Building a European energy market fit for the energy transition

THE EUROPEAN WIND INDUSTRY'S RESPONSE TO THE EUROPEAN COMMISSION'S PROPOSALS ON A NEW MARKET DESIGN

MARCH 2017

WindEurope
windeurope.org

INTRODUCTION

Wind energy is a reliable, sustainable and affordable source of electricity. The wind industry provides the most competitive source of new power generation in Europe, and its industrial base is growing in EU Member States. Technology costs have significantly declined thanks to industrial learning and long-term visibility on both volumes and revenues. Keeping on track with its decarbonisation commitment, the EU could see 23.9% of its power demand supplied by wind energy in 2030, against 10.4% today.

But the current electricity market design makes it difficult for wind energy to fully deliver its benefits to consumers and the wider economy. Regulatory frameworks increasingly expose wind generators to market risks while the rules governing the grid and electricity markets do not always allow them to compete on par with conventional generators.

These rules were tailored to the power system of the past, made up of centralised fossil fuel production within national boundaries. The rise of renewables, the emergence of new energy technologies as well as the evolution of demand patterns have challenged this design. The power system is now more complex to plan, control and balance. It needs enhanced flexibility and less baseload capacity that keeps generating at times it's not needed. Technological solutions such as storage and demand response exist. But regulatory barriers cap their deployment.

In addition, the entire power sector faces low wholesale power prices that makes the bar for market-based investment in any technology difficult to clear. The overcapacity of generation needs to be tackled to re-establish long-term price signals for investors. A regional approach to system adequacy can help solving this problem in the highly interlinked power system of the EU. This would lead to significant costs savings for households and the industry.

WindEurope believes the legislative proposals for a revised electricity market design offer a unique chance, to provide the industry with a predictable investment framework, to create fairer market conditions for all energy sources, and to seize the opportunities that come with a decentralised energy system. Getting the market design right today will determine whether the energy transition in Europe is achieved in the most cost-effective manner.

Positive elements

- Clear rules for curtailment applicable to network operators
- Priority dispatch and balancing exemptions remain for existing assets
- Equal access to balancing and other ancillary services market
- Capacity mechanisms as a last resort option and coal power plants not supported
- Common rulebook for short-term markets

Needs improvement

- Member States should demonstrate the conditions are in place to phase out priority dispatch
- Unless contracted, TSOs should not order units to operate at certain levels to provide services
- Adequacy assessments should be performed at regional level
- The EPS provision should kick-in as soon as possible for all concerned plants

CREATING A LEVEL PLAYING FIELD FOR WIND ENERGY

1. ADAPTING BALANCING AND DISPATCH RULES[1]

Priority dispatch and balancing exemptions have been important drivers to reduce the risks associated with the volume of power to be injected into the grid and address market failures. Their phase out need as a pre-condition the existence of fair market rules allowing wind generators to participate in all markets. Such phase out should not apply to existing wind power plants which were financed and built on the premise that all the power they produce is dispatched onto the grid.

Today, there are several countries with significant shares of wind energy (e.g. UK, Sweden) where wind generators do not benefit from priority dispatch and are exposed to imbalance prices. These countries have introduced market rules that provide for a certain level-playing field and apply good practices in system operation. For instance, wind power plants are guaranteed to be curtailed last if the network lines are congested. They also feature market-based support schemes that allow wind generators to voluntarily dispatch-down their production via the balancing market (e.g. Denmark).

But curtailment rates are increasing in poorly interconnected systems (e.g. Ireland) and countries where the roll-out of infrastructure is lagging behind renewables deployment (e.g. Germany). Another driver is also the lack of flexibility of the generation fleet. In particular, technical must-run obligations sometimes require conventional generators to keep generating at a minimum level in order to secure voltage control and grid stability, even though their variable costs are higher than the price in the electricity market. Unless commercially contracted, units should not be ordered by TSOs outside ancillary service markets to operate (except under force majeure) at certain levels of electricity infeed.

