INTERVIEW

Price area differences and effect on Nordic wind power

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How have the Swedish and Norwegian price areas changed during the last year and months, and what are the main reasons?

The Swedish as well as the Norwegian price areas have undergone one of the most turbulent periods in 2020-21 pricewise since the creation of the areas. We have for several years been aware of the bottlenecks and lock-in effects related to power flow from the north of Sweden to the south due to the delayed commissioning of the South-West Link – but 2020 saw the most persistent price area differences to date, both in terms of time and size of absolute price differences. This came because of the historically high hydrological surplus throughout 2020, whereby the continuously high hydro power production in combination with grid bottleneck did not reach south Sweden, particularly SE4.

"Yearly SE4 price differences at 15 euros"

The spot price area difference on an annual average basis between SE4 and SYS (or SE1 & 2 for that matter) ended up at €15/MWh – which beat all previous years' differences by far. These spot price differences also replicated onto the EPAD (Electricity Price Area Differential contracts as traded on Nasdaq) market, which during 2020 and 2021 were significantly more volatile and priced at "record distance" from the benchmark SYS products. Cal-2022 SE4 EPAD is currently trading in the range €18-20/MWh, whereas the Cal-22 SE1 EPAD hovers around -€7/MWh, i.e. the market expects that the price area differences will remain and even increase (€27/MWh difference on average) between north and south Sweden for the full year 2022.

"New phenomenon in Norway"

Even though the bottleneck and constraint issues have been known for years in Sweden, it on the other hand emerged as a new phenomenon in Norway – where record spot price area differences were noted during 2020-21. Norway also, to an extent, have similar transportation issues with production in the north and bulk of the consumption in the south – and bottlenecks in between. But these were particularly exacerbated throughout the commissioning and test phase of the new NordLink interconnector (to Germany) in late 2020, which alongside existing 3 interconnectors turned out to be the drop that caused the beaker to overflow – meaning a more frequent price coupling to the continental marginal price of power production.

This is particularly interesting as Norwegian price area differences have historically been marginal (as Norway's total hydro power production is the dominating price setting factor for the SYS price as a whole), but 2020 for the first time marked an individual Norwegian spot price are difference larger than €2/MWh on an annual average basis. Like Sweden, the southern Norwegian spot price areas NO1/2/5 have been higher than SYS with €5/MWh on average, whereby NO3/4 lower than SYS with -€9 on average.

Although some market nervous tendencies and higher EPAD pricing were noted already in Nov-2019, both volatility and price levels have steadily increased since. Cal-2022 is traded around +€6,60 for southern Norway and -€7,00 for northern Norway. This is a historically high level of pricing for south Norway EPADs, and worth noting that it is well above the mid-Sweden SE3 EPAD (Cal-2022 around €3,00/MWh).

How will the commissioning of additional nuclear capacity in Finland and interconnectors from Norway to the UK influence price areas in the years to come?

The launch of new nuclear capacity in Finland will further improve the Nordic power balance on a total basis, and most likely have a dampening effect on SYS price setting, as well as reduce the occurrence of sustained periods of peak pricing in Finland. However, paradoxically it does not necessarily mean that the spot price differences between Finland and SYS, or Finland and the Swedish price areas will be lower than currently.

The marginal spot price setting in Finland in recent years has through interconnector exports had a high degree of coupling to the high-price Baltic countries. This also occurs whilst northern Sweden exports to Finland. We therefore may see a possible future scenario where Finnish nuclear comes first in the merit order for Baltic exports (as well as domestic demand), which in turn reduces imports from Sweden – leading to further lock-in effects in Northern Sweden (increased price area differences vs. both SE1 and SYS) whilst the Finnish price level is maintained. This scenario is, however, one among several and we have yet to see the impact on the renewables build-out (particularly wind) in Finland, which makes the overall marginal price setting more complex to assess in the years to come.

In general, more interconnectors (regardless of whether from Finland or Norway) are likely to lead to higher price area spot differentials rather than a given higher SYS price.

What are your thoughts on power prices going forward?

I believe that power prices could continue up if current weather situation is held up. There is an underlying "post-pandemic" demand for global fuel that I think will persist. Additionally, there is a very high price for carbon allowances. So, in short, if we get a continued warm summer, as in 2018, more records will be broken, but a rainy and windy proper Swedish summer will be more healthy for consumer´s wallets. If not resident in Malmö...

What should then be considered regarding market placement and risk management of a wind park? Is the SYS price still relevant?

The SYS forward prices are – and will remain – relevant for assessing and managing price risks for a wind park. As the most transparent and liquid (even though this has decreased in recent years) product series on Nasdaq, the SYS contracts will remain as the base benchmark for Corporate and Utility PPAs – as well as providing the main liquidity pool to lay off the bulk of forward price risks in more merchant asset portfolios.

The fact that the SYS price differs from individual price areas actually means that the market indeed works as intended, i.e. providing price signals about the reality of the supply and demand curves – pointing to where we have shortcomings in production or transmission (investment opportunity?).

From a wind park owner's point of view, this does however imply that price area differential risks need to be managed, i.e. through EPADs or price area component in the PPA agreement. In other words, if the wind park owner seeks a hedge structure that both captures the underlying price risk, and passes a hedge efficiency test – then price area risks must be considered. EPAD and price area differential estimates should therefore be included in investment- and PPA strategy discussions on a running basis. Alternatively, if EPADs are omitted in those discussions, an EPAD strategy for managing this exposure on a merchant basis should be formed.

Is there anything else you would like to recommend investors or asset owners regarding reducing risks and securing revenues?

In general terms; to seek an efficient risk management which fulfils the objectives of the investment! As simplistic as this may seem, I often encounter investors who spend a significant amount of time, money, and effort in creating their own price view, as opposed to risk view.

Naturally, there are good reasons for building an internal understanding of the Nordic market fundamentals and price formation, particularly related to the valuation of an asset – but not to assess whether the market should go up or down the coming week (the Nordic market will always go up and down...)! In other words, time spent on finding "the right answer" for where the absolute price level is should instead be spent on time understanding the variability in spot prices and its effects on forward and PPA volatility. Understanding and managing this volatility – which often is many times larger than any capture rate risks – is key.

From a portfolio advisory perspective, we therefore often tend to recommend a diverse set of market instruments and PPA products, as well as several counterparties and varying operative setups to ensure we protect investors' interest as risk-optimal and cost-effective as possible. ■