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**Remiss av Energimyndighetens rapport**  
***Kontrollstation för elcertifikatssystemet 2019***  
(dnr M2018/02927/Ee)

## Summary

Long run marginal cost (LRMC) for renewable energy in Sweden decreased significantly during the previous years. As a result, the price of green certificates has fallen and there are enough investments (as of March 2019) to reach the build-out goals of the green certificate system (46.4 TWh) well before 2021.

*Energimyndigheten* proposed a stop rule that allows projects that are built until 2030 to participate in the green certificate system (GCS). As the build-out goals of 46.4 TWh will be reached 2021 at latest and new projects are economically viable without support from the GCS, the suggested stop rule would lead to a massive oversupply of green certificates and a price collapse. This counteracts the goals of the GCS in several ways:

In proposition 2016/17:179 the Swedish government states that Sweden should implement a stop rule that leads to a balance between supply and demand and prevents a price collapse. The stop rule suggested by *Energimyndigheten* would drastically fail to achieve a balance between supply and demand due to a massive oversupply. The dysfunction of the semi-market-based GCS will deliberately be obtained. This severely damages confidence in Swedish energy market regulation and hinders long term investments.

Furthermore, massive oversupply would lead to very low certificate prices. This deprives early projects that contributed to the goal of 46.4 TWh from most of their income from green certificates, while it generates income to late projects that are built after the goal has been reached. Thus, the suggested stop rule shifts the support from the GCS from early investors who contributed to the goals and depend on subsidies to late investors that neither contributed to the goal nor depend on subsidies.

Ultimately, the GCS will fall short of its initial purpose to support 46.4 TWh and become needless. The certificate price will mainly resemble the bureaucratic and administrative cost of the system itself. Without a purpose there is no logic in carrying the national economic cost of the system until 2045. As a result, new regulations further out in time are presumable. Following, the stop rule suggested by *Energimyndigheten* would fall short of the assignment for *kontrollstation 2019* to create a stop rule that provides predictability. It would also likely be in conflict with the revised renewable energy directive (RED II).

An issuance stop in combination with a date stop 2021 and a shift of the quota curve is better suited to reach the goals of the GCS: the build-out goals will be reached and the system subsidizes those projects that contributed to the goals, while excluding those that were built after the goals were reached. Finally, it enables a functioning market in balance and sustains confidence in Swedish energy market regulation, securing a positive investment climate for further renewable energy infrastructure.

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## **1 The city of Zurich's role and ambition in the Swedish wind market**

### **1.1 A public utility with an ambitious sustainability agenda**

Elektrizitätswerk der Stadt Zürich (ewz) is a service department of the city of Zurich. The ownership through the city of Zurich and, ultimately, the people of Zurich, provides ewz with a strong mandate for ambitious sustainability targets. Following, ewz has regularly been rated as the most sustainable energy provider in Switzerland by the Swiss Federal Office of Energy.

### **1.2 Long-term investment focus**

In 2009 and 2017 ewz was mandated by public votes to invest in renewable energy production in Switzerland and abroad to strengthen the role of renewable energy in the European electricity grid. For that we are producing renewable heating, cooling and electricity in our focus markets Switzerland, Sweden, Norway, Germany and France. Thus, ewz values strategic long term investment over short term profits and plans to be present and create value in its focus markets in the long run.

### **1.3 Sweden as a focus market**

In 2015 ewz invested in the Windpark portfolio Atlantic in the Swedish electricity price zones SE3 and SE4. Our aim is to significantly enlarge our existing portfolio in Sweden. For that we are working closely with local energy companies.

Political stability and our confidence in Swedish Energy Policy are arguments that distinguish Sweden from other European countries with ample wind resources and are among the main reasons why ewz made Sweden one of its focus markets.

However, these advantages are at stake. We deem the suggestion by Energimyndigheten, which is in fact no functioning stop rule, as a breach of the announcement that a functioning stop rule should have been implemented in time (see chapter 2). The suggestion of Energimyndigheten will ultimately lead to a dysfunctional certificate market which is troubling our strong confidence in Swedish Energy Policy.

## **2 Goals of the green certificate system and assignment for a stop rule**

The Swedish-Norwegian GCS has the goal to finance 28.4 TWh in new renewable power production in Norway and Sweden until 2020. In 2016 Sweden set an additional target to finance 18 TWh until 2030 within the GCS. In total Sweden and Norway will finance 46.4 TWh. Furthermore, the system shall be

- a) market-based, the price shall be determined by the shortfall of power prices to cover the LRMC of the marginal project to fulfill the goal,
- b) cost effective, the goal shall be reached by realizing the most efficient projects,
- c) technology neutral, small scale hydro, wind, pv, biomass and peat projects are allowed to compete in the market.

