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CEER

By email: wind@ceer.eu

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CEER Consultation: Regulatory aspects of the integration of wind generation in European electricity markets

Dear Sir, Dear Madam

I refer to your December 2009 consultation on the regulatory aspects of the integration of wind generation in European electricity markets.

Centrica welcomes the work of CEER assessing the regulatory aspects for European markets of the expected increase in wind generation and its integration into the wider electricity market. Centrica has experience of the renewable electricity market as a supplier, generator and trader. Its primary market is Great Britain where it is active in both wholesale and retail markets. It is also active in North West Continental markets, focusing on the wholesale trader markets. .

Centrica looks forward to working with CEER and ERGEG as these regulatory aspects are debated further. I trust that you find this response from Centrica helpful. Please do not hesitate to contact me if you would like to discuss any issue raised in more detail.

Yours faithfully,

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CEER Consultation: Regulatory aspects of the integration of wind generation in European electricity markets

A Centrica response

Introduction

Centrica is active in the European electricity market as a supplier, generator and trader. Its primary market is Great Britain where it is active in both the wholesale and retail markets. It is also active in the North West Continental market, focusing on the wholesale traded market. Centrica is committed to investing in renewable electricity generation and is actively involved in this sector in Great Britain.

Below we have set out our responses to the questions raised by CEER in its consultation document.

Questions

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

It is inevitable that the growth of wind generation will affect electricity markets. Nonetheless we remain strongly in favour of markets themselves, and believe that market participants together can develop any necessary changes without the need for government intervention, and thus help to ensure continued supply of electricity to customers.

Firstly the expected growth in wind generation will affect the generation mix of the market. As the volume of renewable generation grows, and wind is expected to form a large component of new renewable generation, the demand for conventional fuels will decline. However as one of the core features of wind generation is its intermittency, the building of wind farms does not remove the need for other generation technologies, notably to serve as backup generation.

Other policy initiatives aimed at a low carbon economy are also expected to contribute to changes in the generation mix. The result is likely to be a decline in oil and coal generation, compensated for by gas firing technologies, with gas not only as a backup fuel for intermittent wind generation but also in its own right as a cleaner more efficient carbon fuel. Nuclear generation is already seeing a resurgent of interest in some Member States, but it is important to note that its characteristics make it less suited to serve as peak, backup generation than other conventional sources that can react much more quickly to changes in demand.

Secondly the increased volume of wind generation will affect the system itself. For example the intermittent nature of wind generation is expected to lead to high system balancing cost to the system operator. This in part will be driven by the management of system constraints. Conventional generators bid in at a price linked to the fuel cost they will save if they happen to be constrained. Wind farms however

face different economic costs. In fact if they do not operate when possible they will lose out not only on revenue from the energy produced but also on the revenue raised from producing renewable certificates (where such support programmes are in place). Thus the existence of these renewable certificates lead wind generators to demand payment in return for turning down when the system operator requires less power on the system for the purpose of managing constraints, providing reserve response etc. As the volume of wind generation increases, the need for one or more windfarms to be turned down increases and the payment for them to turn down will drive up system balancing costs.

Another example will be changes to the merit order, with conventional plants running less frequently. The displacement of conventional plants due to the growth in wind will impact the economics of these existing stations. Whilst the life of the station may be prolonged as it is operated for fewer hours, running the plant less frequently will alter its cost profile, profit margins etc, However, less frequent running of the plant could also result in reduced performance and reliability, which could lead to increased pressure on market prices.

The growth of wind generation will also have an impact on market prices. With high wind speeds, the price of wind generation will be low; whereas when wind speeds are low, the price is high. An increased volume of wind generation will therefore contribute to lowering the average market price which wind generation can command.

A number of factors are therefore likely to impact prices and this could lead to uncertainty about future returns, which are a key component in investor decisions not only about building new generation plants but also about whether to keep existing plants on the system as backup.

Of course, the growth in wind generation is not the only development in the electricity market. The third energy liberalisation package will result in major changes such as transmission unbundling and harmonised network codes at European level. Other issues such as the desire for increased market coupling will lead to increased use of interconnectors (both existing & new) and greater integration of national markets. This will lead to discussions about gate closures (see below) and transmission charging arrangements. Thus wind generation is only one factor that will lead to changes to electricity markets.