Positive elements

Articles 4 & 11 of Electricity Regulation: grandfathering clause for existing wind energy installations

Articles 12 of Electricity Regulation: wind energy producers benefit from priority access, i.e. they can be curtailed only if:

- it results from a voluntarily offer they make on market-based congestion management;
- it results from network operators' decision to maintain grid stability; in that case, they should be dispatched down after all other generation technologies, and receive a regulated curtailment compensation for the foregone revenues that include their financial support (100% for existing assets, at least 90% for new assets).

Article 32 of Electricity Directive: DSOs should draft network development plan, to be agreed by NRAs with system users' advice.

[1] See https://windeurope.org/wp-content/uploads/files/policy/position-papers/WindEurope-Priority-Dispatch-and-Curtailment.pdf; and http://www.ewea.org/fileadmin/files/library/publications/position-papers/EWEA-position-paper-balancing-responsibility-and-costs.pdf

Needs improvement

Articles 4 & 11 of Electricity Regulation: Member States should demonstrate to the European Commission that the following cumulative conditions are effectively in place to phase out priority dispatch and balancing exemptions:

- wind producers can participate competitively in liquid intraday and balancing markets;
- national plans are implemented to enhance the operational flexibility of the system, including stricter operational requirements for thermal power generation[2];
- transparent congestion management rules are implemented (cf. article 12).

Article 12 of Electricity Regulation: TSOs and DSOs should be required to

- disclose and justify the need for must-run arrangements to NRAs on a yearly basis;
- duly report to the NRAs on any derogation to the priority access rule, especially on the ground of "disproportionate costs", and such deviation to be disputable by relevant system users;
- discuss with system users as part of the long-term network development plans or implemented via ad hoc dynamic connection contracts[3]. The amount of curtailed renewables capacity that grid operators can consider when planning their grid should not be set by the Regulation.

2. OPENING UP ANCILLARY SERVICES MARKETS

Regulatory barriers[4] still hamper wind generators to increase and value their flexibility as a system service. There are markets for some services, whereas others services are required by network codes (and not necessarily paid for). As the share of wind and solar increases in the EU power mix, the amount of conventional units injecting into the grid will tend to reduce during peak periods of renewables production. Transmission and Distribution System Operators (TSOs, DSOs) will have to adapt their operational procedures to this evolving scenario in order to preserve the stability of the system.

Providing these services (including reactive power) should not result from mandatory requirements given the significant investment and readiness costs that it would imply to upgrade power plants with such minimum capabilities or even operate at partial load to provide capacity reserve. TSOs and DSOs should procure these services via transparent and fair market mechanisms, ensuring system needs are fulfilled regardless of the technology use. Solutions will then be provided by storage, demand side management, flexible renewables or any other provider that is more cost-effective. This will create new revenue streams for these resources and further incentivise the deployment of innovative solutions like Virtual Power Plant or combined wind and storage assets.

[2] National energy and climate plans as foreseen by the Governance regulation. This could include retrofitting of thermal power plants
[3] The DSO/TSO and the generator that wants to connect to a constrained part of the network agree on a limit of curtailment hours each year making the connection process faster and potentially cheaper. An extended use of such arrangements allowing network operators not to take up all the generation capacity should be economically justified and discussed as part of the long-term network development plans.
[4] See also https://windeurope.org/wp-content/uploads/files/policy/position-papers/WindEurope-Ten-Commandments-of-the-Wind-Industry-on-Balancing-Markets.pdf

Positive elements

Articles 32 & 40 of Electricity Directive: ancillary services should be procured via transparent, technology neutral market-based procedures.

Needs improvement

Articles 32 & 40 of Electricity Directive: the commercial provision of ancillary services by regulated entities should be forbidden.

3. FAIR AND EFFICIENT NETWORK CHARGES

WindEurope supports the efforts to align network tariffs structure, possibly through a new network code. Non-harmonised tariffs lead to investment distortions and hold back an efficient deployment of wind energy in Europe. The annual costs borne by generators (G-charges) should be harmonised – where they exist –, based on energy (€/MWh), and ultimately phased out. Power based G-charges (€/MW) tend to penalise renewables and peaking generators because they have less operational hours than base load generators. They should also avoid locational signals which incentivise generators to connect in less congested areas. These should be included instead in the one-off costs paid by the generator when connecting to the grid.

