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The Council of European Energy Regulators
Rue le Titien 28
1000 Brussels
Belgium

CEER consultation on Regulatory aspects of the integration of wind generation

Vattenfall welcomes the opportunity to respond to the CEER consultation on Regulatory aspects of the integration of wind generation in European electricity markets. Wind power is important in order to reach the climate goals, and large scale wind power will – due to its intermittent properties – reshape the power systems. Integrating wind power in the electricity system can be much more efficiently done if wind power is also integrated into the Market. On top of that, market integration in Europe becomes even more important in order to minimize the costs of integrating the wind power in the system.

General comments

The transmission development will be one of the key requisites to reach and secure a long-run sustainable competitive internal electricity market. Thus the Regulators and the Commission should jointly appoint a coordinator with the mission to follow-up on the operations and development of the European transmission grids. One of the main tasks of the coordinator could be to work on best practice for licensing and concessions of infrastructure development projects with some emphasis on grid development necessary to accommodate the 2020-targets.

ENTSO-Es ten year development plan, TYNDP is an ample opportunity to describe the current status of the network. There is a lack of consistent reporting from the TSOs on the current use of the transmission grid, where bottlenecks are located, the amount of time that certain lines are congested, and the reasons for the congestion. It should clearly be a part of a development plan for wind power and infrastructure to map the current status of operations of the infrastructure to be developed.

It should be clear from the beginning that the infrastructure development should be aligned with the political goal set by national and EU authorities. As an example the base case by ENTSO-E in the TYNDP must include the fulfillment of the 2020-goals.

Suitable investment conditions for TSOs are indispensable and must take into account capital market oriented conditions. Regulation must offer incentives and conditions which make investments attractive. Additionally licensing procedures must be accelerated and harmonized internationally. Regulators should use their influence to politics to ensure designing a suitable legal framework for TSOs. In a similar way regulators should play a more active role in the public debate about new transmission lines in order to support public acceptance.

Question 1: How will the expected growth in wind generation affect the markets in which you operate?

With the expansion of wind generation, electricity demand and generation will be further uncoupled. Due to increased capacity (In north-west Europe national policies aims to reach 53 GW offshore wind in 2020 only in the North Sea) and with major swings in wind output it will be increasingly difficult to correctly forecast generation output in advance.

This means:

- Need for more regulation of the system, large generation capacity has to be reserved for regulating both up and down, taking that capacity out of the market
- More volatile prices and increased occurrences of zero and even negative prices
- Decreased operation time for base load generation, and risk for crowding out of low carbon base load generation as nuclear or CCS-based Clean Coal
- Network security concerns, increased loop flows in the transmission network and lower predictability mean reduced cross-border capacity for trade
- More difficult to plan the operation one day in advance
- Congestion management methods will have to be even more transparent and must signal scarcity of transmission capacities

What are the key challenges you foresee?

- There is a strong and urgent need to build new transmission capacity – both internally in the countries and cross-border. Having sufficient grid capacity is of crucial importance to even out the variations in wind power, reduce the risk of crowding out of nuclear or CCS-based Clean Coal, increase size of the markets and facilitate market integration.
- Secure efficient use of the underlying network which requires that congestions are managed where they occur.
- Ensure that market participants are reached by clear and transparent price signals. Make sure that the wind power investor is given the same preconditions as other generation investments.
- Making more efficient use of existing cross-border capacity by implementing day-ahead market coupling and continuous intra-day systems become further important when adding more intermittency to the supply side. Especially the integration of intra-day trade and balancing markets is perceived as very important. This will enable market players to combine available regulation capacity and supply the regulation capacity to areas where there is a lack.
- One of the main challenges is to set up a balancing market that avoids institutionalizing distorted price signals by not having all (i.e. including wind) participants in the balancing market.
- Wind generators should be designed to be more resilient to disturbances to increase their role in regulating the system and to reduce the risk for cascading errors.
- Making sure that electricity output and demand are better aligned with each other by implementing demand-side management. Making customers respond to price signals
- Unlock the available flexibility in the system by giving proper price signals to generators to deliver flexibility. Enabling base load generation capacity (mainly CHP) to deliver up- and downward flexibility.

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?

Current market rules are designed for a generation mix which is different from the current, and especially the future. There is a need for new market design and support systems in some countries that would make wind power integrated in and part of the market. Support for wind power should be constructed in a way to distort the rest of the market in the least possible way. The support should also be concentrated to one support measure in order to be more transparent, instead of spreading it to support for connection charges, specific scheduling priority, absence of demand on ancillary services, etc. Market rules should not distort market functioning and give correct price signals to all generators. This also means that no price caps should be installed as these would hamper investments in additional flexibility. TSOs should focus on efficient congestion management and react accordingly. Demand side measures should also be used more widely in order to respond to intermittent generation – see also Question 9.

