 2012, Swedish market participants with a quota obligation needed to buy electricity certificates equal to 17.9 % of their electricity sales/

FACTA 4: Market participants with a quota obligation

In Sweden, the following market participants have a quota obligation:

- Electricity suppliers.
- Electricity end users who use electricity they have produced themselves, if the amount of electricity used is more than 60 MWh per calculation year and has been produced in a plant with an installed capacity higher than 50 kW.
- Electricity end users to the extent they have used electricity they have imported or bought on the Nordic electricity exchange.
- Electricity-intensive industries registered by the Swedish Energy Agency.

In Norway, the following market participants have a quota obligation:

- Those who deliver electricity to an end user.
- Electricity end users who use electricity they have produced themselves.
- Electricity end users to the extent they have used electricity they have bought on the Nordic electricity exchange or through bilateral agreements.

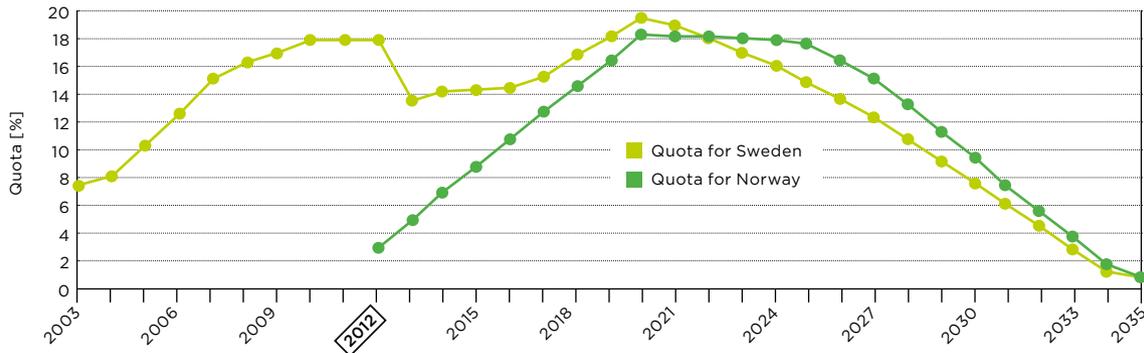


Figure 1. Quotas for Sweden and Norway

Source: Act (2011:1200) concerning Electricity Certificates; LOV 2011-06-24 No 39: Act concerning Electricity Certificates.

usage, and in Norway the quota was 3 %. The reason why the quotas differ is mainly because they are set so as to also finance the production of renewable electricity in plants that are included in the transitional settlement. These plants are not part of the common goal. The difference in quotas is also because the usage of electricity with a quota obligation is higher in Sweden than in Norway.

TRADING

Trading in electricity certificate is done on the electricity certificates 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. The trading is carried out through bilateral agreements between electricity producers and market participants with quota obligations and also via brokers. Both electricity producers and market participants with quota obligations must have an electricity certificate account with Cesar or NECS. During trading, electricity certificates are transferred from a seller's account to a buyer's account.

QUOTA OBLIGATION AND CANCELLATION

Each year, market participants with quota obligations shall inform the Swedish Energy Agency or the Norwegian Water Resources and Energy Directorate respectively of the number of electricity certificates they need in order to fulfil their quota obligation and hold this number on their electricity certificate account. Swedish market participants with quota obligations do this by submitting a declaration of their quota obligation to the Agency. Norwegian market participants with quota obligations shall instead approve the quota obligation presented in NECS.

In order to fulfil the quota obligation, the market participant with a quota obligation must also hold electricity certificates corresponding to the statutory quota of the sales/usage of electricity. The electricity certificates are thereafter cancelled on 1 April, which means that the electricity certificates are deleted and cannot be



used again. With the cancellation, the market participant must buy new electricity certificates in order to fulfil the quota obligation for the next year. In this way, a demand for electricity certificates is constantly being created.

Important dates for quota obligation and cancellation:

15 February

- Norway:

Network companies owners shall notify NECS of the amount of electricity relevant to the calculation used by each market participant with a quota obligation in their network area.

16 February

- Norway:

The total electricity sales/usage by the market participants with quota obligations for the previous year is available on their accounts with NECS.

1 March

- Norway:

Last day for Norwegian market participants with quota obligations to approve the quota obligation.

- Sweden:

Last day for Swedish market participants with quota obligation to submit a declaration of the electricity sales and usage on which the previous year's quota obligation is based.

31 March

- Sweden and Norway

Last date for market participants with quota obligations to hold a sufficient number of electricity certificates on their electricity certificate accounts to fulfil the quota obligation.

1 April

- Sweden and Norway

Cancellation of the number of electricity certificates required to fulfil the quota obligation. If there are not a sufficient number of electricity certificates on the account, the Swedish Energy Agency or NVE shall decide to impose a quota obligation charge.

FACT 5: The cost to electricity suppliers

The electricity suppliers buy electricity certificates on the electricity certificate market, where the price is set on the basis of supply and demand and varies over time. The electricity suppliers' cost for electricity certificates is part of the customers' invoices. The cost varies with the expense to the electricity supplier for the purchase of the electricity certificate and the year's quota. The cost to the electricity customer for the electricity certificate on the invoice is also dependent on the type of electricity contract. In order to make an assessment of what a certain price of an electricity certificate corresponds to in terms of cost per kWh for an electricity certificate, the following formula can be used:

$$\frac{\text{Electricity certificate price} \left[\frac{\text{SEK}}{\text{MWh}} \right] \times \text{year's quota}}{10} = \text{cost of the electricity certificate [SEK 0.01/MWh]}$$

The volume-weighted annual average price of transactions in the electricity certificate registers NECS and Cesar for electricity certificates during 2012 was SEK 201 per electricity certificate. The quotas were 17.9 % in Sweden and 3 % in Norway during 2012. This corresponds to an estimated average cost of electricity certificates of SEK 0.036/kWh in Sweden and SEK 0.06/kWh in Norway during the year. In addition to this cost, transaction costs for the electricity supplier and value added tax for the electricity customer may also be added.

THE ELECTRICITY CERTIFICATE MARKET IS FINANCED BY ELECTRICITY END USERS

If the market participant with a quota obligation is an electricity supplier, its cost for electricity certificates will be part of the customers' invoices. In this way, electricity customers in Sweden and Norway contribute to paying for the expansion. Electricity-intensive industries have an electricity certificate cost only for that part of the electricity not used in the manufacturing process.

Despite the fact that Sweden and Norway are to finance the common goal in equal parts, the cost per kilowatt-hour (kWh) differs in the two countries. Different quotas and a common electricity certificate price means that the cost per kilowatt-hour differs.

ONE ELECTRICITY CERTIFICATE MARKET, TWO NATIONAL REGULATORY FRAMEWORKS

With the common market, an agreement was entered into between Sweden and Norway concerning the way in which the common market was to work. But even if there is a common market, in addition to the agreement the

countries have their own national legislation regulating the electricity certificate system in each country.

The agreement on a common market for electricity certificates between Norway and Sweden is available in its entirety on the government website for each country.

www.regeringen.se

www.regjeringen.no

The national laws that govern the electricity certificate system in Sweden are the following:

- Act (2011:1200) concerning Electricity Certificates
- Ordinance (2011:1480) concerning Electricity Certificates
- The Swedish Energy Agency's Regulations STEMFS (2011:4) concerning electricity certificates

The national laws that govern the electricity certificate system in Norway are the following:

- LOV 2011-06-24 No 39: Act concerning Electricity Certificates
- FOR 2011-12-16 No 1398: Regulation concerning Electricity Certificates

FACT 6: Differences between the two countries

There are certain differences between the countries' legislation, even if the fundamental principles are the same. Some important differences are presented below:

- In Sweden, peat is entitled to electricity certificates.
- The proportion of biofuel in mixed waste qualifies for electricity certificates in Norway.
- Plants that become operational in Sweden after 2020 can receive electricity certificates.
- In Sweden, there is an opportunity to be issued electricity certificates for the entire production following a major reconstruction; in Norway, electricity certificates are issued for the production increase.
- Some minor differences in exception rules for electricity-intensive industry.

WHO DOES WHAT?

