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VIK-response

CEER Consultation (C09-SDE-14-02a)

„Regulatory aspects of the integration of wind generation in European electricity markets“

VIK, the German association of energy intensive consumers represents 350 companies for which gas and electricity are essential basics for their production and which are heavily dependent on competitive energy prices. VIK agrees that renewable energies, including wind energy, play an important role in the future electricity market. However, the task to integrate intermittent power-generation such as wind energy in the balance-system of the public grid is an increasing major challenge for the system operators. Most importantly, support systems need to be designed in such a way that they promote cost-efficient technologies, assist them on their way to marketability and avoid unnecessary costs for consumers.

While the design of support mechanisms mainly is a task for governments, other challenges concern questions which are to be dealt with (exclusively or additionally) at the level of national and European regulators. In this respect it is important that the integration of more and more wind energy into the market does not lead to distortions and erratic price movements – consumers need competitive prices and also visibility on prices. Moreover, the integration of wind energy into the grid needs to be managed in a way that makes the most efficient use of the existing grid capacities and avoids unnecessary grid expansion. And in such cases when new lines have to be built or existing ones need to be expanded, this must be done at lowest possible costs. Only if consumers – households and companies alike – are not burdened with high energy costs caused by wind energy (or other renewables), renewables can create or maintain the necessary acceptance in public.

Question 1: How will the expected growth in wind generation affect the markets in which you operate? What are the key challenges you foresee?

In Germany, wind power enjoys a feed-in guarantee in connection with a fixed feed-in tariff. From January 2010, the wind power injected into the grid is to be sold by the TSO to the day-ahead market, by way of an unlimited order. This means that wind power has a heavy influence on the day-ahead market price. Thus the volatility of wind power

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translates directly into price volatility, which hampers predictability and long-term visibility of prices.

Moreover, high wind generation may lead to negative prices: At times of high wind power production and low demand, conventional generators are offering their output at prices below zero to avoid costs associated with adjusting their generation. Based on this, negative market clearing prices are resulting. This has two detrimental effects to consumers:

- First, with negative prices, it is profitable to increase one's own electricity consumption, thereby earning money. But in order to increase one's consumption at short notice, a certain degree of flexibility is needed – in terms of technical ability (e.g. depending on the production process) as well as in terms of the organizational structure (e.g. trading on week-end days or during nighttimes). It is questionable whether consumers exhibit such a degree of short-term flexibility. Probably, traders may be able to capture these profits, but it is unlikely that these profits will be passed through to the customers.

- Secondly, every consumer in Germany pays a surcharge to cover the additional costs of support for renewable energies. This surcharge is calculated from the difference of the feed-in payments (paid to the wind power generators) and the revenues from the sale of the wind power at the day-ahead market. With negative day-ahead market prices, this surcharge increases. In 2010, it is as high as 20 €/MWh - this is roughly 40% of the current wholesale energy price - and is expected to rise to more than 33€ in 2015.

As wind power is fed into the grid when the wind blows, not at times when electricity is needed, incentives are needed for wind operators to store electricity and inject it when demanded.

Another challenge concerns the usage of the grid: At times congestion occurs, and as a consequence, conventional power production needs to be reduced or even generating units need to be shut down. If combined heat and power production is concerned this is very inefficient and endangers the production processes of companies that need the heat and power generated by their CHP plant.

Moreover, as big wind farms are expected to be built offshore, the transmission grid probably needs to be expanded to accommodate increasing wind power injection. This causes high costs (which will be passed through to consumers via higher grid tariffs) as well as problems of acceptance within the population. Authorization procedures for new

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lines may well require ten or more years, making it difficult to manage increasing wind power injection today.

Question 2: What are the implications for market rules? Can you identify changes which would better facilitate integration of wind generation, including management of intermittency?

There is a need for incentives to improve direct marketing by producers, along with incentives for power production or injection at times when demand is high (and prices are high), instead of today's rule that every kWh produced is paid the same fixed feed-in tariff. This could increase research into the problem of power storage, or could incentivize cooperation between an intermittent generator and a generator who can actively manage its production (e.g. biomass plant).

Question 3: Would moving the market's gate-closure closer to real-time facilitate the deployment of wind generation? Would this have any adverse consequences on the functioning of the electricity power system?

