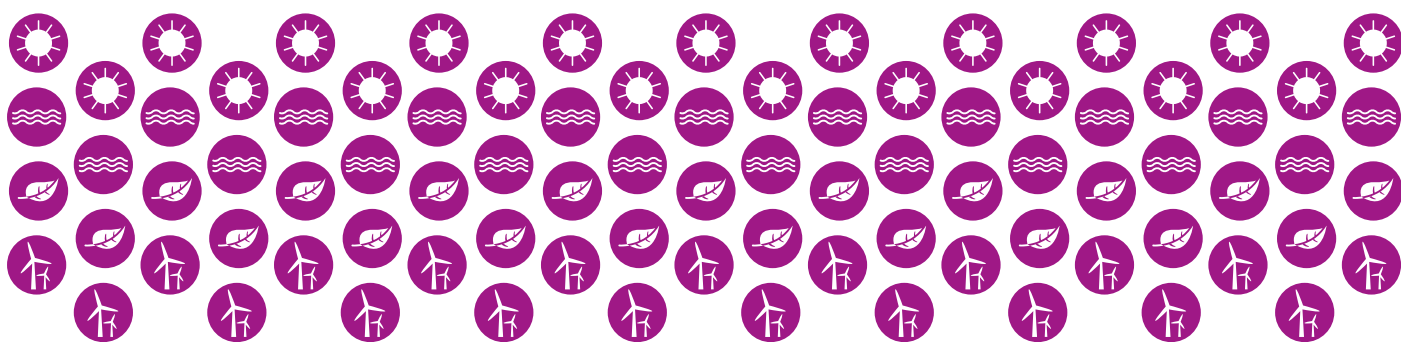


The Swedish-Norwegian Electricity Certificate Market

ANNUAL REPORT 2019



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Preface

This publication is the joint annual report of the Swedish Energy Agency and the Norwegian Water Resources and Energy Directorate (NVE) on the Norwegian-Swedish electricity certificate market. In the report, the two agencies aim to provide a picture of the most important events and key figures relating to the electricity certificate market in 2019.

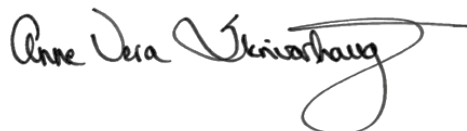
Sweden and Norway have had a common market in electricity certificates since 1 January 2012. It is based on the Swedish electricity certificate market which has been in existence since 2003. The joint target set by the two countries is to develop 28.4 TWh of new renewable electricity production through the electricity certificate system by the end of 2020. Sweden has committed to financing 15.2 TWh and Norway 13.2 TWh. Sweden also aims to increase renewable electricity production by an additional 18 TWh by 2030. The market will determine where and when the new production will take place.

More information about the electricity certificate system is available on the web sites of the agencies involved (see appendix 3).

The project managers for the annual report were Fanny Norén at the Swedish Energy Agency and Lars Fredrik Petrusson at NVE.



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Key figures for 2019

The tables below summaries the relevant figures for the electricity certificate market in 2019. Analysis and further details on the content of the tables are presented throughout this report.

Key figures – Goal fulfilment and issued electricity certificates 2019	Norway	Sweden
Expected renewable annual production for plants included in the joint electricity certificate target [TWh]	10.5	23.9
Issued electricity certificates [millions of electricity certificates] ¹	10.4	27.5
Electricity certificates issued to plants included in the joint electricity certificate target [millions of electricity certificates]	7.7	17.9
Electricity certificates issued to plants not included in the joint electricity certificate target [millions of electricity certificates]	2.7	9.6

Key figures – Cancellations in 2019	Norway	Sweden
Cancelled electricity certificates [millions of electricity certificates]	14.0	27.9
Quota-relevant electricity consumption [TWh]	83.0	91.5
Quota obligation [%]	17.1	30.5
Quota obligation fee	NOK 128 each	SEK 122 each
Volume-weighted average price 1 April 2019 - 31 March 2020 ²	NOK 85 each	SEK 82 each

Key figures – Surplus 2019	Norway and Sweden
Surplus 2019 [millions of electricity certificates]	-1.9
Change since 2018 [millions of electricity certificates]	-4.0

Key figures – Price and trading 2019	Norway and Sweden
Volume-weighted average price of transactions in the electricity certificate registers NECS and Cesar in 2019 (change since 2018) [SEK/MWh] ³	114 (-5)
Average spot price (change since 2018) [SEK/MWh] ⁴	78 (-76)

Key figures – Electricity customers' estimated cost for electricity certificates in 2019 ⁵	Norway	Sweden
Electricity customers' average cost [öre/kWh]	1.8	3.5

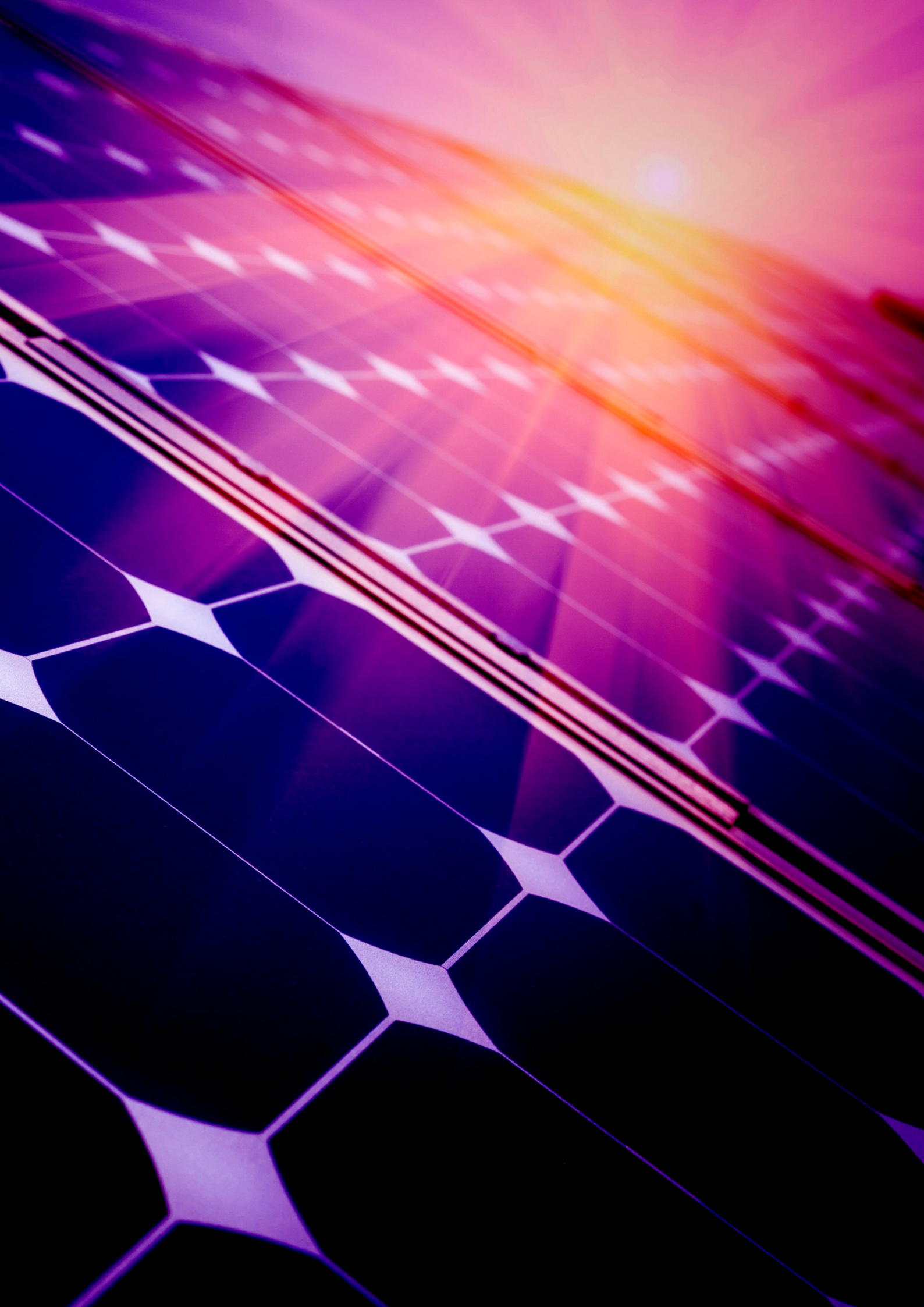
¹ 1 million electricity certificates = 1 TWh of electricity production eligible for electricity certificates.