If support schemes are constructed in a way to make wind generators completely insensitive to market prices, even if they are negative, this could lead to oversupply at certain situations with low demand and strong winds. Price floors at some negative level would not help this situation, only make it less visible. The only solution is to reduce wind power output, either by reduced support to wind power at negative prices or by curtailment by the TSO.

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?

Yes, this would partly facilitate a more efficient integration of large scale wind production, as errors in wind forecasting reduce considerably the last 3-4 hours before real-time. It is however not reasonable to change the spot market gate closure so close to real time. Properly established intraday markets give market participants the possibility to adjust their plans very close to real time. Countries where intra-day markets are not yet implemented should do that as soon as possible. This is a top priority and would move gate closure much closer to the operating hour. Only if the prices on the intra-day markets become too different from the prices on the day-ahead markets, which are the markets that financial hedging contract are settled against, it should be considered to move gate closure of the current day-ahead markets closer to the operating hour. Also, if gate closure for the day-ahead market is moved closer to real time, other generation sources, as e.g. thermal generation will have increased difficulties and costs to be able to generate on time if they are scheduled.

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?

The model for trade and for integrating the regional markets proposed by PCG – especially the proposal on continues trade in intra-day markets – and endorsed by the Florence Forum December 2009 is very well compatible with wind generation, assuming that wind power is integrated into the market as described under Question 2.

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

Yes, any system costs that wind power has, should be directly dealt by the wind generating owners themselves. If the market signals in the balancing market do not reach the wind generators the costs of less security of supply (e.g. when it does not blow) is moved to some other stakeholders in the system distorting their costs. Wind generators should have proper incentives to improve forecasting techniques and minimize imbalances. This is helped by liquid and well functioning intra-day markets.

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?

Yes, there is a need to increase the share of R&D performed by TSOs. Of course, the TSO business is a regulated business, so regulators have to find a way of incentivising R&D in order to strike the right balance. Increased R&D efforts by TSOs will make them better aware of market developments, so that they can respond with timely actions.

Apart from what is included in the concept of Smart Grids there is need for development in projects leading to harmonization of support systems, congestion management, set a platform for real integrated balancing markets and finally engage in research in how localization signals through congestion management and grid tariffs can be used and harmonized.

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?

Yes, wind generators should face the same types of network charges as other new generators, calculated using the same methodology, see answer to Question 2. If the network charges are constructed in the right way, that should be sufficient to give the incentives required, and the appropriate risk balance between players.

Of course, Transmission reinforcement takes – due to the longer licensing process – longer time than building new wind farms, and there may be need to give legal support to prioritize certain areas at the time, in order to make the process smoother.

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?

See Question 7. TSOs should have a pro-active planning role with a long-term approach, as grid developments take longer than capacity developments. This in order to avoid that RES installations are ready when there is no grid capacity available (and vice versa).

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?

Yes, the “supergrid” issues are relevant, but it is not only a question of off-shore grids. Also the mainland grids are equally or even more important, since electricity have to be transmitted from the point of generation to where the consumption is located. The super-grid issue hence has to cover the whole way. Such a pan-European grid also raises the issue of who should pay. The customers benefiting from the network may be far away from where investments are made, and this means that a pan-European regulation has to be in place in order to make sure that the one who benefits also is the one that pays.

Further, the idea of smart grids is to increase communication and thus make actors able to faster become aligned with occurrences in the market. Thus one issue is how to make intermittent demand and intermittent supply sources more active in the market.

Also, the interrelation with the EU RES Directive should be considered. Member States will be hesitant to connect subsidized renewable generation to other Member States within a supergrid; given that the renewable energy might not be counted towards their targets (according to the current RES Directive).

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?

Yes e.g. in case of the Netherlands the existing and planned offshore lines are/will be owned by the wind farm owners. Regulation to make the TSO responsible for offshore network is in the making (and we support that), however this might not be applicable to the wind parks built in the Second Round of offshore wind in NL (950MW online by 2015). The regulatory framework in transmission issues is not sufficiently developed on the European scale. In order to have a truly integrated European market, there is need to have not only an ownership structure that is suited to its purpose, but also a regulatory framework that has the same scope, and which takes away national peculiarities. Harmonization is still missing.

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?

Yes, when it comes to approving regional projects and decide on sharing of costs and benefits, the regional projects can play a role. There is a risk however that it will not be enough to address these issues on a regional scale. Many of the issues at stake are much broader than “regional”; and affect the whole of Europe. An overarching structure and coordination is largely lacking, but very necessary.

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

- Speed up licensing procedures for transmission lines.
- Actively support grid development to avoid locked in cheap generation capacity
- All regulators should monitor congestions and how they are handled. Export/import can not be hindered by artificially moving congestions to the control area border.

Congestions must be handled where they occur in a transparent way, and where possible, by market based methods.

- To make the use of wind power more efficient, it is possible to build heat accumulators in district heating systems, and thus increase the flexibility of thermal cogeneration plants. Also electricity boilers can be used for fast regulation of the power system.

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With kind regards



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