The Swedish Energy Agency and the Norwegian Water Resources and Energy Directorate:

- Manage the electricity certificate system in each country.
- Handle applications for electricity certificates.
- Register/deregister market participants with a quota obligation.
- Supervise each country's regulatory framework for electricity certificates.
- Provide continuous information about the development of the electricity certificate market.
- Administer sanction and quota obligation charges.

The Swedish Energy Agency and NVE report market statistics, such as the number of approved production plants and registered market participants with quota obligations on their websites. These also include information about the electricity producers from which electricity certificates can be bought, and other general information about the electricity certificate system. The websites also include this publication in an electronic edition.

*[www.energimyndigheten.se](http://www.energimyndigheten.se/the-electricity-certificate-system)
[/the-electricity-certificate-system](http://www.nve.no/elsertifikater)
www.nve.no/elsertifikater*

Svenska Kraftnät and Statnett

- Responsible for registration in the Swedish and Norwegian accounting systems (Cesar and NECS respectively).
- Issue electricity certificates on the 15th of each month.

- Cancel electricity certificates following decisions from the Swedish Energy Agency and NVE respectively.
- Publish information continuously about the number of electricity certificates issued, sold and cancelled, and also the average price of electricity certificates.

Svenska Kraftnät and Statnett report information continuously on their websites. These include information about the number of electricity certificates issued, sold and cancelled, and also the average price of electricity certificates.

*<http://certifikat.svk.se>
<http://necs.statnett.no>*

Swedish Energy Markets Inspectorate

In Sweden, the Swedish Energy Markets Inspectorate (Ei) is the supervisory authority for the energy markets for electricity, natural gas and district heating. Ei checks that energy companies comply with the regulatory framework and works to ensure the energy markets function well. SEMI's website shows information about the electricity prices of the electricity suppliers - including the electricity certificate price - which makes it possible for electricity customers to compare electricity prices on the market. The website also includes analyses and monitoring of the contemporary environment of the electricity market

www.energimarknadsinspektionen.se/en

The Council

The Council for the electricity certificate system was set up in accordance with Article 11 of the Agreement on a Common Market for Electricity Certificates dated 29 June 2011 between Sweden and Norway. The Council consists of representatives from the Norwegian Ministry of Petroleum and Energy and the Swedish Ministry of Enterprise, Energy and Communications. The task of the Council is to facilitate planning and the implementation of progress reviews, among other items. This is done by initiating investigations, maintaining continuous supervision of the development of the market, analysing any needs for development of the regulatory framework and developing a common communication strategy for measures of importance to the market participants.

The Council is a non-decision-making body in relation to national entitlement, for example changes in 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 certificates. This applies, for example, the allocation for production increases within existing plants and new allocations following major reconstruction.

It is the Council that 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

During 2012, plants with an expected mean annual production of 3.2 TWh became operational and were approved for inclusion in the electricity certificate system. Of this production, 2.8 TWh was constructed in Sweden and 0.4 TWh in Norway. Production from these plants is included in the common goal of 26.4 TWh electricity production from renewables before the end of 2020.

In 2012, Swedish wind power represented around 68 per cent (2.1 TWh) of the new expected mean annual production included in the common goal. The wind power plants that became operational in Sweden during 2012 are relatively evenly distributed across the area prices (see Table 4.1 in the table section).

It was primarily new hydro plants that contributed to the increased expected mean annual production in Norway. The major part of the new electricity production in Norway is in NO2 and NO5 (see Figure 3 and Table 4). Most of the

Norwegian wind power plants that became operational in 2012 are not included in the electricity certificate system, as the owners instead chose to retain the investment grant from ENOVA.

In order to achieve the goal of 26.4 TWh by the end of 2020, an average of 2.93 TWh new electricity produced from renewables needs to become operational in the two countries together each year.

FACT 7: Expected mean annual production in relation to actual production

The expected mean annual production is an estimate of the annual production of electricity from renewables at one plant under normal operational circumstances. This will differ from the actual production each year for the plant. This chapter uses expected mean annual production, as this gives a picture of the expected annual production for the operational plants.

It is the actual production that determines the number of electricity certificates issued to the plant. The production entitled to receive electricity certificates is dependent upon the weather and the time of the year the plant was approved for inclusion in the system. The goal of 26.4 TWh will correspond to the actual production by 2020. In 2012, these plants were issued electricity certificates corresponding to 0.04 TWh in Norway and 0.74 TWh in Sweden.

There is no fixed goal for each year, but the relationship between actual expansion to the average figure still provides an indication of how much new production is needed each year in order to reach the goal by 2020 (see Figure 2).

It is the market participants that make the investment decisions and build the plant, and thereby determine how much renewable electricity production is expanded each year.

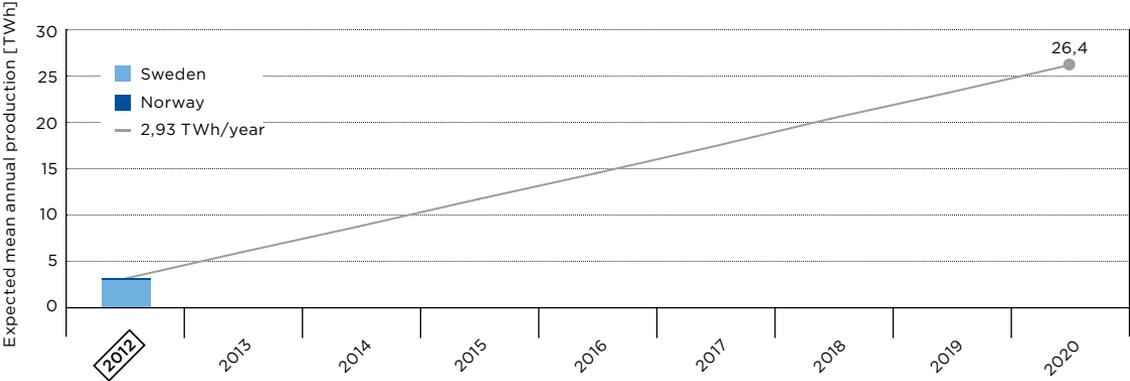


Figure 2. New expected mean annual production within the 26.4 TWh goal

Source: Swedish Energy Agency, NVE

FACT 8: Plants not included in the common goal

The plants entitled to receive electricity certificates that became operational before 2012 are not included in the common goal of 26.4 TWh by 2020. Electricity certificates issued to these plants shall instead be financed by each country. During 2012, these plants were issued with electricity certificates for production corresponding to 0.16 TWh in Norway and 20.7 TWh in Sweden. On 1 January 2012, approximately 1,450 plants were phased out of the electricity certificate system in Sweden. This means that the allocation of electricity certificates will reduce significantly during 2013.