Connection charging regimes should be designed according to a "shallow" methodology (vs. "deep"), i.e. the generator pays for the infrastructure connecting its installation to the grid only. Otherwise the first generator to ask for a connection would have to pay for all the costs alone.

Finally, DSOs should be incentivised to make use of smart grid equipment that can improve their visibility on the flexibility resources connected to their network, instead of relying on costly and time-consuming grid expansion. Their deployment should be considered as part of TSOs and DSOs long-term network development plan, and encouraged through performance-based tariff (cf. UK RIIO model).

Positive elements

Article 16 of Electricity Regulation:

- no discrimination between users connected at distribution and transmission levels;
- incentives for TSOs and DSOs to deploy smart grids technologies.

Needs improvement

Article 16 of Electricity Regulation: there should be harmonisation at EU level of:

- generation charges – where they exist – based on energy equal to 0 € / MWh;
- principles for connection charging regimes based on "shallow" methodologies.

TACKLING OVERCAPACITY TO THE BENEFIT OF CONSUMERS

1. LIMITING CAPACITY MARKETS TO A LAST RESORT, NEED-BASED OPTION[5]

The EU power sector faces a continuing overcapacity of power generation but only a few geographically constrained adequacy issues. Nationally oriented Capacity Remuneration Mechanisms (CRMs) and market exit barriers have been introduced in an uncoordinated manner, often giving little consideration to the actual adequacy problem and possible market distortions they induce.

WindEurope supports a European methodology to mainstream practices regarding adequacy assessment. Current methodologies often overlook the contribution of energy imports and exports. They also overlook the system adequacy contributions that can be made by non-conventional sources of energy such as renewables, demand side response etc. A European methodology should be defined by ENTSO-E with the involvement of relevant stakeholders and approved by ACER.

WindEurope also supports the introduction of mandatory regional adequacy assessment performed by the relevant TSOs as a pre-requisite to the introduction of a CRM[6]. This will make sure cross-border solutions are prioritised over national ones when more efficient. The results shall inform NRAs about the amount of firm GWs needed to assure a certain level of security of supply that they will have defined[7]. The results should be reviewed by ENTSO-E and the Board of ACER to ensure consistency between the assessments, especially if a country belongs to two regions. The geographical scope should be as coherent as possible with the regions associated to the Regional Operational Centres.

Where these assessments have not identified a resource adequacy concern, Member States should not introduce a CRM. If a risk exists, they should tackle first regulatory barriers that hamper the market to deliver adequacy: shortage pricing, demand response, etc. Only if this proves insufficient, a CRM can be introduced as a last resort option and complement to an improved Energy-Only Market.

Positive elements

Articles 18, 19 & 20 of Electricity Regulation:

- a common methodology by ENTSO-E using advanced probabilistic approach and ensuring a systematic inclusion of all energy resources;
- national roadmaps to tackle resource adequacy concerns before introducing a CRM;
- binding reliability standards that are economically proportionate set for each Member State.

[5] See also https://windeurope.org/wp-content/uploads/files/policy/position-papers/WindEurope-System-Adequacy-Assessment.pdf
[6] In the long term, these could be replaced by a single EU-wide adequacy assessment performed by ENTSOE and approved by ACER.
[7] The European Commission's sector inquiry on CRMs (2016) suggests that there is often a mismatch between the outcome of adequacy assessments and the capacity procured through CRMs.

Needs improvement

Articles 18, 20 & 34 of Electricity Regulation: adequacy assessments should:

- be performed at regional level yearly by relevant TSOs and reviewed by concerned NRAs;
- represent the sole basis to justify any CRM introduction.

Article 7 of ACER Regulation: ACER should establish regional subgroups to support the coordination of the concerned NRAs, and its Board entitled to issue binding recommendation on the assessments.

2. ACCELERATING THE PHASE OUT OF THE MOST POLLUTING PLANTS

If CRMs are deemed necessary, they should be designed in a way that minimises any negative impacts on the price formation on energy markets. They should avoid a lock-in effect of inflexible and polluting power plants. They should allow the participation of both demand and supply flexibility options (new and existing) on a level playing field as foreseen in the energy and environment state aid guidelines. Whichever design is implemented, CRMs should be temporary and include a review clause at a regular period to align the mechanism with the latest adequacy analysis.

