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Response to CEER's public consultation on the regulatory aspects of the integration of wind generation in European electricity markets

Statoil welcomes CEER's initiative to launch a public consultation summarising the key issues related to market and network arrangements for the integration of wind power in the broader electricity market. This consultation is a helpful contribution to further discussions on the implementation of, as well as the possible tensions between, the EU Renewables Directive and the 3rd Package on the internal energy market.

In particular, Statoil recognises the potential of offshore wind generation in the context of reaching the binding targets set by the Renewable Directives. But as the consultation material correctly points out, the unique features of wind power generation require to address key issues related to the design of the market as well as the network arrangements.

Statoil sees this consultation as an important first step for a further dialogue between European regulators and the different market players. The acknowledgement that there is a substantial difference between the features – and therefore the necessary regulatory arrangements – for onshore and offshore wind is particularly welcome in this respect.

Some aspects of the consultation deserve particular attention, and are outlined below.

Key challenges

- *Q1. How will the expected growth in wind generation affect the markets in which you operate? What are the key challenges?*

Large-scale wind power being a relative new entry in wholesale electricity markets, the most important issue currently faced by wind generators is the need for stable, transparent and predictable **support schemes** for this energy source, so as to provide clear signals to markets. Growth in wind generation, and especially offshore wind generation, will still require in the coming years to be supported by specific regulatory frameworks in order for it to become competitive with the more conventional forms of generation, especially considering that the latter's well

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established presence in the electricity market have largely contributed to shape such market according to their needs.

For this reason, Statoil is more favorable to market-based support schemes, such as the ROC scheme which is in place in the UK. For the moment, due to the disparity of regulatory and market frameworks, as well as of the meteorological specificities of different Member States, Statoil does not believe that support schemes should be harmonised across Europe. Focus should instead be on the harmonisation of market design and network arrangements, this would allow a faster deployment of wind capacity in the different EU Member States.

Moreover, as stressed in the consultation material, one of the key technical challenges associated with wind generation is its **intermittency**. In this respect, Statoil would like to underline the importance of having a coordinated approach when setting a regulatory framework for wind generation, taking into account that the contribution to energy security, which large offshore wind developments will represent, will be naturally complemented by natural gas as its balancing force. As the second largest supplier of natural gas to Europe, indeed, Statoil sees an important role for natural gas in the overall EU energy security picture; in this framework, there is also a potential for combination between wind energy and the use of natural gas as its ideal back-up complement.

As an integrated energy company, Statoil believes that the future EU energy mix will have to rely on different and complementary types of generation. Wind, and especially offshore wind power generation, is going to play a pivotal role in achieving the targets set by the EU in terms of both its climate agenda and its energy security policy. One further necessary step towards this achievement is to recognize that wind generation is one of several forms of low carbon energy, as such the regulatory framework for its deployment should not hinder the deployment of other low carbon sources and technologies.

In this picture, Statoil would also like to stress the importance of connecting the EU markets through more grid interconnectors, especially in the North Sea, in order to make full use of the potential interaction between complementary energy sources.

Electricity market arrangements

- *Q2. What are the implications for market rules? Can you identify changes which would better facilitate integration of wind generation, including management of intermittency?*
- *Q3. 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?*

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- *Q4. 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?*
- *Q5. Should wind generation be subject to the same balancing obligations and the same types of charges as other types of generation?*

Statoil believes that the optimal market design is represented by a balance between market efficiency, security and flexibility.

Flexibility is closely linked with the need of having a market working as closely as possible to real time. The objective difficulty to forecast the proportion of wind generation that will be available even just a few hours forward brings four issues to the fore: Gate Closure Time (GCT), portfolio balancing, priority access, and the role of intra-day markets.

- **Gate Closure Time (GCT).** Statoil fully supports CEER's view that GCTs should be as late as possible. The UK power market, as well as Elbas (Nord Pool's intra-day market), with Gate Closure Time (GCT) of one hour, represent a reasonably efficient example; even though current technology should probably allow for GCTs of even 30 minutes or less. Long GCTs represent a significant entry barrier to wind generation, especially due to the often punitive imbalance penalties, which fail to take into account the difference between human errors and *force majeure*. Moreover, different cross-border GCTs, especially among neighboring countries, may act as a barrier to cross-border trading.
- **Portfolio balancing.** Flexible market arrangements should devise ways for market participants optimize their portfolio depending on the wind conditions after GCT. A wind generator should be allowed to some degree of self-balancing within its own generation portfolio, regardless of location as long as plants are connected to the same system grid. In many cases, indeed, back-up solutions may be available and they may address the intermittency problem at the source, without it hindering the functioning of the entire market. This pre-market solution will acquire a significant value if and when wind power generation will account for important shares of the total energy mix of a Member State. On top of that, self-balancing could help address imbalance situations without betraying the EU internal market principles. Nor would it create a negative incentive towards the research on new technologies aimed at improving the predictability of wind energy, provided that – as is already the case in a number of Member States – wind generation is granted priority access to markets.
- **Priority access.** According to the Renewables Directive, Member States shall provide for priority access to the grid for any electricity produced from renewable sources, subject to requirements related to the maintenance of the reliability and safety of the grid. However, it would be much better – and more in line with the EU internal market rules – if priority dispatch were not a rule of the system, but a logical consequence of the market design. For