Such a change would move day-ahead transactions closer to the intraday timeframe. Since wind forecasts are more accurate at short term, this could facilitate wind integration into the market. Negative consequences on the functioning of the electricity power system are not expected.

In this regard, transparency is important: The wind forecast should be made publicly available to all market parties, in advance of the gate closure, so that all market participants possess the same information and thus act on a level playing field.

Question 4: Are emerging cross-border congestion management models compatible with wind generation? Should further attention or priority be given to intraday capacity allocation mechanisms and markets, in light of the issues associated with forecasting wind generation?

As long as there are capacity bottlenecks between countries or markets, scarce capacity should be used for commercial trade and scheduled cross-border deliveries. If capacity was reserved for possible wind surplus, this would limit commercial transactions. Therefore it seems preferable that the production of wind is limited (by the TSO/DSO) or stored (if possible) at times when it cannot be integrated in the market.

Question 5: Should wind generation be subject to the same balancing obligations and the same types of charges as other types of generation?

Wind generators should be treated in the same way as conventional generators. If balancing may be more difficult for wind generators, then support regimes (tariffs or premiums) might be adjusted to cover additional costs. Generally, charges should be

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structured to favour users who are good at forecasting their demand and suppliers who can manage their portfolios.

Question 6: Should TSOs engage in research and development (R&D) to address issues associated with a large share of wind generation included in the network? If so, how should the regulatory framework require or support this?

R&D in this field seems to be necessary. R&D-support should be given by governments for projects covering such issues, regardless of whether this research is conducted by TSOs or other parties.

Another area for R&D could be to develop technical solutions which enable “green” electricity generators from e.g. biomass, water or wind to produce, in close cooperation, base-load or mid-load products as demanded on the market.

Question 7: Should wind generators face the same types of network charges as other new generators, calculated using the same methodology? What is needed to provide a sufficient incentive for generation in choosing where to locate? What is needed to provide an appropriate balance of risk among market players? When should this not be the case?

All kinds of generators should be equally treated. Special locational signals for wind power are not necessary, when the support scheme is appropriately designed: Expected market prices, expected wind and information about expected grid congestion should be enough for every generator to decide where to locate.

Question 8: Broadly, what is the appropriate allocation of responsibilities, risk and cost among market players in developing new network infrastructure (e.g. ahead of or in response to new generation connections)? Should this be different for wind generation? Where is harmonization required?

A common network development model is needed on national and regional, perhaps on EU level, which is based, among other aspects, on expected wind generation (or generally: expected generation) investments. In the short term, wind-caused congestion may be solved e.g. by temporarily shutting down turbines of wind based electricity generation.

Question 9: Do you agree that the “supergrid” issues for regulators identified in 5.1 are relevant? Is there anything else European regulators should be considering?

Since governments aim at strongly increasing the wind power installed offshore, a European or North-Sea supergrid is an important issue. And since it is a multilateral one, in the absence of a European regulator there is a need for European regulators to

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cooperate with each other. This is also important since such a supergrid may not only serve to integrate offshore wind farms into the existing grid, but also to link and integrate national markets. Therefore, issues such as: who should build and own the supergrid, how can it be financed (grid fees?), how can it be managed and operated, are of importance. In this process, attention should be paid to the fact that the costs must be kept to the necessary minimum.

Generally, grid connection costs for newly built wind farms should be borne by the operator of the wind farm.

Question 10: Is the current ownership structure of the offshore lines or their regulatory framework a potential issue for the integration of offshore network? Are there other considerations affecting this ownership structure?

Since offshore-cables may form a “supergrid”, which could integrate national markets, they should be treated as a grid and thus be owned and operated by TSOs.

Question 11: Do you agree that the Regional Initiatives should be used to address the issues associated with the development of the regional projects? What challenges does this present?

An exchange of views and information within the Regional Initiatives probably could facilitate the process of integrating the offshore wind farms into the grid, since planning could be coordinated.

Question 12: What other issues should European regulators consider in relation to the integration of wind generation?

Generally, it is necessary that electricity prices in Europe are kept at an acceptable level to ensure global competitiveness for European industry. Increasing wind power generation needs to be efficiently integrated in the grid and must not hamper the development of a competitive integrated European electricity market.

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