² Exchange rate at 31 March 2020: 1 EUR = 11,06 SEK = 11,51 NOK.

³ Exchange rate at 31 December 2019: 1 EUR = 10,45 SEK = 9,86 NOK.

⁴ Average of the daily closing prices of spot price contracts at Cleanworld, ICAP, Svensk kraftmäklare in 2019.

⁵ Calculated from the 2019 volume-weighted average price for transactions in Cesar and NECS, excluding VAT and transaction costs.



Electricity certificate market 2019

Goal fulfilment

The joint target of developing 28,4 TWh new renewable electricity production by the end of 2020 was already achieved in May 2019. Sweden's goal of an additional 18 TWh by 2030 can be reached before the end of 2021 if the current development projects are commissioned as planned.

Renewable electricity production and issuing

The Swedish-Norwegian electricity certificate market has, in total, contributed to financing renewable electricity production corresponding to 34,4 TWh between the years of 2012 and 2019. During 2019, new plants in the electricity certification system with an expected renewable annual production of 7,5 TWh were approved. This is the greatest increase in production capacity during a single year since the start of the electricity certification system. New wind power plants represented the largest part of the increase in capacity in both countries.

During 2019, a total of 38 million certificates in Norway and Sweden was issued within both the joint target and each country's transition scheme. The certificates were issued for the renewable energy actually produced during 2019 by plants within the certificate system. Hydro power represented the largest share of the production volume, and therefore the number of issued certificates, in Norway. In Sweden, the largest share of certificates was issued to wind power production.

Cancellation and Surplus

A total of 41,9 million certificates were cancelled in Sweden and Norway for the year of 2019. Market participants with quota obligations were required to cancel these certificates to cover the quota obligated part of their electricity sale or consumption for 2019. In Norway the actual quota-relevant electricity consumption was lower than assumed in the quota curve. However, in Sweden the actual quota-relevant electricity was higher. Therefore, fewer electricity certificates than expected were cancelled in Norway and more than expected cancelled in Sweden.

The accumulated surplus of electricity certificates was, after 2019, reduced to a deficit after this year's cancellation. The total number of issued certificates was lower than the amount of cancelled certificates, entailing a negative result for 2019. The negative surplus within the market was however balanced by issued certificates for electricity production during January and February 2020.

Approximately 0,17 million electricity certificates were not cancelled in Sweden and Norway together. The market participants with quota obligations who did not cancel enough certificates are obliged to pay the quota obligation fee of 122 SEK/MWh this year.

Technical adjustment of the Swedish and Norwegian quotas

During 2019, both Sweden and Norway prepared background information for technical adjustments to the quotas. In Norway, a reduction was established for 2020 while the quotas for 2024 to 2027 were slightly raised. A reduction was also established in Sweden for the quotas for 2020.

The authorities carry out technical adjustments to make sure cancelled certificates correspond to financing obligations for the joint target and the plants included in each country's transition scheme.

Electricity certificate prices

In the beginning of the year the average spot price in the electricity certificate market decreased immensely and reached an all-time low in June. The spot price continued to be low for the rest of the year. In comparison to 2018 the spot price for 2019 was halved.

The average price for forward contracts (March contracts) for 2020 followed the same curve as the average spot price for 2019. Furthermore, this type of contract was the most traded contract among brokers during the period 3 of April 2019 until 31 of March 2020. In comparison to the same period last year the number of certificates traded by brokers was reduced.

The volume-weighted average price of transactions in NECS and Cesar for 2019 was reduced in comparison to last year.

Electricity customers' estimated cost for electricity certificates in 2019

During 2019, the average cost for electricity certificates for Norwegian electricity customers was almost unaltered if compared to the year before. The average cost for Swedish customers was however reduced. The cost can be interpreted as the electricity supplier's estimated costs for electricity certificates that are invoiced to the end customer. It does not include VAT or transaction fees.

Proposition about a Swedish date-based stop at the end of 2021

In the 2019 progress review, the Swedish Energy Agency was asked to analyze and suggest possible stop mechanisms for the electricity certificate system. The overall judgement of the analyze was that a date-based stop mechanism would most accurately follow the basic principles of the electricity certificate system. In the report, the Swedish Energy Agency suggested a date-based stop at the end of 2030, resulting in a stop for approving new plants in the certificate system after the 31th of December 2030. NVE presented the same recommendation to the Norwegian Ministry of Petroleum and Energy.

In March 2020 a proposition was published by the Swedish Infrastructure Department containing a new suggestion of a stop mechanism for the electricity certificate system. The proposal entails an earlier end of the electricity certificate system with a rescheduled date-based stop. In the proposition the Infrastructure Department suggests a date-based stop mechanism by the 31th of December 2021. With the proposed date-based stop plants commissioned after this date will not be granted electricity certificates and the system will be closed after the end of 2035.

The reasoning behind the earlier closing of the system is the fast development of wind power as well as the fact that the target of 18 TWh new renewable electricity production before the end of 2030 is expected to be reached already in 2021. However, if the target is at risk of not being reached the date of closing the system should be moved forward. The target shall be regarded as reached if there is enough margin for deviations from the annual production so that the supply of certificates will not be too small in comparison to the demand over time until the closing in 2035.

