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Energimyndigheten
Gredbyvägen 10
Eskilstuna
Sweden

01/03/2018

Synpunkter inför Kontrollstation 2019

Dear Sir or Madam:

This letter serves as Aquila Capital's response to Energimyndigheten's request for comment on the 2019 Electricity Certificate Control Station. Aquila Capital welcomes the opportunity to comment on the future elcert system given our significant investment in Sweden's renewable energy sector.

Our decision to invest in Sweden's renewable energy sector was based on Sweden's longstanding economic and regulatory stability, as well as the economic characteristics of each particular investment. The economic rationale of our investment decision was, amongst others, based on the principal of a functioning elcert system to make up for shortcomings in the market power price. Although Sweden enjoys a strong wind resource, the market electricity price was not enough to support our investments. The fundamentals of the elcert scheme are now at risk and jeopardizing our investment thesis for our current and importantly any r future investments in Sweden. For this reason, Aquila Capital would like to highlight our position on the stop mechanism in the text below.

Introduction to Aquila Capital

Aquila Capital together with its affiliates forming the Aquila Group was founded in 2001. Aquila Group is headquartered in Hamburg, Germany and is a leading European provider of alternative and real asset investments with approximately EUR 6.1 billion assets under management (Dec 2017).

As fiduciaries we act in the best and long-term interest of our, mainly, institutional investors' base, taking into account economic, ecological, social and ethical issues. Real asset investments, in particular investments in wind, solar and hydro assets, belong to our core capabilities.

Investments in Sweden

Since 2014 Aquila Capital has invested or committed to invest approximately EUR 1.1 billion in Swedish wind farms investments. Our firm's interest in Sweden's energy infrastructure provides an expected annual 2.83 TWh of green electricity throughout the country. Equally important, we believe that Aquila Capital's investment has made a positive contribution to the Swedish renewables industry by creating jobs through contracting the development, engineering and construction as well as the technical and commercial management with local parties. We estimate that our current portfolio of eight Swedish entities, which are holding and operating the wind farms, will lead to aggregate corporate tax payments of approximately EUR 444 million within the first 25 years of the wind farms' operation to the Swedish state.

Aquila Capital has successfully concluded:

Wind Farm	Region	Size	Developer & EPC Contractor	Year
Valhalla (Amot-Lingbo, Tönsen)	Ockelbo	357 MW	OX2	2017
Kraktorpet	Sundsvall	163 MW	Eolus	2017
Nylandsbergen	Sundsvall	68 MW	Eolus	2017
Lehtirova	Norrbotten	156 MW	OX2	2016
Högkölen	Hogskolen	246 MW	OX2	2016
Atlantic (Alered, Mungseröd, Ramsnäs & Skalleberg)	South Sweden	62 MW	Eolus	2014

Based on Aquila Capital's current and expected future contribution to Sweden´s economy and the accomplishment of its ambitious renewables built-out, we welcome that Energimyndigheten gives recognition to our perspective.

A stable and predictable elcert value is not only relevant for the economics of our current investments, but will also be a decisive factor for our future investment decisions in Swedish wind power.

Stop mechanism

Aquila Capital has given thoughtful consideration to the imminent elcert value problem and engaged with Thema Consulting Group to evaluate the issue and to run analysis for the different possible stop mechanism options (date stop, volume stop, a combination of date and volume stop, prolongation of the system without stop mechanism). The analysis presented in the Thema memo is based on Thema's proprietary software-based elcertificate model which utilizes a wind database from more than 400 wind projects spread across Sweden and Norway. In close consultation with Thema and together with other market participants as mentioned in the memo, we have developed our position and have signed the Thema Elcert Memo 2018-02 in full support. Please find the memo attached hereto as appendix.

In summary, we propose three measures to be taken in the upcoming control station 2019:

1. Introduction of a volumebased stop mechanism including the introduction of a transparent and generally binding information source, where market participants can be informed about the status of the targeted build-out;
2. Introduction of an adjustment mechanism (i) for wind farms with investment decision made before the steep elcert value drop in January 2017 (grandfathering) and (ii) for wind farms expected to be commissioned after 2021 (=initial term of the elcert scheme) in order to reflect expected decrease in capital expenditure for wind turbines; and
3. For the sake of clarity: Bringing the measures mentioned under 1 and 2 in effect as soon as possible and in any case before 2020.

Introduction of a volume based stop mechanism

The elcert scheme was conceptually introduced to balance shortcomings in power prices and to stabilize the cash flows of wind farm. This provided comfort to our investment committee and was a staple of our investment thesis. Unfortunately, elcertificate prices have been lower and more volatile than expected and have followed the downward movement in the power market. It is our opinion that elcert prices could be supported and provide that much needed stability if regulators had the tools to actively manage the volume.

At the beginning of 2017 – following the Montel conference at Gardermoen in Norway – the elcert prices dropped significantly as market participants became aware that the initial Swedish-Norwegian build-out target of then 28.4 TWh is likely to be overshot before the initial end date of the elcert scheme in 2020. And

as a result, concern for the reliability and functionality of the elcert scheme grew. The value drop also showcased that a sheer date stop mechanism is not sufficient to stabilize elcert value.