In its proposition from April 2017 regarding *kontrollstation 2017* (Prop. 2016/17:179)<sup>1</sup> the Swedish government states that a stop rule needs to be implemented because the absence of a stop rule will lead to an oversupply of green certificates and consequently to a price collapse (page 34 in the proposition). Further, the government explicates that such a stop rule should a) lead to a balance between supply and demand, and b) prevents a price collapse. Accordingly, Energimyndigheten states in its own report (ER 2016:19)<sup>2</sup> that a stop rule should be implemented to avoid supply to overshoot the goal (p. 8). Following, in December 2017, Energimyndigheten was given the assignment from Miljö- och energidepartementet to propose a stop rule for the GCS that supports the build-out goal of 46.4 TWh and leads to predictability for the market actors (Regleringsbrev för budgetåret 2018 avseende Statens energimyndighet, M2017/00599/Ee, page 7)<sup>3</sup>.

### 3 State of the market

Since the start of the Swedish-Norwegian GCS, the market has evolved and changed dramatically. It is close to delivering the build-out goals of 46.4 TWh.

#### 3.1 Prices

The prices in the market have been volatile but are generally sinking. This was due to

- a) technological development and lower turbine costs,
- b) the development of a highly professional and competitive wind industry,
- c) regulatory uncertainty (control stations, lack of stop mechanism),
- d) and weather patterns (amongst others).

In the long run, the price trend clearly points downwards (see Figure 1). This downward trend resembles the technological development and the maturing of the industry, and, thus, the sinking LRMC of renewable energy production.

The forward prices with delivery in year 2021 and later experienced a sharp price drop with prices heading closer to zero. At this stage the market anticipates the stop rule suggested by Energimyndigheten, which leads to an imbalance between supply and demand until the end of the system in 2045. This is the main explanation to the low prices from 2021 and forward rather than because new wind power can be built without subsidies.

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<sup>1</sup> <https://data.riksdagen.se/fil/F4545440-E08E-4808-9F61-4D726C0DB8F1>

<sup>2</sup> <https://energimyndigheten.a-w2m.se/Home.mvc?ResourceId=5587>

<sup>3</sup> <https://www.esv.se/statsliggaren/regleringsbrev/?RBID=18595>



Figure 1: Elcertifikat spot price with according trend line and forward prices (Data source: Reuters)

### 3.2 Investments

According to the quarterly market report by Energimyndigheten<sup>4</sup>, approximately 26.8 TWh have been built under the GCS while 21.8 TWh are under construction as of the end of 2018. For an additional 4.5 TWh the final investment decision has been taken. Thus, already as of early 2019 there are enough investments to reach the goals of 28.4 TWh and 18 TWh respectively. It is highly likely that enough projects will be in operation to fulfill the goals before the end of 2021.

### 3.3 No dependence on certificates for new investments

As a result of lower LRMC, new wind power projects can be built without the income from green certificates. Thus, there is a long pipeline of projects that can be built subsidy-free under current market-conditions. This ensures a continuous future build-out of wind power in Sweden even in the absence of subsidy systems.

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<http://www.energimyndigheten.se/globalassets/fornybart/elcertifikat/marknadsstatistik/kvartalsrapport-nr-4-2018.pdf>

## **4 Consequences of the suggested 2030 date stop**

### **4.1 Massive surplus and prices close to 0**

As laid out in chapter 3.2, the goals of the GCS will be reached within the next years (very likely before 2021), while renewable energy investments in Sweden will continue, even in the absence of subsidies, due to low LRMC. Under the 2030 date stop suggested by Energimyndigheten future projects, that are not dependent on income from green certificates, will be able to join the GCS until 2030, long after the goals of 46.4 TWh are reached. This will result in a massive surplus of green certificates from 2022 until the end of the system in 2045. This surplus will lead to very low certificate prices until the end of the system in 2045.

The current forward market prices confirm the impact of the suggested stop rule: from 2021 and onwards prices are on all-time lows (see Figure 1), as the goal of 46.4 TWh will have been reached by then. In anticipation of the stop rule currently suggested by Energimyndigheten, market actors do not expect a functioning market in balance and, following, expect no significant value for green certificates.

### **4.2 A dysfunctional market with the sole purpose of sustaining itself**

With a massive surplus, the market will become dysfunctional. The certificate price will be completely decoupled from the shortfall of power prices to cover the LRMC of the projects to reach the goal (which was the intention of the system). Instead, the certificate price will resemble the shortfall of power prices to cover the LRMC of a project being built in 2030. This shortfall will be close to zero as projects for which investment decisions are taken now are deemed profitable even without income from the GCS.

In practice this means that the certificate price will solely resemble the cost of running the GCS (bureaucratic and administrative cost) until the end of the system in 2045. The system will fall short of its initial purpose to subsidize 46.4 TWh of new renewable electricity production. Following, the sole purpose of the GCS would be to sustain itself until 2045. In that context there is no purpose in keeping the system running until 2045 and carrying the administrative and bureaucratic costs.