As a result of the earlier closing of the electricity certificate system, the same year as Norway, it is suggested in the proposition that the quotas for 2036-2045 are moved to the years 2024-2035. The proposed legislative changes are suggested to enter into force the first of January 2021.



Quotas

Figure 1 shows the quotas for Norway and Sweden from 2003 to 2045. The quotas are fixed for the years 2003 to 2045 and they govern the demand for electricity certificates. The quota obligation means that every year, some operators must obtain and cancel electricity certificates corresponding to a certain proportion of their sale or use of electricity. The quotas represent the percentage, for each year, of quota-relevant electricity sales or consumption for which corresponding electricity certificates must be held by the market participants with quota obligations.



Figure 1: Quota curves for Sweden and Norway (table 4).

Source: Swedish Energy Agency and NVE

Goal fulfilment

Sweden and Norway have had a common electricity certificate market since 1 January 2012. The joint target is to increase renewable electricity production by a total of 28.4 TWh in the two countries from 2012 to 2020. Of this, Norway will finance 13.2 TWh and Sweden will finance 15.2 TWh. Sweden also aims to increase renewable electricity production by an additional 18 TWh by 2030.

Figure 2 shows the expected normal annual production included in the joint target. The expected normal annual production is an estimate of a plant's annual production of renewable electricity under normal operating conditions.

Figure 3 shows the expected normal annual production for plants included in the joint target, by bidding area and energy source.

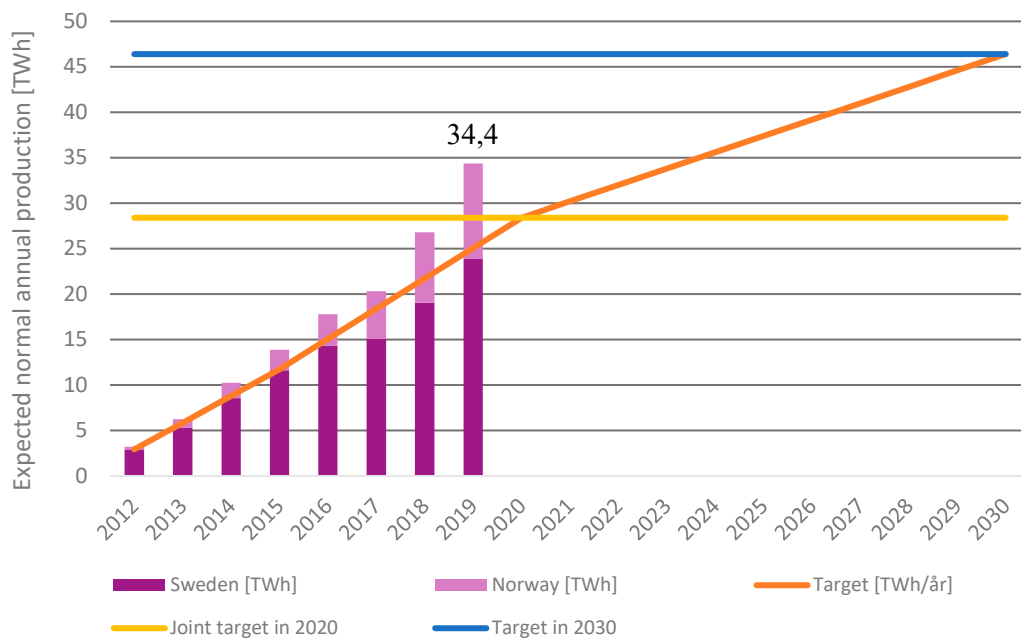


Figure 2: Expected normal annual production in the joint electricity certificate system (table 5).

Source: Swedish Energy Agency and NVE

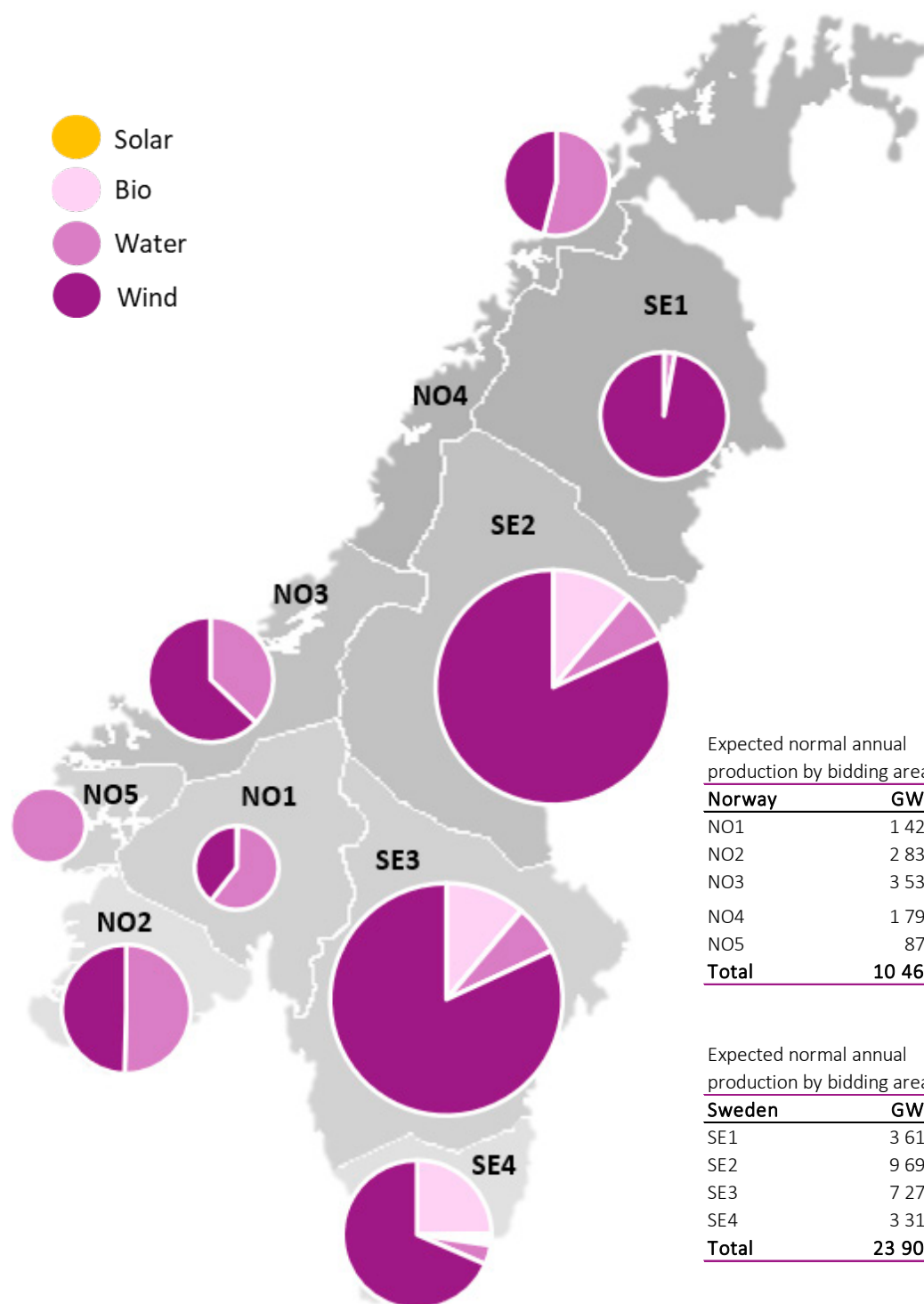


Figure 3: New expected normal annual production for plants included in the joint target, by bidding area (table 6, table 7).