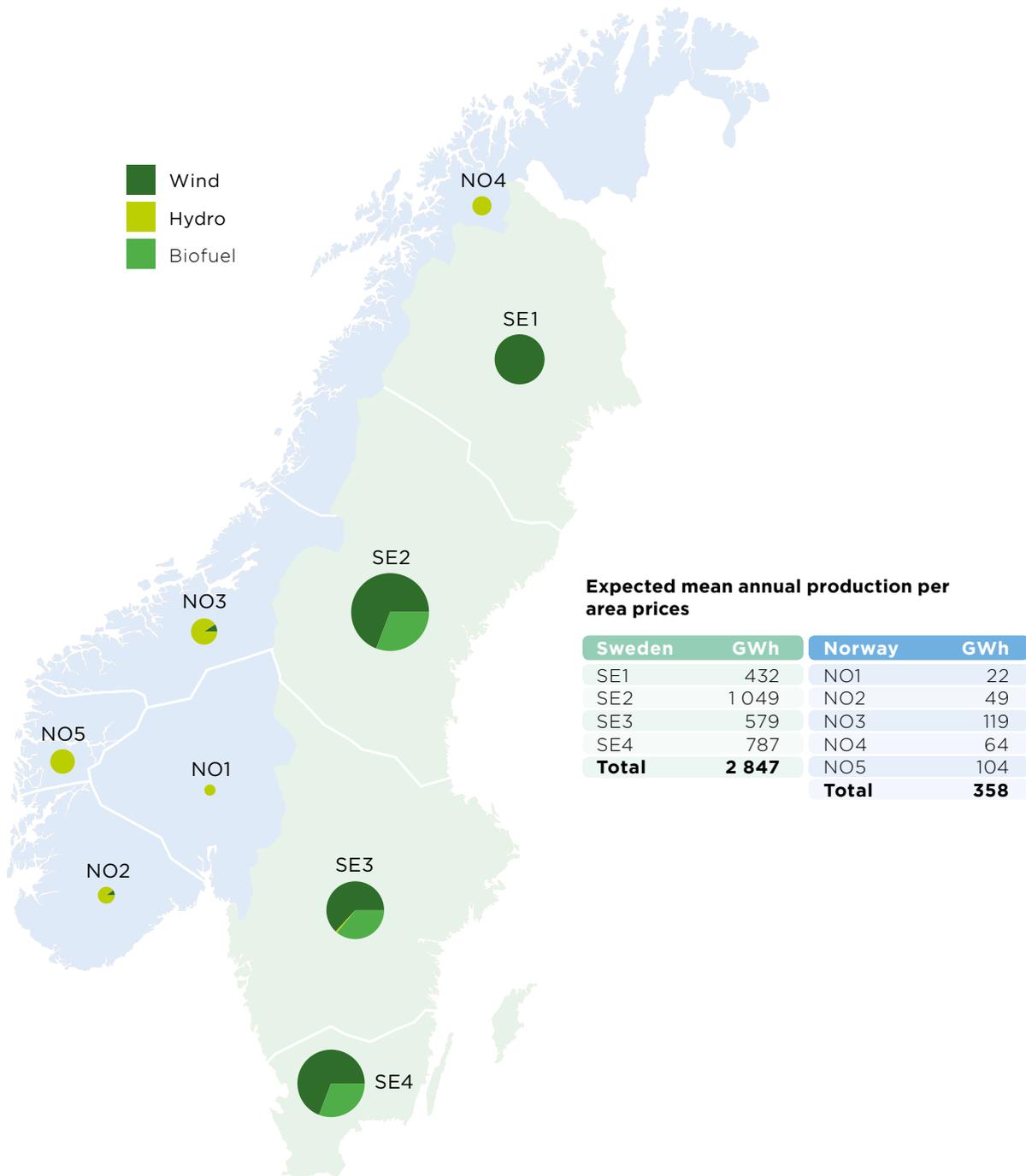
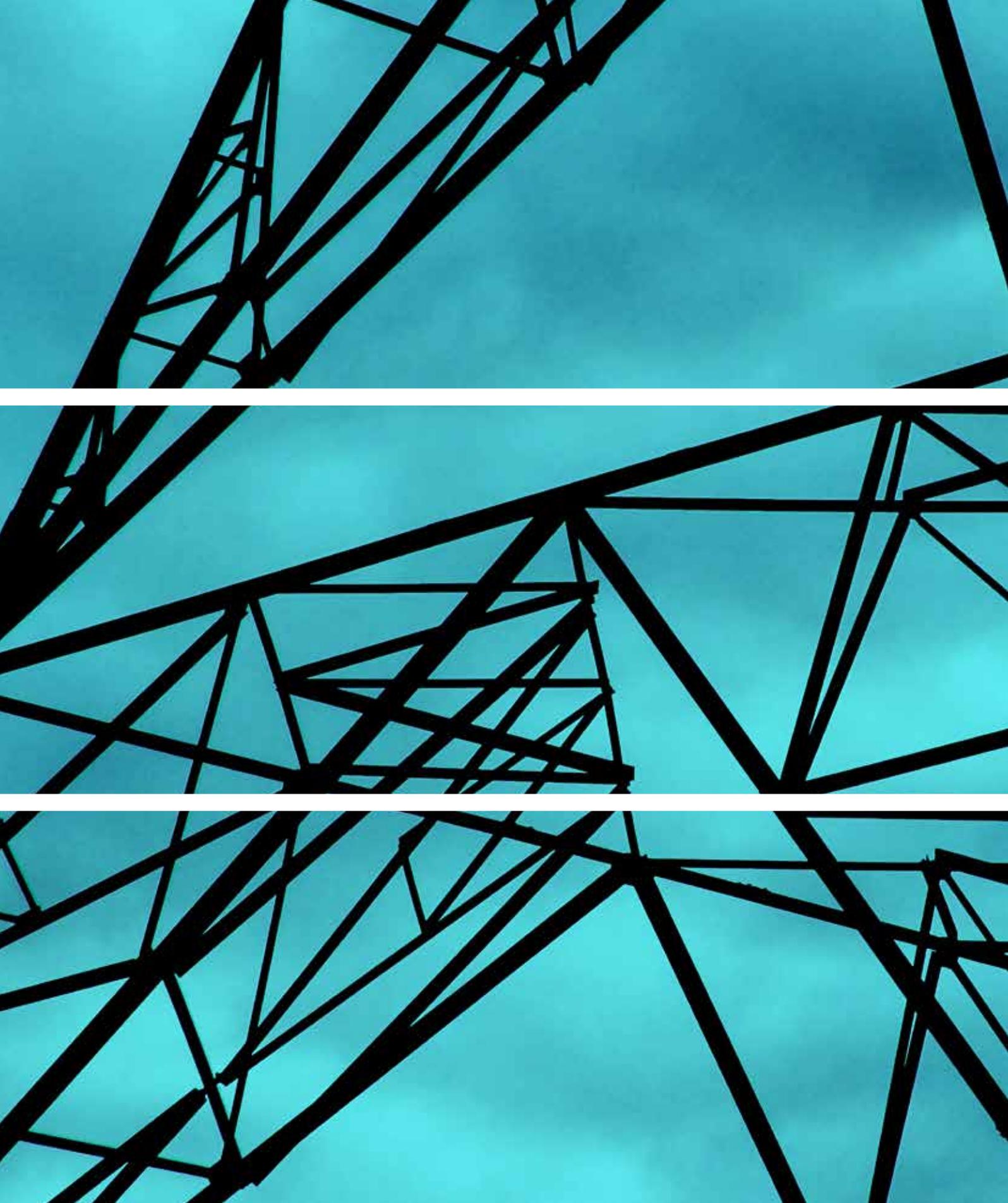


Figure 3. New expected mean annual production for plants within the 26.4 TWh goal divided up by area prices

Source: Swedish Energy Agency, NVE



Issuing of electricity certificates

During 2012, the electricity producers in Sweden and Norway were issued 21.6 million electricity certificates in total. The number of electricity certificates issued will fall in 2013, however, as a result of older plants being phased out of the system.

In total, electricity producers in the two countries were issued 21.6 million electricity certificates during 2012. The distribution between Sweden and Norway was 21.4 and 0.2 million electricity certificates respectively. Figure 4 and the table on the next page shows the allocation within the countries and the distribution between different sources of energy.

The allocation to biofuels in Sweden was at approximately the same level in 2012 as in 2011, despite new biofuel power having been added. Electricity certificates issued to electricity production from hydro energy in Sweden increased significantly compared to 2011. This may be explained by 2012 having been a year with much greater water availability.

DISTRIBUTION OF ISSUED ELECTRICITY CERTIFICATES

The reason the number of electricity certificates issued in Sweden continues to increase is largely due to the continued expansion of wind power. In 2012, the number of electricity certificates issued to wind power amounted to 7.2 million.