Sweden's welcomed decision to phase-out nuclear power, prolong the elcert scheme and significantly increase the build-out target by 18 TWh has helped to prevent a greater downward price movement. Aquila Capital believes it is imperative that mechanisms are instilled to prevent a similar situation that occurred in early 2017. The significant gap in value between March 2019 and March 2020 elcert forwards to March 2021 and March 2022 elcert forwards (source: http://www.skm.se/priceinfo/) is a clear indication of uncertainty related to the elcert stop mechanism.

According to Thema, a date stop or a combination of a volume and date stop is not suitable to stabilize the market but will lead to an "*(…) unstable market where prices could collapse or alternatively skyrocket*".

Based on Thema's assumption of (i) increasing power prices, (ii) decreasing costs for wind turbines and (iii) ongoing low financing costs (mainly influenced by interest rates), Thema concludes that we will likely see a similar situation that led the 2017 elcert devaluation.

As onshore wind is a long term investment (investment horizon of 30 years) and macro conditions can be considered but not fully predicted, consideration of other conditions must be given in particular to (i) if the prognosis of increasing power prices would turn out not be correct and (ii) if the assumed costs decrease in capital expenditures for the turbines is not taking place to the assumed extent or this effect is eaten up by even faster increase of interest levels, i.e. an increase in the financing costs, the build-out targets for the elcert scheme with a sheer date stop mechanism might not be met. This again would lead to very high elcert prices and costs for the Swedish consumer.

Aquila Capital strongly believes that it is desirable for the Swedish government to assert control over the elcert scheme and the targeted renewables build-out volumes. We therefore strongly encourage the Swedish government to exercise greater control over the elcert scheme in order to be able to respond to varying market conditions.

In our view a volume stop mechanism should be implemented that restricts new projects from being awarded elcerts once the total targeted build-out volume of 46.4 TWh in a normal wind year has been reached. We firmly deem that elcert prices can only be kept positive, relatively stable and predictable if Energimyndigheten has sufficient control over the elcert scheme and the achievement of renewables build-out. Also, Thema's analysis concludes, that "*(…) it seems clear that a volume based stop rule is the only option securing stable market conditions and re-establishes trust in the elcertificate market.*"

Introduction of an adjustment mechanism

In trust of a well-functioning elcert system, many parties invested in Swedish wind parks in the early stage of Sweden's renewable support scheme. Those pioneers were mainly local utilities, private investors and farmers rather than financial investors like today. Unfortunately, the pioneer investors are the ones hit the most by the current low elcert prices and it may be fair to say that a weakness of the system is, that it's not rewarding the initial investors.

In our view, three groups of investors affected by elcert prices need to be distinguished:

1. Pioneer investors who made their decision to invest in Swedish wind assets before the elcert value disruption in January 2017;

2. Current investors, who decided to invest in Swedish wind after the elcert value disruption in January 2017 and Sweden's decision to prolong the elcert scheme and to introduce a stop-mechanism; and

3. Future investors, who will decide to invest in Swedish wind after the details of stop-mechanism are released by the Norwegian and Swedish government.

In support of pioneer investors, who suffered the biggest losses due to the 2017 elcert decline, we propose the introduction of a grandfathering adjustment mechanism for projects which had the investment decision before January 2017. Such projects should get a certain multiple of elcerts per MWh produced (e.g. 1.1).

Second, for current investors, the status quo should be kept: Projects, which had the investment decision after January 2017 and Sweden's decision to prolong the elcert scheme and to introduce a stop-mechanism, should receive one elcert per MWh produced as currently stipulated.

Finally, to balance-out the pioneer investor support and to account for the probable future decrease of capital expenditures for wind technology, the elcerts projects owned by future investors should be eligible for a decreasing factor of eclerts per MWh produced (e.g. starting with a factor of 1.0 and then (annually) going down to 0.99, 0.98, 0.97, 0.96 etc.).

Awarding elcertificates when the power price is zero or negative

As zero or negative power prices are undesirable from a macroeconomic perspective we argue to introduce an incentive for the wind farm operators to disconnect their wind farm from the grid in times of a zero of negative spot price. This can for example be archived if the elcerts for the loss of production are awarded retroactively to such wind farms, which stop feeding into the grid in such times of zero or negative spot prices.

Adjustment of rules for awarding Electricity Certificates after major refurbishments

We suggest treating major refurbishments, which do have the character of complete new installations, as a new installation. However, this should not apply to necessary refurbishments of wind turbines in order to ensure a safe and efficient operation of the respective wind farm.

Market transparency

We do however also recommend that some sort of prequalification process is established so that investors know if they will be awarded elcerts at the time the investment decision is made. This requires the introduction of a transparent and generally binding information source, where market participants can inform themselves about the status of the targeted build-out.

In concluding, we would like to express our appreciation to Energimyndigheten for the opportunity to comment on what we consider to be the most important factor affecting our current and future energy infrastructure investments in Sweden today.

We look forward to working with Energimyndigheten on this important topic and would be delighted to explain our position in further detail at your convenience.

Sincerely,

Dr. Dieter Rentsch
Co-Founder

Roman Rosslenbroich
Co-Founder