Source: Swedish Energy Agency and NVE



Issued electricity certificates

Electricity certificates are issued on the 15th of each month. They are issued based on the previous month's actual electricity production reported to Cesar and NECS. It is the actual production, and not the normal annual production, that determines how many electricity certificates are issued to the plant. The production that is eligible for electricity certificates varies depending on factors including the weather and operating conditions. Normal annual production, on the other hand, is the estimated production of a plant in normal operating and weather conditions.

Figures 4 and 5 compare the expected normal annual production and the actual production based on electricity certificates issued in Sweden and Norway. Plants are approved regularly during a year. As a result, each plant will not have contributed with a whole production year during its first year of operation. As an example, a plant approved in December will only contribute with production corresponding to approximately a month during its first year. Thus, a disparity between the expected normal annual production and the actual production arise when summarizing each year. Figure 6 shows the electricity certificates issued in Sweden and Norway.

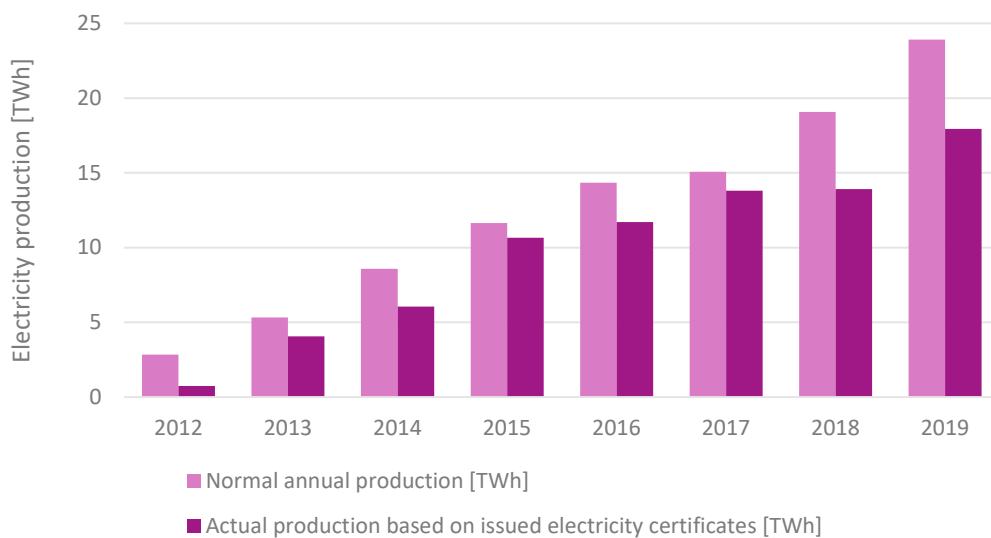


Figure 4: Normal annual production and electricity certificates issued in Sweden (table 12).

Source: Statnett, Swedish Energy Agency and NVE

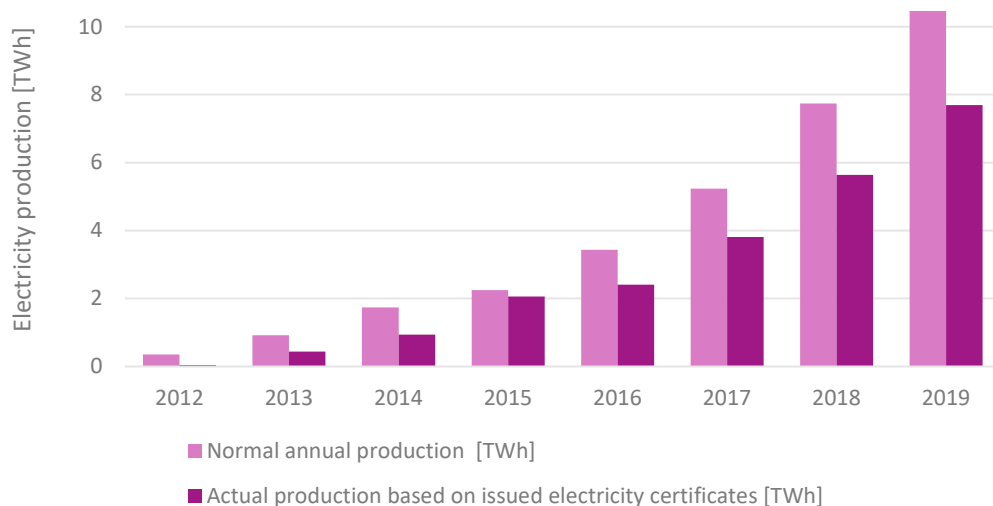


Figure 5: Normal annual production and electricity certificates issued in Norway (table 13)
Source: Statnett, Swedish Energy Agency and NVE

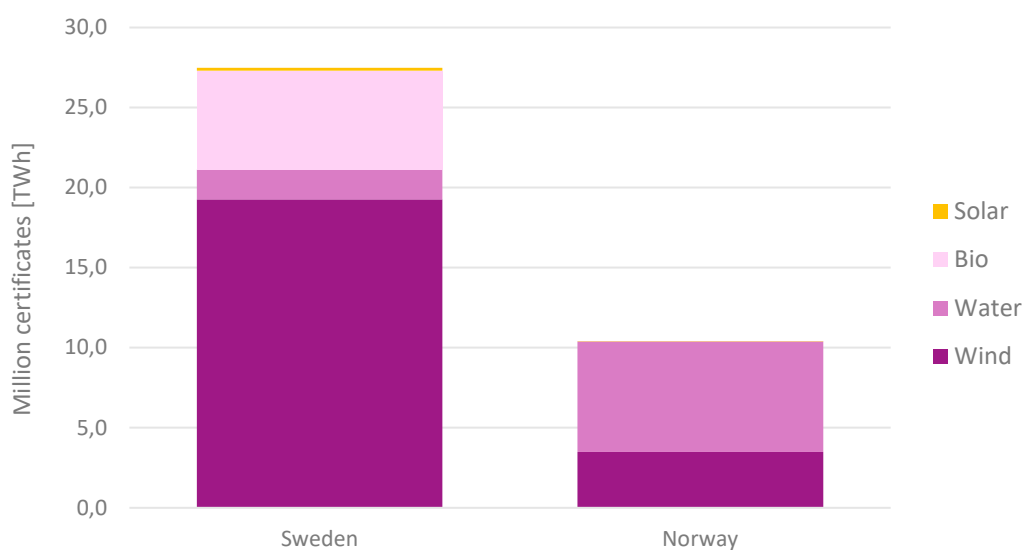


Figure 6: Electricity certificates issued in Sweden and Norway in 2019 (table 13).