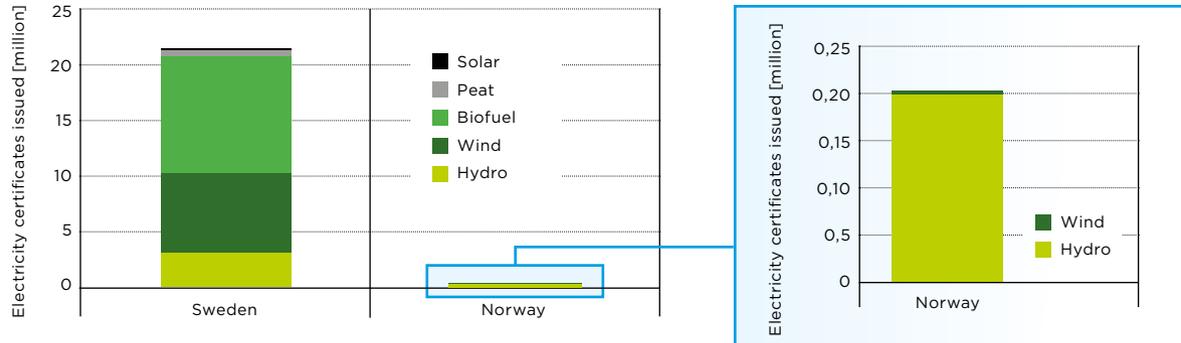


Figure 4. Electricity certificates issued in Sweden and Norway during 2012

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

Key figure table C

Electricity certificates issued [million]	Sweden	Norway
Wind	7,16	0,003
Hydro	3,14	0,20
Biofuel	10,57	-
Solar	0,001	-
Peat	0,55	-
Total	21,4	0,2

FACT 9: Electricity producers receive one electricity certificate for each megawatt-hour (MWh) renewable electricity produced.

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

PHASING-OUT OF APPROVED PLANTS

During 2013, the number of electricity certificates issued on the market will be reduced. This is because many older Swedish plants were phased out from the electricity certificate system at the end of 2012, and will therefore no longer be entitled to certificates. Some of these plants have however been given a longer allocation period following outages. The plants also have the opportunity to get a new allocation period if major reconstruction has been carried out, or if production has increased within the existing plant.

Of the Swedish plants that were operational before 1 May 2003 and have been issued electricity certificates, the allocation period for the majority ended at the end of 2012. The older plants remaining are entitled to receive electricity certificates until the end of 2014.

The number of approved plants fell by approximately 1,450 due to the phasing-out as from 1 January 2013. During 2012, these plants were issued 10.8 million electricity certificates.

During the same period, 10.8 million electricity certificates were issued to the plants that remain within the system. Some of those that remain in the system became operational in 2012, and were therefore not issued electricity certificates for a full year.

Tables 7 and 8 (see the tables section) show the installed capacity and expected mean annual production for all approved plants, divided up by when their allocation period ends. For biofuel plants, an annual average for the electricity production entitled to electricity certificates over the last two years is shown instead of the plants' expected mean annual production. It is important to remember that the amount of electricity produced that is phased out at various times may change due to differing operational circumstances. As the annual average for biofuel plants is calculated using longer series of production data, the importance of structural and overall changes is smaller. Factors that may impact on the calculation are changes in the proportion of fuel entitled to electricity certificates and external factors, such as temperature.



Cancellation of electricity certificates

In 2012, a total of 18.7 million electricity certificates were cancelled. Of these, 16.3 million were cancelled in Sweden and 2.4 million in Norway. This is 1.2 million electricity certificates fewer than the authorities had assumed when drawing up the quota curves.

The quota curves are based on how much electricity produced from renewable resources is to be financed and how large the electricity usage with a quota obligation can be assumed to be in each country. The relationship between these figures provides a percentage, which constitutes the quota. As the quota is fixed, while the electricity usage with a quota obligation varies with factors such as the temperature and economic outlook, the number of cancelled electricity certificates will not always correspond to the cancellation calculated to achieve the goal. A year with greater electricity usage than assumed in the quota curves means that too many electricity certificates are cancelled, while years with lower electricity usage means that too few electricity certificates are cancelled.

In order to ensure that Sweden and Norway finance equal amounts of electricity production, the quota curves must be adjusted during the on-going collaboration on the electricity certificate market. Any adjustment will be made in conjunction with the progress review in 2015. During 2012, the electricity usage with a quota obligation in Norway was higher than expected in the quota curve. Therefore more electricity certificates were cancelled than expected. However, as the quota in Norway was low, the discrepancy between the assumed and actual cancelled electricity certificates was small (see Figure 5). Contrary to what happened in Norway, fewer electricity certificates were cancelled in Sweden than expected in the quota curve. The reason for

this was that electricity usage with a quota obligation was lower than expected. The discrepancy between actual and expected electricity usage with a quota obligation was about the same in Sweden and in Norway, but because of the higher quota in Sweden, the discrepancy between actual and assumed cancellation of electricity certificates was greater in Sweden.

QUOTA OBLIGATION FULFILMENT

The cancellation for 2012 shows that most market participants with a quota obligation cancelled a sufficient number of electricity certificates. For 2012, the overall quota obligation fulfilment was 99.9 per cent. Market participants with a quota obligation who do not cancel electricity certificates have a quota obligation charge imposed for the electricity certificates lacking on the certificate account. For 2012, 48 market participants (6 in Norway, 42 in Sweden) had to pay the quota obligation charge of SEK 297.86 per electricity certificate that had not been cancelled. A total of 9,490 electricity certificates were lacking at cancellation. The charge amounts to 150 per cent of the volume-weighted average price under the calculation year on transactions in the accounting systems (Cesar and NECS). Historically, the proportion of cancelled electricity certificates has been almost 100 per cent in Sweden. In Norway, the quota obligation fulfilment was similarly almost 100 per cent for the first cancellation, which occurred in 2012.

Key figure table D

Cancellation for 2012	Sweden	Norway
Cancelled [million electricity certificates]	16,3	2,4
Quota obligation fulfilment [%]	99,9	99,97
Quota obligation charge	SEK 297.86 each	NOK 267.80 each

Key figure table E

Cancellation for 2012	Sweden		Norway	
	Assumed in the quota curve	Actual usage and cancellation	Assumed in the quota curve	Actual usage and cancellation
Usage [TWh]	96,6	91	74	79,4
Quota obligation [%]	17,9		3	
Cancelled [TWh]	17,3	16,3	2,2	2,4

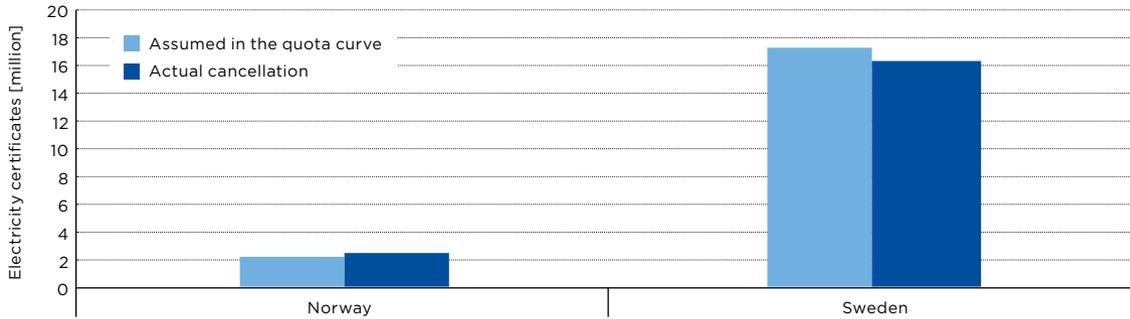


Figure 5. The number of cancelled electricity certificates in relation to the number assumed in the quota curve for Norway and Sweden respectively

Source: Svenska Kraftnät's and Statnett's accounting systems (Cesar and NECS respectively), Swedish Energy Agency and NVE

Surplus

At the end of 2012, the surplus minus the certificates cancelled, amounted to 11.7 million electricity certificates. This is an increase of 3.0 million electricity certificates compared to last year and corresponds to an increase of 33 per cent.

Electricity certificates issued but not cancelled constitute the electricity certificate surplus. There must be sufficient electricity certificates to balance the market. The surplus increases during the years when the allocation of electricity certificates is higher than the demand for them. The explanation for differences between supply and demand for electricity certificates during individual years may be the time when plants are built and start producing, or the fact that fewer electricity certificates are cancelled than expected. The latter occurs if the electricity usage with quota obligation is lower than assumed when the quota curve was set, or if market

participants with quota obligation do not cancel electricity certificates according to their quota obligation.

At the start of the common market for electricity certificates in 2012, the surplus was 8.7 million electricity certificates. This surplus has been built up gradually since 2003 on the Swedish electricity certificate market, and is now part of the common market.