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 will inevitably be implication for market rules if the expected volume of wind generation is built. Many of these issues are addressed later in the consultation such as trading rules, congestion management and balancing.

Among the options that regulators may wish to consider for dealing with the intermittency characteristics of wind generation is allowing trading beyond the timescales that may currently be permitted. For example, intra day trading can be beneficial in markets where the current liquidity focus is on the day ahead market, not least in that it enables traders to make use of updated and more accurate forecasts for wind generation. Ex post trading (after the final physical position is notified) could be a good tool to reduce imbalance exposure of counterparties.

This must be done in a way that is compatible with the balancing regime of the market concerned. To a certain degree this would level the field in relation to the unpredictable output of wind farms.

Another option that may be considered in some markets is centralised dispatch of wind generation. There are a number of advantages of central dispatch for this type of generation, though the details of the arrangements would be crucial as there are many practical issues to consider. The netting of forecasting and dispatch volumes could reduce the overall imbalance costs, which can be beneficial for investor decision making.

In time, the need to deal with wind intermittency could help drive industry developments such as smart grid or demand side solutions e.g. electric vehicles that could be charged when there is excess wind.

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

Gate closure close to real time delivery enables traders to take advantage of a greater amount of information about both demand and supply, thus diminishing the impact of wind forecasting errors. The market in Great Britain has gate closure set at 1 hour; this is among the shortest in Europe, but it has not had an adverse impact on security of supply. The main question about reducing this timeframe yet further is whether it can be done at reasonable cost. Among other considerations are whether a shorter timeframe would offer sufficient time for the system operator to act on residual balancing needs for the system.

In most other markets, the gate closure is considerably longer. Centrica would support the harmonisation of gate closure across Europe, with the markets with long lead times reducing these over time.

It is also important to note that we support consistent gate closures for all types of generation. Whilst some have suggested that renewable power should face different gate closure times to conventional generation due to the intermittency of renewable output, we believe that other mechanisms can be used to address this issue. Intra day trading should be encouraged to move the focus of liquidity closer to real time, and this can assist intermittent generators which suffer from forecasting errors. Another option that may be possible in some markets to help manage the intermittency impact on the system is ex post trading. This sees the market participant continuing to fix its physical position vis-à-vis the system operator at gate closure but allowing trading with other counterparties to remove imbalances and thus reduce imbalance exposure.

Shortening gate closure times to reasonable length is not the only tool to facilitate trading of renewable power. Of importance too is the level of information that is available to the market prior to gate closure. It is important that information needed by market participants is published in a timely and transparent manner prior to gate closure. One example of where this does not currently occur is Germany, where predictions for wind generation volumes are published after gate closure, disadvantaging those traders without wind assets in the country.

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?*

Increased interconnection should help accommodate an increased volume of wind generation in the European electricity market.

The main problem for wind generation in the proposed congestion management models is that liquidity in many European markets is concentrated at the day ahead stage. This is not well suited for wind generation due to forecasting difficulties. We would therefore encourage greater use of intra day capacity allocation. Trading closer to real time, as stated above, improves the quality of data available to market participation and reduces the impact of wind forecast errors.

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

Centrica believes that all similarly sized generators should be subject to the same balancing obligations and balancing charges.

If wind generators were to be subject to special dispensation, the question would need to be answered as to how costs should equitably be funded, which customers should bear the costs and how to avoid market distortion.

Allowing special treatment in the balancing regime could reduce incentives to invest in the tools required to provide more accurate forecasts and reduce balancing costs for all.

Instead we would strongly support that wind generators face the same balancing obligations as similar sized conventional generators thus incentivising them to invest in improved forecasts and behaviour. Accurate forecasts are essential to minimise the cost that the variability of wind has on the electricity system.

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?*

TSOs are in a good position to engage in R&D on the impact of wind generation on the network. The costs of such work, where efficiently incurred, should be recognised in the regulatory costs of TSOs.

As this is an issue that is faced by all TSOs, it may be that TSOs can work together on certain aspects of R&D where issues are shared across borders, potentially through ENTSO. This could reduce the overall costs for customers.