Source: Cesar and NECS

Phase-out of approved power plants

The eligibility period of approved plants is 15 years. This means that power plants will steadily be phased out of the electricity certificate system. For Swedish power plants, the eligibility periods began to expire from 2018, and in Norway this will happen in 2020. Tables 1 and 2 show the expected normal annual production that will be phased out each year.

Table 1: Norway - Phase-out of plants (expected normal annual production in GWh).

Year	Biofuel/peat/fossil	Solar	Hydro	Wind	Total
2020			8		8
2021			29		29
2022			51		51
2023			31		31
2024			174		174
2025			527		527
2026			542		542
2027			971	16	987
2028			846	157	1 003
2029			1 365	189	1 554
2030			495	17	512
2031		1	1 175	43	1 219
2032		4	681	1 106	1 791
2033		4	937	1 715	2 656
2034		1	814	1 872	2 687
Total		10	8 646	5 115	13 771

Source: NVE

Table 2: Sweden - Phase-out of power plants (expected normal annual production in GWh).

Year	Biofuel/peat/fossil	Solar	Hydro	Wind	Total
2019	43		43	323	410
2020	125		62	129	316
2021	1 436		150	187	1 774
2022	656		286	546	1 488
2023	161		48	754	964
2024	1 153		130	928	2 212
2025	359	2	69	1 562	1 992
2026	248		113	1 959	2 320
2027	587	1	124	2 104	2 817
2028	394	7	381	1 856	2 639
2029	462	13	59	2 703	3 237
2030	676	23	158	2 252	3 109
2031	867	33	184	1 779	2 863
2032	424	45	113	608	1 189
2033	96	59	68	2 358	2 581
2034	426	120	53	4 327	4 927
Total	8 114	304	2 042	24 377	34 837

Source: Swedish Energy Agency

Cancelled electricity certificates

In order to fulfil the quota obligation, the market participants with quota obligations must obtain electricity certificates corresponding to the statutory quota of their sale/consumption of electricity. The electricity certificates are cancelled on 1 April in respect of the previous year, when they are deleted and cannot be re-used. Cancellation means that the market participants must buy new electricity certificates in order to fulfil next year's quota obligation. This creates a constant de-mand for electricity certificates.

Table 3 and figure 7 present a comparison between predicted and actual cancellations and electricity consumption. The predicted cancellations and predicted electricity consumption are extrapolated from the quota curve for 2019. The actual equivalents are the electricity certificates that were actually cancelled for 2019 and the electricity that was actually consumed during 2019.

Table 3: Cancellations in 2019.

	Norway		Sweden	
	Predicted	Actual	Predicted	Actual
Cancelled electricity certificates [millions of electricity certificates]	14.7	14.0	27.7	27.9
Electricity consumption [TWh]	86.2	83.0	90.7	91.5
Quota obligation [%]	17.1		30.5	
Quota obligation fulfilment [%]	98.83		99.99	
Quota obligation fee	NOK 128 each		SEK 122 each	

Source: Cesar, NECS, Swedish Energy Agency NVE

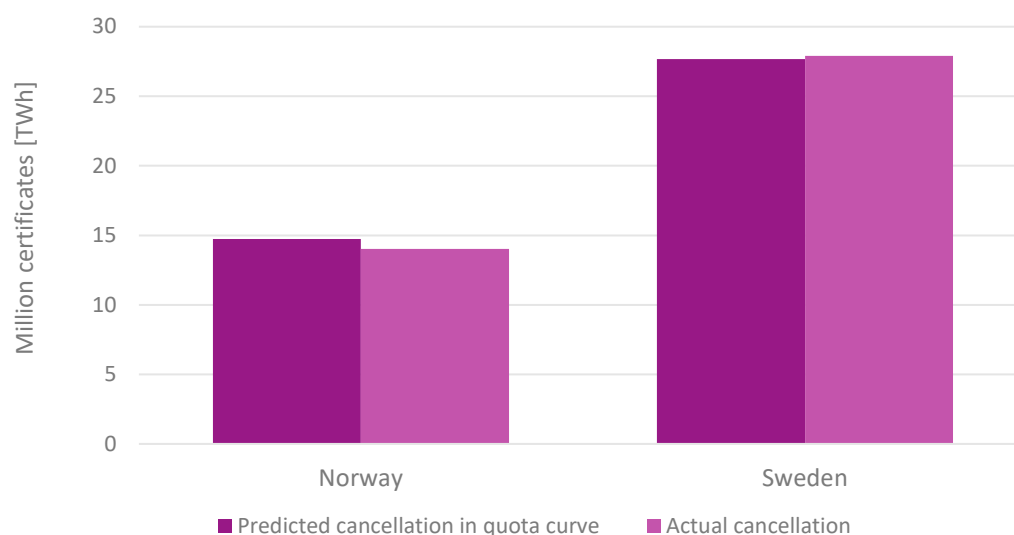


Figure 7: Number of cancelled electricity certificates in relation to the number predicted from the quota curve for Norway and Sweden respectively.

Source: Cesar, NECS, Swedish Energy Agency and NVE

Surplus

The electricity certificate surplus consists of the electricity certificates that have been issued but not cancelled, see figure 8. The surplus increases in years when the number of electricity certificates issued exceeds the demand for electricity certificates. The supply and demand of electricity certificates may differ from year to year due to the rate of rollout and the actual production in relation to the identified demand.