In 2012, the surplus increased by 3.0 million electricity certificates. This means that after the 2012 cancellation, the surplus held 11.7 million

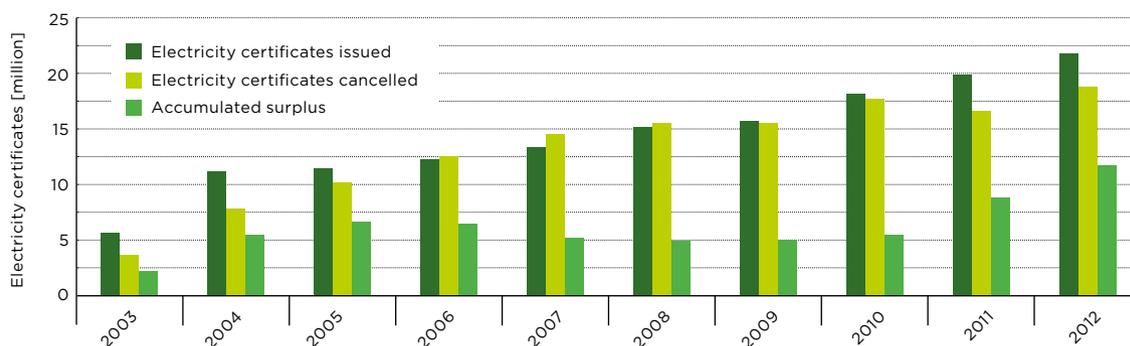


Figure 6. Electricity certificates issued, cancelled and the accumulated surplus during 2003–2012

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

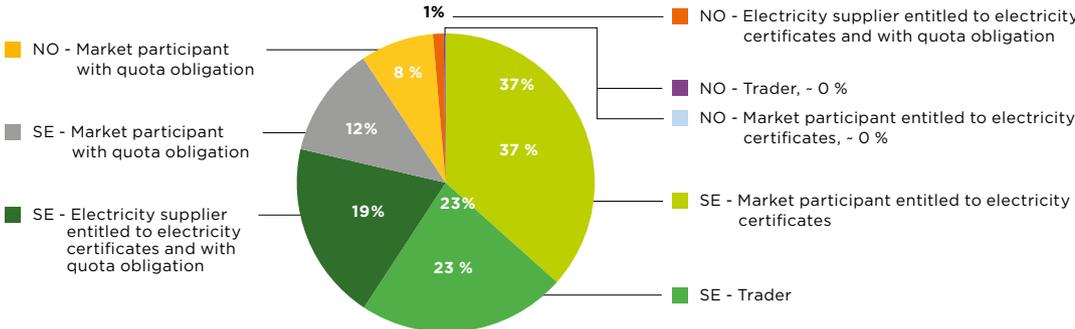
electricity certificates (see Figure 6). To reduce the surplus, Sweden adjusted its quotas at the latest progress review. The new quotas apply from 2013, and will contribute to reducing the surplus as a one-off measure.

The surplus in relation to the number of electricity certificates to be cancelled may provide an indication of the pressure on the electricity certificate market. A low surplus in relation to the number of electricity certificates to be cancelled may contribute to increased price pressure on the electricity certificate market, as the competition to buy electricity certificates increases. In the same way, a large surplus in relation to the number of electricity certificates cancelled may contribute to a negative price pressure on the electricity certificate market.

DISTRIBUTION OF THE SURPLUS

Following the cancellation of electricity certificates on 2 April 2013, there were 14.2 million electricity certificates in various accounts with NECS and Cesar. This also includes electricity certificates issued in relation to production in January and February 2013.

The electricity certificates in accounts as of 2 April 2013 had a market value of SEK 3.3 billion, based on the average closing price of SEK 230/MWh for spot price contracts for electricity certificates on 2 April 2013 with the three largest electricity certificate brokers. Figure 7 shows how these electricity certificates were distributed across the accounts of various market participants in Sweden and Norway.

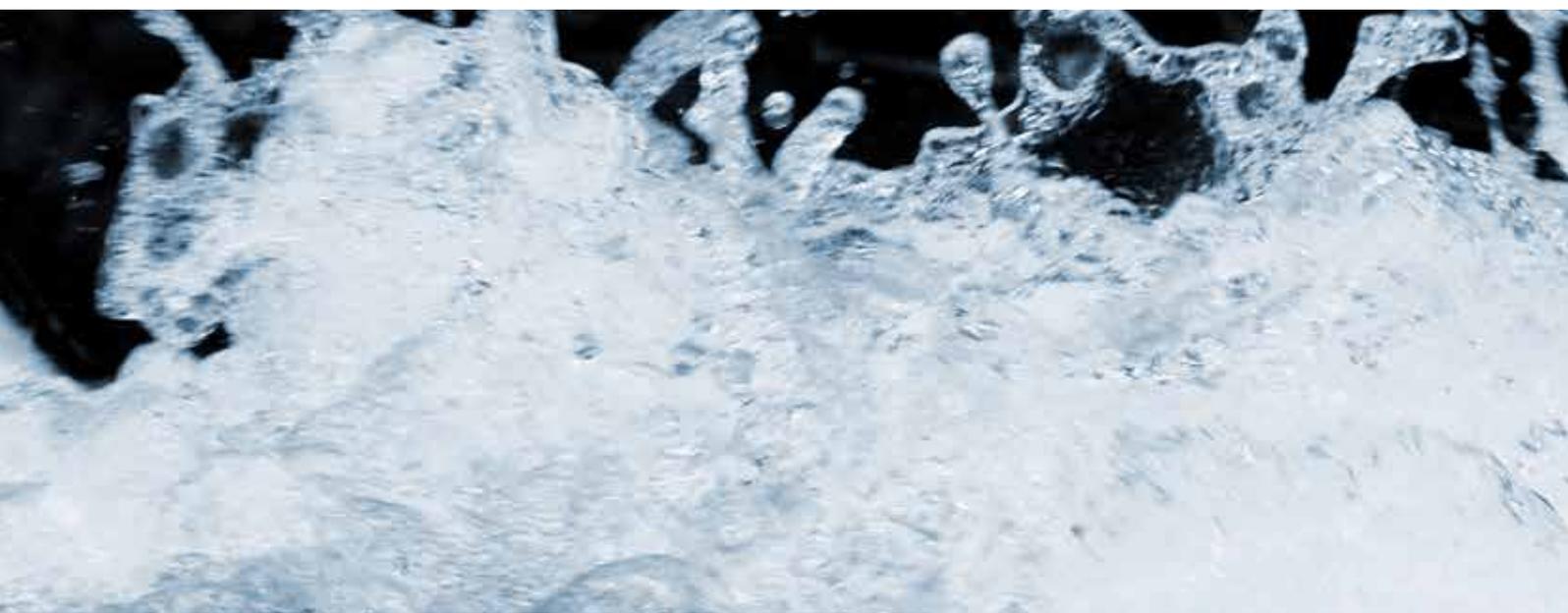


Size of the surplus on 2 April 2013: 14.2 million electricity certificates. This also includes electricity certificates issued in relation to production in January and February 2013.

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

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





Price and trading

The average spot price registered with the three largest brokers of electricity certificates amounted to SEK 168/MWh during 2012. This corresponds to a price fall of 10 per cent since 2011. Despite a fall in the average market price of electricity certificates, over the full year, the spot price of electricity certificates rose by as much as 44 per cent during 2012.

2012 STARTED WITH LOW PRICES ON ELECTRICITY CERTIFICATES

The lowest level was reached in February, when the average spot price for the month from the three largest brokers of electricity certificates was SEK 140/MWh. The prices in these marketplaces in 2012 have been approximately equal to an average difference between highest and lowest prices of SEK 2/MWh. Prices rose during the second half of 2012, and the average price of electricity certificates for December finished up at SEK 210/MWh (see Figure 8). The size of the surplus and the

expansion rate may be some of the factors that could explain the price development.