As a result new regulations further out in time are presumable. This leads to uncertainty for market actors. Ultimately, the stop rule suggested by Energimyndigheten fails the assignment to propose a stop rule that leads to predictability for market actors. Moreover, this severely damages credibility of Swedish Energy Policy and confidence in Swedish energy market regulation and hinders long term investments.

It would also likely be in conflict with the revised renewable energy directive (RED II) where renewable energy directive states the importance for member countries to guarantee the proper functioning of national support schemes in order to maintain investor confidence (§22 and Art. 6)<sup>5</sup>.

### **4.3 Shift of subsidies towards projects that do not contribute to the goal**

After the goal will be reached (very likely before 2021), Energimyndigheten's suggestion will allow new projects to participate in the GCS until 2030. This means that for a period

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<sup>5</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=SV>

of almost 10 years, projects that neither contributed to the goal nor need subsidies in order to take a positive investment decision will profit from the GCS nonetheless. On the one hand, this benefits projects that neither depend on subsidies nor contribute to the goals. On the other hand, projects that are dependent on subsidies and contributed to the goals will lose most of the support from the GCS. Thus, the suggested stop rule shifts subsidies from the GCS from early investors that contributed to the goals to late investors that did not contribute to the goals.



## **5 Suggested Alternative: Issuance stop in alignment with build-out goal**

Bodecker Partners and Svensk Vindenergi suggest an alternative stop rule. ewz supports their suggestion. The stop rule is based on the following main elements:

### **5.1 Issuance stop**

The total demand for green certificates is set by the goal of 46.4 TWh in yearly production and reflected by the respective quota curve. Over the lifetime of the GCS, the demand will be 696 Mio. green certificates<sup>6</sup>. In order to ensure a functioning market and a system in balance between supply and demand, the issuance of green certificates to Swedish projects shall be stopped as soon as 696 Mio. green certificates have been issued<sup>7</sup>. According to the forecast from Bodecker Partners the issuance stop will be effective around 2028 (in combination with the date stop 2021 as described below).

### **5.2 Date Stop 2021**

The issuance stop is to be combined with a date stop for new investments to enter the GCS until the end of 2021. Thus, only projects in Sweden that start commercial operation until 31. December 2021 will be eligible for green certificates. With this ruling, Swedish projects will profit from the same timeframe to join the GCS as projects in Norway. A date stop 2021 will also hinder new projects not needing support from certificates from entering the system.

### **5.3 Shift of quota curve**

The date stop in 2021 allows a shift of the quota curve and an earlier end of the system. Concretely, the demand from years 2036 to 2045 shall be preponed and added to the years up to 2035. By that, the lifetime of the system can be shortened without changing the overall balance of supply and demand.

### **5.4 ewz supports an issuance stop in alignment with build-out goal**

We support an issuance stop in combination with a date stop 2021 and a shift of the quota curve for it will help reach the goals of the GCS as compared to the date stop 2030 suggested by Energimyndigheten. Our determination is based on the following arguments:

- a) The issuance stop is the most exact mechanism to ensure a balance between supply and demand. A system in balance will ensure a functioning market until the end of the system as it was announced by the government proposition and Energimyndigheten in *kontrollstation 2017*. This sustains confidence in Swedish Energy Policy and supports a positive investment climate for future renewable energy investments.

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<sup>6</sup> [13.2 TWh (goal Norway) + 15.2 TWh (goal Sweden) + 18 TWh (goal extension Sweden)] \* 15 years.

<sup>7</sup> As Norwegian projects will presumably not be subsequent to that ruling, a forecast on the Norwegian certificate issuance until 2035 is needed in order to calculate the correct issuance stop date for Swedish projects.

- b) The bureaucratic effort to implement an issuance stop is limited and reasonable, as issuance of green certificates is already now tracked and published.
- c) The GCS will finance the goal of 46.4 TWh through a price that is determined by market forces and by balance in the system.
- d) The date stop 2021 ensures that the subsidies from the GCS will benefit those projects that contributed to the goal and based their investment decision on an income from the certificate market. Investors that do not contribute to the goal and do not rely on an income from green certificates to take an investment decision will not profit from the system.
- e) The system can be closed in a technology neutral manner. As of now roughly 60% of green certificates come from wind power, 25% from small scale hydro power and 15% from biomass power plants.
- f) The shift of the quota curve shortens the lifetime of the system. This has the advantage to increase predictability for all market actors and reduces the bureaucratic and administrative effort for the system.

Thus, the goals of the GCS will be reached while the system will remain with a purpose. The implementation of a stop rule that ensures a system in balance, as it has been called for repeatedly by the government and Energimyndigheten, will strengthen confidence in Swedish Energy Policy and energy market regulations. This will put Sweden on the right track to reach its very progressive target of 100% renewable energy until 2040. For these reasons, we strongly advise against the suggestion of Energimyndigheten and in favor of the issuance stop laid out above.

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