example, in the UK, the market arrangements are such that priority is granted to the generation which has the lowest marginal costs of production. Given the low input costs and the subsidy scheme for renewable generators, renewables are almost invariably granted priority. This is an efficient and market-based arrangement, and it should be promoted in other electricity markets across Europe.

- **Intra-day markets.** Intra-day market liquidity should be improved, especially in the light of reducing the risk for wind generators to have to face punitive imbalance charges. This could be facilitated through the introduction of measures such as an automated balancing regime, as in the case of Nord Pool. Similar improvements may also be needed for day ahead markets in many EU Member States.

R&D activity requirement for TSOs

- *Q6. Should TSOs engage in Research and Development to address issues associated with a large share of wind generation included in the network? If yes, how should the regulatory framework require or support this?*

Statoil believes that it could be in the interest of the different market players that TSOs be involved in R&D in order to understand the needs of an electricity system when wind energy becomes a part of it. This would include specification of topics, analysis, validation of results and full scale demonstrations. These R&D efforts should be made in strong coordination with research projects led by other stakeholders, such as public authorities and industry. Moreover, Statoil sees a benefit in coordinating the outcomes of such R&D projects among EU countries and exchange best practices. The incentive that the UK government has put in place for onshore wind R&D projects should be taken as a best practice example, and extended to offshore wind as well as replicated at the EU level.

Network arrangements

- *Q7. 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?*
- *Q8. 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?*

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- *Q10. 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?*

A strong transmission grid, including interconnectors, is a precondition for integrating large amounts of offshore wind power; for meteorological reasons, most wind installations are located far from the existing grid.

National authorities need to **improve authorisation procedures** for network arrangements and coordinate their efforts to develop cross border infrastructure. The complex processes and unpredictable timetables for building and construction authorisations and permission processes in many Member States are a delaying factor for wind developers in their efforts to help Member States reach their 20-20-20 obligations. Statoil supports CEER's view that governments should speed up the processes for building and construction authorisations for transmission lines, including land planning. There is indeed a risk that due to authorisation and consent issues, lead times for developing new network infrastructure would be longer than lead times for constructing new generators.

This issue is linked with the split of responsibility between generators and governments when making network investments. Governments should plan and fund national and bilateral strategic grid developments that are long term and predictable, so as to incentivise investments in new projects, while the rules for interconnection from a specific wind farm to the main grid should allow for developers themselves to take part in the planning process.

On strategic network development, as suggested by CEER, in a number of cases it would be worthwhile considering whether governments should directly fund projects, such as in the case of a North Sea offshore grid.

As regards network investments enabling a power station to connect to the grid, at present the most common arrangement for an offshore wind farm is for the generator to own the wind turbine, the transformer and the sub-sea cables linking the offshore plant to the onshore connection point and to the main grid. In some other countries such as Denmark, Germany, Italy and Sweden, the offshore cables are owned by the TSO(DSOs), while in the UK an OFTO is responsible for the grid from offshore substation to main grid. Statoil believes in any case that the **costs of grid developments can not be supported by the generators alone**, however it is essential that generators have active participation in planning grid solutions and can coordinate the timing with the schedule for construction.

Statoil supports the forthcoming Community-wide regional and national ten-year network developments which should play a role in helping TSOs to consider the different challenges of the

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network. We believe that this Community-wide plan will help relating different national network plans together.

A European Supergrid

- *Q9. Do you agree that the “supergrid” issues for regulators identified in 5.1 are relevant? Is there anything else European regulators should be considering?*
- *Q11. 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?*

Statoil welcomes the fact that the present consultation addresses the regulatory requirements for the development of a European Supergrid, which would lead to the further liberalisation of the EU electricity market. In this respect, it is indeed necessary to address the many harmonization challenges between the differing national policy and regulatory treatments.

Statoil would like in particular to underline the need for developing an “offshore cross-border grid” that would be properly connected to the onshore grid. In this context, Statoil welcomes the consultation’s focus on regional projects such as the North Sea offshore grid. The current work undertaken in the framework of the EU-funded project [IEE Offshore Grid](#) should be used in order to further advance the development of offshore grids. This project focuses on infrastructures and markets requirements for the deployment of an integrated offshore grid both in the North Sea and in the Mediterranean Sea.

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