TRADING ON THE ELECTRICITY CERTIFICATE MARKET

Trading in electricity certificates is mostly done between market participants with quota obligations and market participants entitled to electricity certificates. There are also traders with accounts in the electricity certificate registers NECS and Cesar. These traders' intention is to buy electricity certificates and sell them at a profit at a later date, and they may thereby



Figure 8. Average price of electricity certificates in spot trading during the period 2003–2012

Source: CleanWorld, ICAP and Svensk Kraftmäklings



contribute to evening out prices of electricity certificates over time.

According to a summary of the transactions in NECS and Cesar during the period from 1 April 2012 to 31 March 2013, approximately 49.4 million electricity certificates were sold (which corresponds to 49.4 TWh).

Data from the three largest brokers on the electricity certificate market shows that approximately 25 TWh was traded via brokers during the period 31 March 2012 to 1 April 2013. Figure 9 shows the distribution of the various contracts traded via brokers.

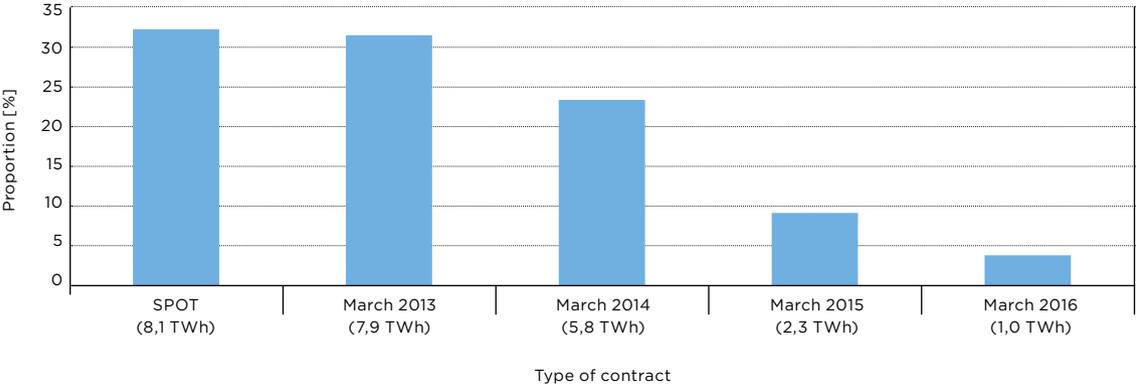


Figure 9. Electricity certificate trading via brokers divided up by type of contract during the period 1 April 2012 up to and including 31 March 2013

Source: CleanWorld, ICAP and Svensk Kraftmäklng

FACT 10: Standard contracts - supply and payment

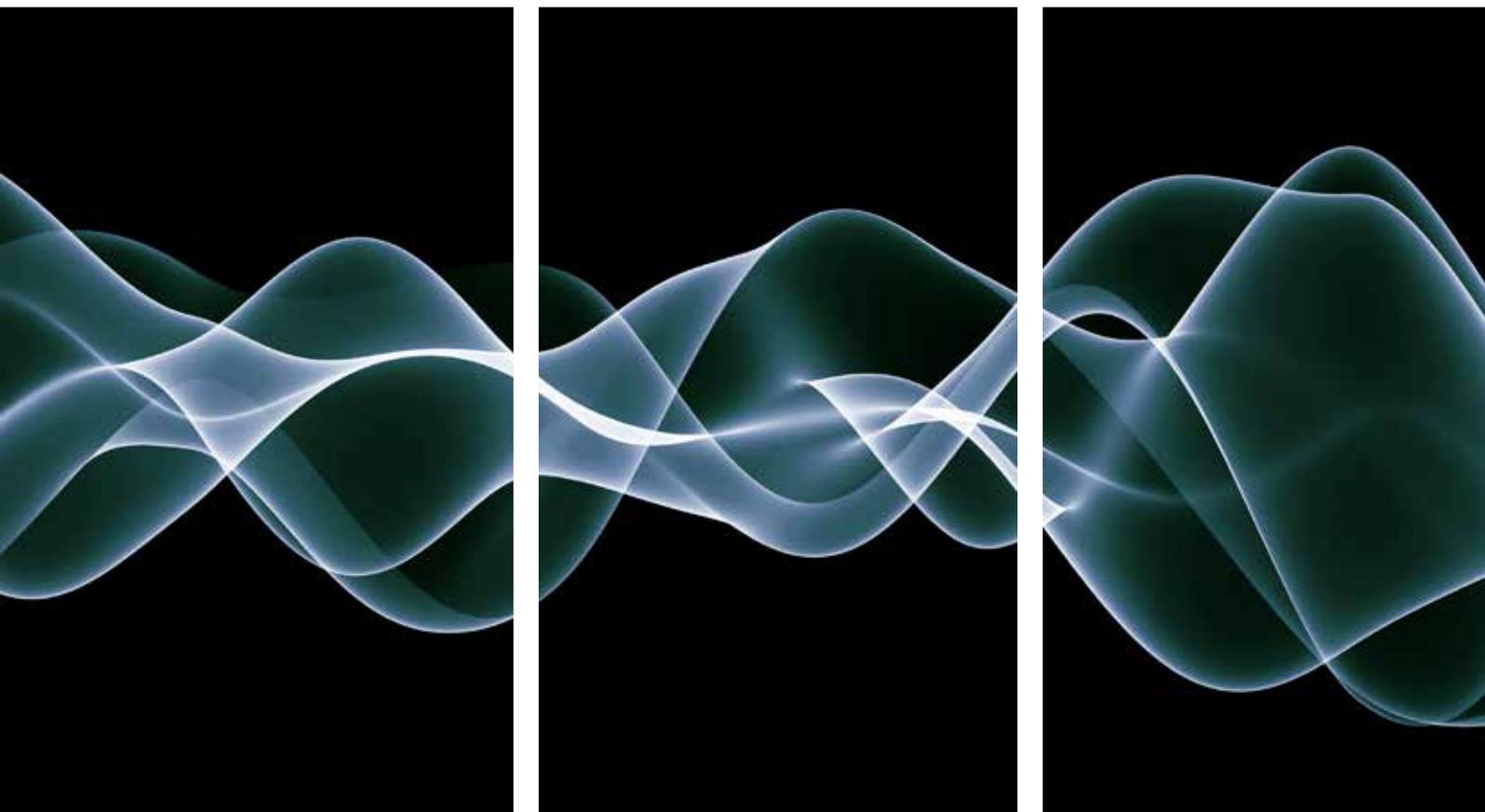
Electricity certificates are bought and sold both bilaterally and via brokers. There are two types of broker contracts available on the electricity certificate market, namely spot price contracts and March contracts. These contracts are available for the next five years.

Spot contract	Price.....	Determined on the contract date
	Delivery	Within five banking days of the contract date
	Payment.....	Within ten banking days of the contract date
March contract	Price.....	Determined on the contract date
	Delivery.....	18 March each year
	Payment.....	Within five banking days of the contract date

REGISTER PRICES

The volume-weighted average price of transactions in NECS and Cesar as from 1 April up to and including 31 March 2013 was SEK 198.57/MWh. This is a decrease of SEK 7.9/MWh since 1 April 2012. The average prices presented in the electricity certificate registers Cesar and NECS are volume-weighted average prices of transactions in each register during the period in question. The price therefore reflects all transfers between two legal entities during the period.

The register price provides a value of the electricity certificates over a historic period, weighted in relation to the volume turned over during the same period. The market price, on the other hand, provides an indication of the value of an electricity certificate at a given point in time. The register price can therefore not be considered to be the market price of electricity certificates.



Progress review

NVE and the Swedish Energy Agency are working on producing a basis for how the first progress review of the Norwegian-Swedish electricity certificate market should be designed. The review shall be carried out before the end of 2015.

According to the agreement for the Swedish-Norwegian common market for electricity certificates, progress reviews shall be carried out at regular intervals. The reviews shall carry out joint analysis to evaluate the need for changes to the regulatory framework and adjustments to the quota curves in order to achieve the goal.