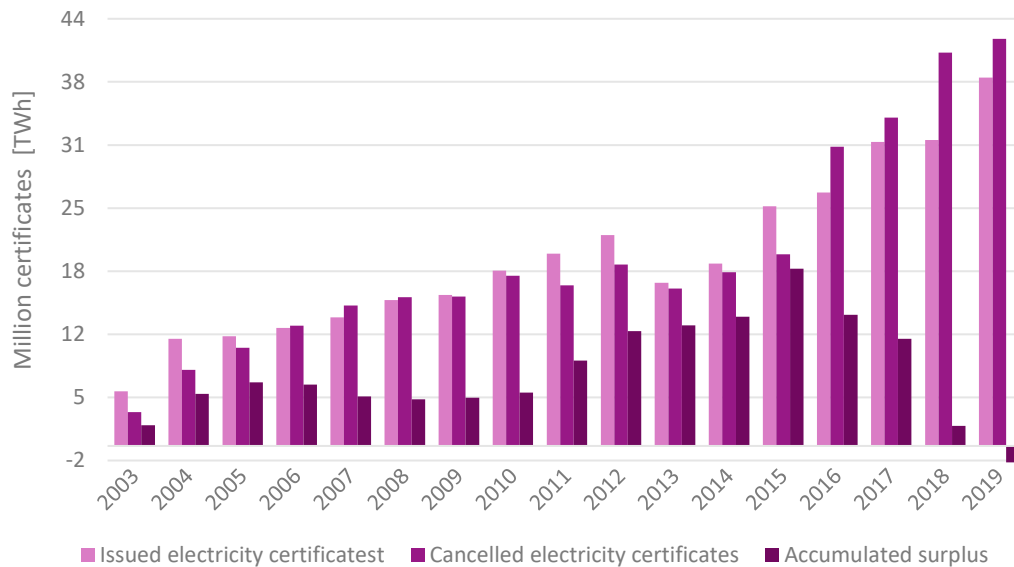


Figure 8: Surplus of electricity certificates with changes over time (table 15).

Source: Cesar and NECS

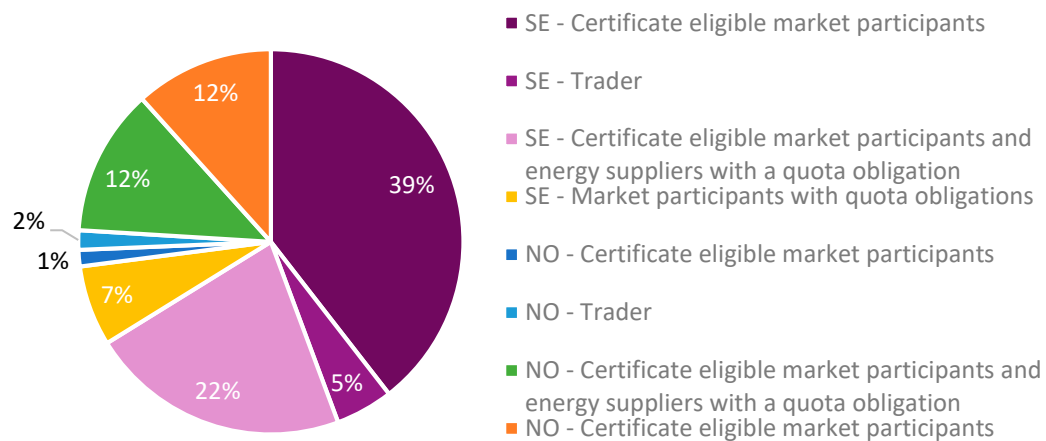


Figure 9: Figure 9 shows how electricity certificates held in different accounts, in NECS and Cesar after cancellation on 1 April 2020, are distributed among different market participants. The volume also includes electricity certificates issued for production in January and February 2020.

Source: Cesar and NECS



Price and trading

Electricity certificates are traded primarily between market participants with quota obligations and market participants eligible for electricity certificates. In addition, there are traders with accounts in the electricity certificate registers NECS and Cesar, which aim to buy electricity certificates and sell them later at a profit. Figures 10 and 11 present average monthly spot prices from different brokers (Cleanworld, ICAP and SKM).

Electricity certificates are traded both bilaterally and through brokers. Two types of broker contract are available in the electricity certificate market: spot price contracts and March contracts. March contracts are available for the next five years, allowing a price to be fixed for the electricity certificates over a longer period. Figure 12 shows trading in electricity certificates by type of contract.



Figure 10: Average monthly spot prices for electricity certificates 2003 - 2019.

Source: Clean World, ICAP and SKM.

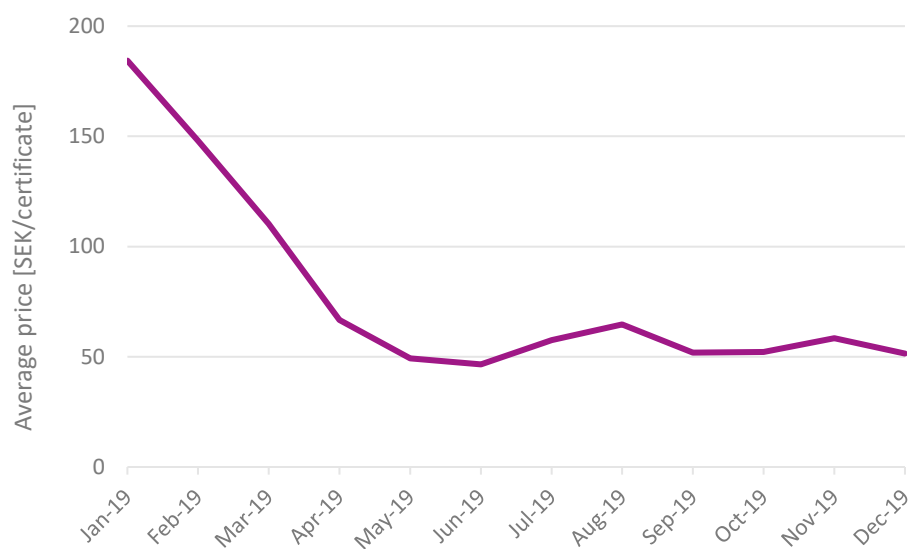


Figure 11: Average monthly spot prices for electricity certificates January 2019 to March 2020.

Source: Clean World, ICAP and SKM

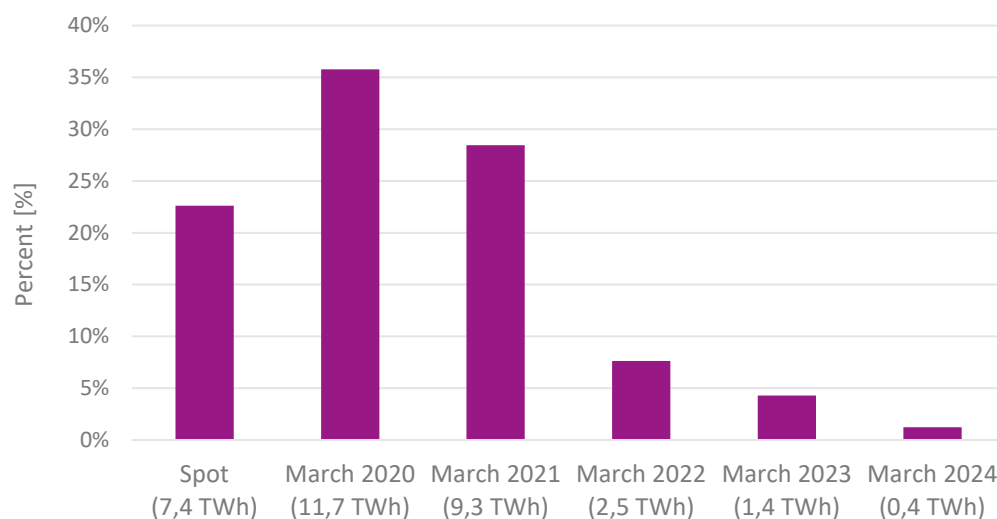


Figure 12: Trading in electricity certificates through brokers by type of contract during the period 1 April 2019 to 31 March 2020.