Similarly there is a need for national regulators and ERGEG/ACER to be involved in thinking about the regulatory implications. Potentially they could also be represented on the project boards overseeing R&D effort.

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?*

Access to networks should be provided in a transparent and non-discriminatory fashion. It should also be provided in a way which is cost reflective for all connections regardless of the generation technology, voltage, location, or asset ownership. Furthermore, we believe that it is appropriate that tariffs contain a locational signal in order to ensure that developers consider the cost implications when selecting a location.

As regards the balancing of risk among market players we have some concerns about the difference in the risk faced by onshore and offshore wind generators in the current GB offshore transmission arrangements. Currently the offshore wind generator bears more risk of cable failure than an onshore generator. This is because if the cable fails there is less ability to claim compensation as there is no other route to shore and thus to market. In a cable outage, the generator will therefore lose on the revenue generated from both the energy and renewable certificate, whilst still having to pay transmission charges. We believe that the balance of risk needs to be more equitable.

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 harmonisation required?*

As previously stated, we do not believe that wind generators should be faced with different arrangements from other similarly sized generators. This remains our position when considering the appropriate allocation of responsibilities, risk and costs in developing new network infrastructure.

Network investments do not usually progress without user commitments. The growth of renewable generation is strongly anticipated in the market, not least as there are Member State obligations to be met under the Green Package. This raises the question of whether and how to manage future network investment via user commitment or anticipatory investment or a combination of both. We support the consumer taking some risk of anticipatory investment, thus to be included in network tariffs.

As regards harmonisation of approach, it is perhaps not feasible to expect an identical approach across all Member States given that they are starting from different positions and have different aspirations for the role of wind generation. But we should expect national regulatory authorities to work to anticipate and as far as possible eliminate distortions to the internal market arising from different regulatory treatments.

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?*

The development of supergrids is one way in which Member States can further integrate their national transmission systems and electricity networks. Whilst still a relatively new concept, it is important that regulators are involved in assessing the impact on the national regulatory regimes alongside political institutions and market participants, and that they liaise to ensure a common approach where possible, or at least to minimise regulatory distortions between national markets. As supergrids become closer to reality, regulators will need to respond to the challenge of how to finance such an investment. Is it to be considered only if there are user commitments or should it be treated as anticipatory investment? How can the risk of stranded assets be dealt with? How can free rider issues be avoided?

Another issue for regulatory consideration is how to ensure the compatibility of national offshore transmission arrangements with cross border interconnector rules. The GB market for example currently runs competitive tenders to award offshore transmission licences. It is not clear how these offshore lines would be managed were these offshore transmission assets seen as an optimal way to link the GB market to those of Continental Europe, essentially forming part of a cross border interconnecting network.

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?*

The ownership structures of offshore lines differ greatly between Member States. The majority of countries require the TSO to offer a connection to wind farms if this is requested by the generator.

A notable exception is Great Britain. Here, the arrangements for offshore transmission licences are managed via competitive tenders. This regime predominantly provides incentives for point to point connections and does not appear to envisage or cater for offshore interconnected grids where these might be the best and most efficient outcome. Whilst the tender appoints an offshore transmission operator for a particular project, it is unclear how any additional investment in windfarm zones or in a supergrid plan would be managed and financed, as these could be required on an anticipatory investment basis rather than on the basis of user commitments. This is an issue that will need to be addressed to ensure the interconnectedness of the GB offshore network. The same will be true when considering the interconnectedness of European networks via a supergrid, requiring detailed industry and regulatory discussion as regards responsibilities and cost allocation.

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?*

The Regional Market Initiatives should follow developments in regional projects relating to the integration of wind generation in the EU electricity markets. However it must be recognised that the geographic coverage of the current Regional Initiatives may not always be consistent with the boundaries of regional wind related developments. Other industry initiatives are also involved in regional projects, such as the North Seas initiative and Medring etc. These projects include national governments which is important given the legal issues involve in offshore grid development. It is important that the ERGEG Regional Initiatives do not duplicate the work of other fora but play a supporting role where possible.

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

The integration of wind generation must be included in numerous pieces of work in the near future. For example the ENTSO codes on connection, balancing and capacity allocation will undoubtedly need to consider any specific issues raised by the expected increase in wind generation across many Member States. We look forward to contributing to many of these discussions as they develop.