The Norwegian Ministry of Petroleum and Energy has mandated the Norwegian Water Resources and Energy Directorate NVE to produce a basis for the progress review as follows:

1. Technical adjustment of the quota curve based on an assessment of the electricity usage with quota obligation up until 2035 and the production within the Norwegian transition system;
2. Assistance to the Norwegian Ministry of Petroleum and Energy in the evaluation of the electricity usage with quota obligation;
3. Evaluation of whether there is sufficient availability of feasible projects in Norway and Sweden and of the risk that the expansion rate does not develop in a favourable way in order to achieve the goals for 2020;
4. Evaluation of advantages and disadvantages of determining the quota as a proportion of electricity usage compared to determining it in TWh; and

5. Evaluation of the current quota obligation charge compared to alternative fee structures.

The Swedish Ministry of Enterprise, Energy and Communications has mandated the Swedish Energy Agency to:

1. Analyse and propose any adjustments of the quota obligation curve necessary in order for Sweden to fulfil its commitment to Norway in the agreement on a common market for electricity certificates;
2. Identify and assess risks that may lead to the expansion rate of renewable electricity production not developing as expected up to 2020;
3. Highlight the role of peat in the electricity certificate system and analyse the consequences of a possible phasing-out of peat;
4. Analyse the historical development of the system, in relation to electricity certificate prices, saved electricity certificates and the phasing-out of plants; and
5. Analyse the functionality of the market, in relation to turnover, liquidity, number of market participants and market clearance, and as necessary propose measures to further improve the functionality.

You can read more about the mandates on the websites of the Swedish Energy Agency and Norwegian Water Resources and Energy Directorate.



Tables

Table 1. Quotas for Sweden and Norway respectively

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) concerning Electricity Certificates [Sweden]
 LOV 2011-06-24 No 39: Act concerning Electricity Certificates [Norway]

Table 2.1 The estimated cost to electricity customers of electricity certificates in Sweden (per kWh electricity) during 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Volume-weighted annual average price of electricity certificates (Cesar, NECS) [SEK]	201	231	216	167	195	247	293	295	247	201
Quota for Sweden	0,074	0,081	0,104	0,126	0,151	0,163	0,17	0,179	0,179	0,179
Average cost of electricity certificates to electricity customers in Sweden (SEK 0.00/kWh) ¹	1,5	1,9	2,3	2,1	3,0	4,0	5,0	5,3	4,4	3,6

1) VAT and transaction costs may be added.

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

Table 2.2 The estimated cost of electricity certificates to electricity customers in Norway (per kWh electricity) during 2012

	2012
Average cost of electricity certificates to electricity customers in Norway (SEK 0.00/kWh) ¹	0,7

1) VAT and transaction costs may be added. The cost to Norwegian household customers is based on statistics from 77 out of 106 electricity suppliers in Norway.

Source: Norwegian water resources and energy directorate

Table 3. Expected annual production for plants within the 26.4 TWh goal during 2012

Energy source	Norway [TWh]	Sweden [TWh]
Biofuel	-	0,77
Solar	-	0,001
Hydro	0,34	0,01
Wind	0,02	2,06
Total	0,4	2,8

Source: Swedish Energy Agency. Norwegian water resources and energy directorate



Table 4.1 Expected annual production per area price for plants in Sweden within the 26.4 TWh goal

SE1	Expected mean annual production [GWh]
Biofuel	-
Solar	-
Hydro	4
Wind	428
Total	432

SE2	Expected mean annual production [GWh]
Biofuel	323
Solar	0,03
Hydro	2
Wind	724
Total	1 049

SE3	Expected mean annual production [GWh]
Biofuel	207
Solar	0,91
Hydro	6
Wind	365
Total	579

SE4	Expected mean annual production [GWh]
Biofuel	243
Solar	0,25
Hydro	-
Wind	544
Total	787

Source: Swedish Energy Agency

Table 4.2 Expected mean annual production per area price for plants in Norway within the 26.4 TWh goal

NO1	Expected mean annual production [GWh]
Biofuel	-
Solar	-
Hydro	22
Wind	-
Total	22

NO2	Expected mean annual production [GWh]
Biofuel	-
Solar	-
Hydro	44
Wind	5
Total	49

NO3	Expected mean annual production [GWh]
Biofuel	-
Solar	-
Hydro	108
Wind	11
Total	119

NO4	Expected mean annual production [GWh]
Biofuel	-
Solar	-
Hydro	-
Wind	64
Total	64

NO5	Expected mean annual production [GWh]
Biofuel	-
Solar	-
Hydro	104
Wind	-
Total	104

Source: Norwegian water resources and energy directorate



Table 5. Electricity certificates issued in Sweden and Norway during 2012

Energy source	Sweden [millions of electricity certificates]	Norway [millions of electricity certificates]
Biofuel	10,57	0,0
Solar	0,001	0,0
Peat	0,55	0,0
Hydro	3,14	0,20
Wind	7,16	0,003
Total	21,42	0,20

Source: Svenska Kraftnät's accounting system (Cesar respective NECS)

Table 6.1 Number of plants, installed capacity and electricity production per energy source during 2003-2012 in Sweden

Number of plants [ea] ¹	2003 May-Dec	2004	2005	2006	2007	2008	2009	2010	2011	2012
Biofuel, peat	87	105	118	125	131	142	156	163	170	180
Solar	1	1	2	3	4	9	11	13	31	61
Hydro	966	1 040	1 060	1 075	1 094	1 120	1 144	1 164	1 200	1 210
Wind	543	613	668	706	846	948	1 108	1 371	1 633	1 875 ³
Total	1 597	1 759	1 848	1 909	2 075	2 219	2 419	2 711	3 034	3 326

Installed capacity [MW] ²	2003 May-Dec	2004	2005	2006	2007	2008	2009	2010	2011	2012
Biofuel, peat	3 157	3 185	3 424	3 643	3 676	3 451	3 892	4 056	3 924	4 138
Solar	0,008	0,008	0,011	0,036	0,043	0,309	0,369	0,557	1,001	1,601
Hydro	491	504	517	540	558	598	602	620	657	662
Wind	401	472	530	583	831	1 074	1 440	1 998	2 688	3 495
Total	4 049	4 161	4 471	4 765	5 066	5 123	5 935	6 674	7 271	8 296

Electricity production renewable and peat [MWh]	2003 May-Dec	2004	2005	2006	2007	2008	2009	2010	2011	2012
Biofuel	4 218 276	7 670 770	7 925 790	8 593 538	9 049 308	9 599 311	9 765 983	11 162 850	10 305 639	10 571 205
Solar	4	6	5	20	19	129	212	275	529	1 027
Peat	-	544 791	634 012	556 380	579 622	834 194	871 437	792 434	657 438	550 734
Hydro	963 637	1 968 325	1 799 446	2 018 577	2 195 320	2 607 348	2 441 624	2 611 044	2 698 130	3 144 187
Wind	455 642	864 546	939 125	988 340	1 431 644	1 995 846	2 490 409	3 485 933	6 093 169	7 159 745
Total	5 637 559	11 048 438	11 298 378	12 156 855	13 255 913	15 036 828	15 569 665	18 052 536	19 754 905	21 426 898

1) Number of plants issued more than 0 electricity certificates for each year.

2) Number of plants issued more than 0 electricity certificates.

3) 1,875 wind power plants consisting of 2,285 individual turbines.

Source: Svenska Kraftnät's accounting system (Cesar); Swedish Energy Agency

Table 6.2 Number of plants, installed capacity and expected electricity mean annual production per energy source during 2012 in Norway

Energy source	Number of plants	Installed capacity [MW]	Expected mean annual production [GWh]
Biofuel	0	0	0
Solar	0	0	0
Hydro	150	256	799,3
Wind	2	4,6	15,8

Source: NVE

Table 7. Phasing-out of plants (installed capacity) during 2012–2027

Energy source	2012	2014	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Biofuel [MW]	2 685	209	1	40	44	151	144	59	417	132	484	214
Solar [MW]	0,008	0	0	0	0	0,028	0,007	0,267	0,060	0,458	0,375	1,339
Hydro [MW]	479	4	17	18	6	19	54	19	48	22	71	173
Wind [MW]	128	249	34	62	62	59	243	251	361	558	735	809
Total [MW]	3 293	462	52	120	112	229	441	329	827	713	1 290	1 197

Source: Cesar, Swedish Energy Agency, Norwegian water resources and energy directorate

Table 8. Phasing-out of plants (electricity production capacity) during 2012–2027¹

Energy source	2012	2014	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Biofuel [GWh]	6 647	943	3	39	122	567	574	70	1 357	356	58	989
Solar [GWh]	0,040	0	0	0	0	0,023	0,010	0,221	0,053	0,243	0,358	1,167
Hydro [GWh]	1 896	14	83	73	18	94	311	77	179	74	248	491
Wind [GWh]	262	545	60	135	134	112	655	634	973	1 523	1 945	2 137
Total [GWh]	8 805	1 502	147	247	273	773	1 540	781	2 509	1 954	2 251	3 618

1) For wind, hydro and solar, the expected mean annual production is shown. For biofuel, an annual average for the electricity production entitled to electricity certificates over the last two years is shown.