Source: Clean World, ICAP and SKM

Register prices in Cesar and NECS

The register prices are average prices in the electricity certificate registers Cesar and NECS, figure 13. The average prices presented in the electricity certificate registers Cesar and NECS are volume-weighted average prices of transactions in each register over the relevant time period. The price therefore reflects all transfers between two legal entities during the period. The register price represents a value of electricity certificates over a historical period, weighted according to traded volume in the same period, and it cannot be regarded as a market price for electricity certificates.

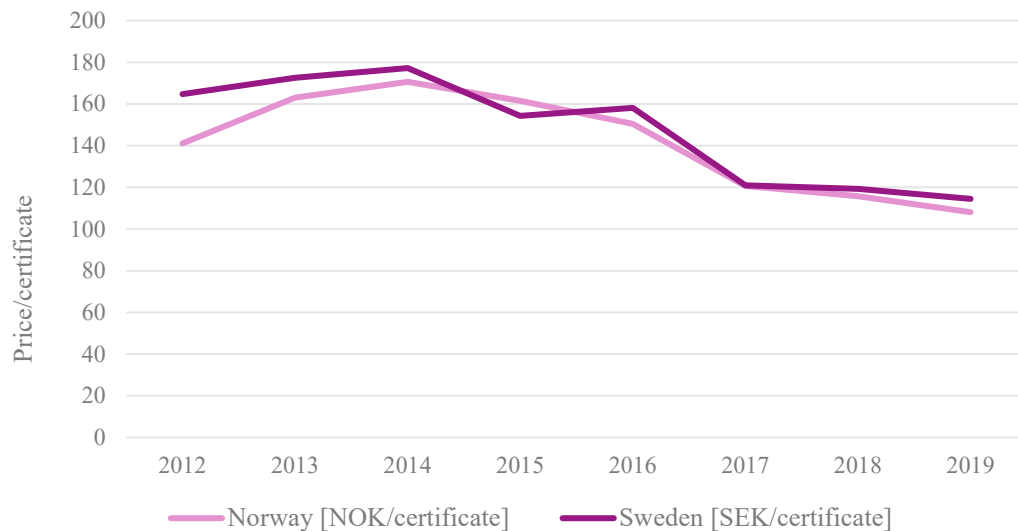


Figure 13: Volume-weighted average price 2012 – 2019.

Source: Cesar and NECS



Appendix 1. Tables

Quotas

Table 1: Quotas

Year	Quota Sweden	Quota Norway	Year	Quota Sweden	Quota Norway
2003	0.074		2025	0.272	0.178
2004	0.081		2026	0.280	0.163
2005	0.104		2027	0.293	0.147
2006	0.126		2028	0.298	0.125
2007	0.151		2029	0.304	0.101
2008	0.163		2030	0.299	0.083
2009	0.170		2031	0.284	0.066
2010	0.179		2032	0.268	0.049
2011	0.179		2033	0.245	0.033
2012	0.179	0.030	2034	0.221	0.016
2013	0.135	0.049	2035	0.206	0.008
2014	0.142	0.069	2036	0.187	-
2015	0.143	0.088	2037	0.176	-
2016	0.231	0.119	2038	0.154	-
2017	0.247	0.137	2039	0.132	-
2018	0.299	0.153	2040	0.110	-
2019	0.305	0.171	2041	0.088	-
2020	0.265	0.186	2042	0.066	-
2021	0.263	0.188	2043	0.044	-
2022	0.267	0.188	2044	0.022	-
2023	0.271	0.187	2045	0.011	-
2024	0.270	0.185			

Goal fulfilment

Table 5: Expected normal annual production of plants included in the 28.4 TWh target at 1 January 2020.

Energy source	Norway	Sweden
Biofuel, peat		4.59
Solar	0.01	0.30
Hydro	5.43	1.12
Wind	5.02	17.90
Total	10.47	23.90

Table 6: Expected normal annual production of plants in Sweden included in the 28.4 TWh target by bidding area [TWh].

Bidding area	Biofuel	Solar	Hydro	Wind	Total
SE1			0.10	3.51	3.62
SE2	1.08	0.01	0.67	7.94	9.70
SE3	2.68	0.20	0.21	4.17	7.27
SE4	0.82	0.08	0.14	2.27	3.31
Total	4.59	0.30	1.12	17.90	23.90

Table 7: Expected normal annual production of plants in Norway included in the 28.4 TWh target by bidding area [TWh].

Bidding area	Biofuel	Solar	Hydro	Wind	Total
NO1		0.01	0.85	0.56	1.42
NO2			1.43	1.41	2.84
NO3			1.31	2.23	3.54
NO4			0.97	0.83	1.80
NO5			0.87		0.87
Total	0.00	0.01	5.43	5.02	10.47

Table 8: Number of plants in Sweden included in the joint target [number].

	2012	2013	2014	2015	2016	2017	2018	2019
Biofuel, Peat	13	23	28	38	44	52	57	66
Solar	62	379	967	2324	4214	6294	9207	14 605
Hydro	9	61	102	137	159	172	186	215
Wind	218	921	770	982	1227	1263	1397	1572
Total	302	1384	1867	3481	5644	7781	10 847	16 458

Table 9: Number of plants in Norway included in the joint target [number].

	2012	2013	2014	2015	2016	2017	2018	2019
Biofuel, Peat							1	1
Solar					3	5	12	15
Hydro	29	74	127	171	240	278	324	350
Wind	2	3	4	5	7	11	18	23
Total	31	77	131	176	250	294	355	389

Table 10: Number of plants included in the transition scheme [number].

	Norway	Sweden
Biofuel, Peat		103
Solar		137
Hydro	391	190
Wind		1133
Total	391	1563

Issued electricity certificates

Table 11: Total number of electricity certificates issued in Sweden and Norway in 2019 (included in the target and the transition scheme) [millions of electricity certificates].

Energy source	Norway	Sweden
Hydro	6.90	1.86
Wind	3.49	19.27
Biofuel		6.17
Peat		0.07
Solar	0.01	0.18
Total	10.40	27.55

Table 12: Actual renewable electricity production based on issued electricity certificates and expected normal annual production (in brackets) in Sweden included in the joint target [GWh].