Source: Cesar, Swedish Energy Agency, Norwegian water resources and energy directorate

Table 9.1 Cancellation of electricity certificates during 2003–2012 in Sweden

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Electricity with quota obligation [TWh]	63,3	97,4	97,6	97,1	96,0	94,0	90,6	98,0	92,5	91,0
Exempted electricity in electricity-intensive companies [TWh] ¹	37,8	40,6	40,9	40,5	42,8	41,6	36,5-37,4	39,7-40,6	40,3-41,3	~ 42,3 ²
Quota	0,074	0,081	0,104	0,126	0,151	0,163	0,170	0,179	0,179	0,179
Number of cancelled electricity certificates [million]	3,5	7,8	10,1	12,4	14,5	15,3	15,4	17,5	16,5	16,3 ³
Quota obligation fulfilment [%]	77	99,2	99,9	99,9	99,8	99,96	99,99	99,99	99,8	99,95
Quota obligation fee [SEK/each]	175	240	306	278	318	431	470	402	310	298
Total quota obligation fee [MSEK]	182,8	14,4	3,1	2,3	8,3	2,3	0,7	0,8	9,5	2,6

1) A new regulatory framework for electricity-intensive industry was introduced on 1 January 2009

2) In 2012, the exempted quota obligation for electricity-intensive industry with a declaration obligation corresponded to 40.8 TWh. Exemptions for industry with no declaration obligation amounted to approximately 1.5 TWh.

3) These figures may be changed slightly, as an option for the Swedish Energy Agency to decide to cancel more electricity certificates than stated in the declaration was introduced on 1 January 2012. The surplus number of electricity certificates are registered as locked and cancelled or given back to the owners once the decision has come into legal force. Source: Act (2011:1200) concerning Electricity Certificates; Cesar; Swedish Energy Agency.

Source: Act (2011:1200) concerning Electricity Certificates; Cesar; Swedish Energy Agency

Table 9.2 Cancellation of electricity certificates in 2012 in Norway

	2012
Electricity with quota obligation [TWh]	79,4
Electricity exempted from quota obligation [TWh]	37,3
Quota	0,03
Number of cancelled electricity certificates [million]	2,4
Quota obligation fulfilment [%]	99,97
Quota obligation fee [NOK/each]	267,8
Total quota obligation fee [MNOK]	0,22

Source: LOV 2011-06-24 nr 39: Lov om elsertifikater, NECS, NVE

Glossary

Cancellation of electricity certificates entails an electricity certificate being returned to the government from the account of the market participant with a quota obligation (Cesar in Sweden and NECS in Norway). When an electricity certificate is cancelled it is used up and cannot be sold or used to fulfil the quota obligation again. Cancellation is done on 1 April for the quota obligation of the previous year.

Cesar is the electronic accounting system for electricity certificates used by Svenska Kraftnät. In order to be issued, buy and sell electricity certificates, an market participant has to have a certificate account with Cesar.

Declaration by market participants with quota obligations in Sweden shall be submitted to the Swedish Energy Agency no later than 1 March for the previous calendar year. The declaration shall state the amount of electricity sold, electricity used and any deductions, for example electricity usage in electricity-intensive manufacturing processes, auxiliary power, free power and electrical losses.

Declaration of electricity production in Norway from biofuel and peat shall be submitted to Statnett no later than the 10th of the month following the production month. The declaration shall state the proportion of each fuel out of the total energy input.

Declaration of electricity production in Sweden from biofuel and peat shall be submitted to Svenska Kraftnät no later than the 15th of the month following the production month.

The declaration shall state the proportion of each fuel out of the total energy input.

Electricity certificate is an electronic proof issued by the Norwegian or Swedish government that one megawatt-hour (MWh) of renewable electricity has been produced in accordance with the Swedish Act (2011:1200) concerning Electricity Certificates or the Norwegian LOV 2011-06-24 No 39: Act concerning Electricity Certificates respectively.

Electricity-intensive industry has an electricity certificate cost only for that part of the electricity not used in the manufacturing process.

Electricity producer with entitlement to electricity certificates is the owner of a plant producing electricity from renewable energy sources and peat . The plant shall be approved by the Swedish Energy Agency or NVE respectively for the allocation of electricity certificates. By being approved by the electricity certificate system, the producer is issued one electricity certificate per megawatt-hour of electricity producer and measured.

Electricity production with entitlement to electricity certificates is electricity produced from renewable energy sources (and peat in Sweden) that comply with the requirements of the Swedish Act (2011:1200) concerning Electricity Certificates or the Norwegian LOV 2011-06-24 No 39: Act concerning Electricity Certificates respectively.

Electricity supplier is a market participant supplying electricity that it or someone else produces. Apart from those companies that have electricity supply as their main objective, market participants such as property companies that deliver electricity to their customers may also be included in the concept.

Expected mean annual production is the estimated annual production of electricity from renewables under normal operational circumstances.

Forward contract is a purchase agreement intended to be completed at a set time in the future at a price set when the contract was entered into.

Industrial back-pressure power production is a combined heat and power plant within industry used to produce process steam (heat) and electricity simultaneously.

Combined heat and power production (CHP) is the use of a thermal process, for example a steam boiler, for the combined production of electricity and heat.

NECS is the electronic accounting system for electricity certificates used by Statnett. All market participants with a quota obligation in Norway must have their own account with NECS.

Renewable energy sources are those flowing energy sources that are recreated constantly through the impact of the sun on Earth and on nature. They are therefore called renewable. Water, wind and wave power are flowing energy sources, as is tidal energy. Biomass is regarded as a solar-based energy source, and is therefore also a renewable energy source, as is solar power of

course. In addition to these energy sources, there are also geothermal energy sources, whose source is the interior of the Earth.

Spot contract is a contract at market price where the electricity certificates are transferred from the seller to the buyer within one week.

Statnett manages the national grid for electrical power in Norway and has system responsibility for the Norwegian electricity supply. Statnett is the authority managing the accounting system for the electricity certificate system in Norway and is responsible for the accounting system NECS.

Svenska kraftnät (SvK) manages the national grid in Sweden for electrical power and has system responsibility for the Swedish electricity supply. SvK is the authority managing the accounting system for the electricity certificate system in Sweden and is responsible for the accounting system Cesar.

Quota obligation is the obligation to hold the right number of electricity certificates on 1 April each year in relation to the market participant's sales or usage of electricity during the preceding year.

Quota obligation fee must be paid by the market participant with a quota obligation that does not cancel the number of electricity certificates corresponding to its quota obligation. The fee is calculated per electricity certificate that has not been cancelled and amounts to 150 per cent of the volume-weighted average price of electricity certificates during the period as from 1 April of the calculation year up to and including 31 March the following year.



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Photo: www.sxc.hu

Since 1 January 2012, Sweden and Norway have had a common market for electricity certificates. Electricity certificates provide support to producers of renewable electricity. A common market for electricity certificates means that the renewable resources can be used more efficiently than if the countries were to work individually.

The annual report for the electricity certificate market is published by the Norwegian Water Resource and Energy Directorate (NVE) and the Swedish Energy Agency. With this publication, the NVE and the Agency wish to provide statistics relating to the electricity certificate system and increase the understanding of how the system works.

The publication A Swedish-Norwegian Electricity Certificate Market - Annual Report 2012 is also published in Norwegian and Swedish. You can download them or order them from www.energimyndigheten.se or www.nve.no