Year	Biofuel and peat	Solar	Hydro	Wind	Total
2012	174 (773)	0.4 (1)	2 (11)	566 (2 061)	742 (2 846)
2013	742 (986)	2 (7)	76 (424)	3 248 (3 899)	4 068 (5 316)
2014	881 (1435)	9 (18)	454 (534)	4 699 (6 584)	6 043 (8 571)
2015	1367 (2088)	23 (42)	694 (658)	8 577 (8 852)	10 661 (11 640)
2016	1 967 (2 855)	43 (76)	618 (786)	9 080 (10 626)	11 708 (14 343)
2017	2 230 (2 903)	72 (120)	760 (824)	10 747 (11 229)	13 809 (15 076)
2018	2 358 (4 084)	118 (180)	759 (939)	10 668 (13 862)	13 903 (19 065)
2019	3 336 (4 588)	179 (300)	1 007 (1 116)	13 424 (17 898)	17 947 (23 903)

Table 13: Actual renewable electricity production based on issued electricity certificates and expected normal annual production (in brackets) in Norway included in the joint target [GWh].

Year	Biofuel and peat	Solar	Hydro	Wind	Total
2012			40 (342)	3 (16)	42 (358)
2013			397 (729)	39 (185)	436 (920)
2014			717 (1361)	218 (374)	934 (1741)
2015			1712 (1854)	344 (391)	2055 (2252)
2016		0.3 (1)	2052 (3002)	358 (434)	2411 (3435)
2017	1 (0)	2 (5)	3 116 (3 686)	695 (1 540)	3 812 (5 232)
2018	2 (0)	4 (9)	3 692 (4 604)	1 940 (3 130)	5 636 (7 744)
2019	3 (0)	9 (11)	4 201 (5 434)	3 486 (5 023)	7 696 (10 468)

Table 14: Actual renewable electricity production based on issued electricity certificates and expected normal annual production (in brackets) included in the transition scheme [GWh].

Energy source	Norway	Sweden
Biofuel, Peat		2 897 (3 483)
Solar		2 (14)
Hydro	2 701 (3 225)	854 (897)
Wind		5 846 (6 143)
Total	2 701 (3 225)	9 600 (10 537)

Surplus

Table 15: Surplus [millions of electricity certificates].

Year	Issued electricity certificates	Cancelled electricity certificates	Surplus (change/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	16.8	16.2	0.6	12.4
2014	18.8	17.9	0.9	13.3
2015	24.7	19.7	4.9	18.3
2016	26.1	30.8	-4.7	13.5
2017	31.3	33.8	-2.5	11.0
2018	31.5	40.5	-9.0	2.1
2019	37.9	41.9	-4.0	-1.9

Electricity customers' estimated cost for electricity certificates in 2019

Table 16: Electricity customers' estimated cost for electricity certificates.⁶

Year	Volume-weighted average price		Quota		Electricity customers' estimated cost [öre/kWh]	
	Norway [NOK each]	Sweden [SEK each]	Norway	Sweden	Norway	Sweden
2012	141.05	164.73	0.030	0.179	0.4	2.9
2013	162.98	172.65	0.049	0.135	0.8	2.3
2014	170.62	177.24	0.069	0.142	1.2	2.5
2015	161.49	154.34	0.088	0.143	1.4	2.2
2016	150.44	158.15	0.119	0.231	1.8	3.7
2017	120.58	120.93	0.137	0.247	1.7	3.0
2018	115.75	119.31	0.153	0.299	1.8	3.6
2019	108.08	114.47	0.171	0.305	1.8	3.5

⁶ From 2018, the electricity customers' estimated cost for Norway will be calculated in the same way as in Sweden. The electricity customer's cost is calculated by multiplying the volume-weighted average price by the quota.

Appendix 2. Glossary

Term	Explanation
Cancellation	The use of electricity certificates in order to fulfil the annual quota obligation.
Quota obligation fee	A fee that market participants with quota obligations must pay if they fail to cancel the number of electricity certificates corresponding to their quota obligation.
Quota-relevant electricity consumption	Electricity consumption which is subject to quota obligations.
Cesar	The Swedish account management system for electricity certificates. The account management system is an electronic register with details of electricity certificates issued, cancelled and sold. Cesar is operated by the Swedish Energy Agency.
Declaration of quota obligation	Market participants with quota obligations in Norway and Sweden must declare their quota obligation on 1 March each year. In Norway this is based on values reported by grid companies. In Sweden, the market participants with quota obligations make a declaration to the Swedish Energy Agency.
Electricity certificate	Certificate issued by the state confirming that one MWh of renewable electricity has been produced in accordance with the Electricity Certificates Act.
Electricity certificate surplus	The electricity certificate surplus consists of the electricity certificates that have been issued but not cancelled.
Producer eligible for electricity certificates	Electricity producers that are eligible for electricity certificates in accordance with the Electricity Certificates Act.
Electricity certificate quota	Percentage indicating the proportion of quota-relevant electricity consumption for which corresponding electricity certificates must be held by the market participants with quota obligations.
Electricity certificate system	Market-based support system for electricity produced from renewable sources in accordance with the Electricity Certificate Act.
Quota obligation	Market participants with quota obligations are primarily electricity suppliers but also some electricity users. Every year, they must purchase and cancel electricity certificates corresponding to a certain proportion of their sale or consumption of electricity, and this is called the quota obligation.
Renewable Energy Directive	Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.
Renewable electricity production	Electricity produced from renewable energy sources, such as hydro, wind, solar, geothermal and bioenergy.
Progress review	In the progress review, the parties jointly analyze and discuss whether there is any need to change or adjust the rules on electricity certificates.
Quota curve	A curve that shows annual electricity certificate quotas between 2012 and 2035.
NECS	The Norwegian account management system for electricity certificates. The account management system is an electronic register with details of electricity certificates issued, cancelled and sold. NECS is operated by Statnett.
Transition scheme	The transition scheme applies to plants that are eligible for electricity certificates but were commissioned before 2012.
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 set on the agreement date. The agreed number of electricity certificates is transferred between the buyer and the seller within one week of the agreement date.
Technical adjustment	Necessary adjustments to quotas so as to fulfil the obligations in the Electricity Certificates Agreement between Norway and Sweden. This does not involve any target increase.

Term	Explanation
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 specified date in the future. The agreement date and the delivery date are therefore different. The price is set when the agreement is entered.

Appendix 3. Links to information about the electricity certificate market

www.energimyndigheten.se/fornybart/elcertifikatsystemet/

<https://cesar.energimyndigheten.se/default.aspx>

<https://www.nve.no/energiforsyning-og-konsesjon/elsertifikater/>

<https://necs.statnett.no>

A common market for electricity certificates – more renewable energy production

Sweden and Norway have had a common market for electricity certificates since 1 January 2012. The annual report on the electricity certificate market is published by the Swedish Energy Agency and the Norwegian Water Resources and Energy Directorate (NVE). With this report, the Swedish Energy Agency and NVE wish to present statistics for the electrical certificate system and to increase the understanding of how the system works.

This report is also published in Swedish and Norwegian.

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