WindEurope supports an Emission Performance Standard (EPS) of 550 gr CO2/kWh in the frame of a CRM. Whilst a robust Emission Trading System (ETS) might encourage a switch of fuel use, an EPS would provide an ultimate backstop limit to investments in polluting technologies that are built now on the promise of emission reduction technologies which may never be commercially viable[8]. The most polluting, and often inflexible, power plants above this threshold will likely retire - or not be commissioned -, helping to address the current overcapacity in Europe. Such retirement would nonetheless decrease the demand for ETS allowances. The Market Stability Reserve has been put in place to adjust auctioning volumes if a surplus exists. In addition, the revised ETS should provide an opportunity for Member States to withhold the corresponding amount of allowances from their auctioning platform to rebalance the carbon market.

The EPS should apply to both existing and new assets above that threshold as soon as the Electricity Regulation enters into force. But exemptions for strategic reserves might be justified by a cost-benefit analysis, proving this would the most cost-effective solution to solve local and temporary adequacy problems for a maximum of 5 years. Also, compensation measures could be envisaged for coal dependent regions. These could build on the current solidarity mechanisms of the ETS[9], and be further explored as part of the discussion on the next Multiannual Financial Framework (2021–2027).

[8] The 550g /tCO2 threshold will effectively block remuneration for coal plants that do not feature carbon capture and storage, biomass co-firing or combined heat and power generation. Nonetheless, there should be a review process to update this value with technological developments (e.g. 5 years for the European Investment Bank lending policy)
[9] E.g. Article 10-c; Modernisation Fund

Positive elements

Article 23 of Electricity Regulation:

- consistency between capacity procured through CRM and adequacy assessment;
- an EPS that forbids CRM remuneration for the most polluting plants.

Needs improvement

Article 23 of Electricity Regulation:

- the EPS provision should kick-in as of the entry into force of the Regulation for all concerned plants. Existing assets that are part of a strategic reserve may be exempted until 2026.
- if a CRM is introduced, it should be reviewed regularly in order to reflect the latest adequacy assessment. If this shows the adequacy risk is no longer existing, the CRM should be phased out.

ENHANCING THE FLEXIBILITY OF THE SYSTEM

1. IMPROVING MARKET OPERATION AND PRICE SIGNALS

Reforming short-term markets functioning can help to increase the overall flexibility of the power system and ultimately integrate larger shares of renewables. Wind power producers should be allowed to adjust their schedule as close as possible to real time to reduce forecasts errors, especially if balancing responsibilities are to be introduced for all generators. Encouraging such "self-balancing" would also reduce balancing costs that are today socialised. A common set of features needs to be agreed for each timeframe (e.g. harmonised and shortened gate closure times, recalculation of transmission capacity in the intraday market etc.). It will ensure that electricity generated in highly windy regions can be traded to regions where and when it is most needed.

It is important that market prices are undistorted and allowed to move freely without caps. Price spikes in both direction are needed to trigger the right scarcity signals on both the supply and demand side. This increased price volatility will trigger the development of financial products by power exchanges to allow wind power generators to hedge against such risk. However, the introduction of negative prices in countries where they were not implemented shouldn't have retroactive impact on existing plants.

Positive elements

Chapter 2 of Electricity Regulation:

- common rules for day-ahead, intraday and balancing markets, incl. the removal of price caps;
- Facilitating the development of long-term hedging products.

Needs improvement

Chapter 2 of Electricity Regulation:

- TSOs should not be allowed to perform balancing energy actions before intraday gate closure time;
- Grandfathering clause for existing assets benefiting from production support in countries where negative prices were not allowed.

2. CREATING A REGULATORY FRAMEWORK FOR STORAGE

The integration of large shares of renewables can be facilitated by storage and sector coupling solutions where renewable energy is stored and used in the transport, industry or heating sector. Storage encompasses many different technology paths such as batteries, fuel cell hydrogen etc. These feature various applications and processes, and should be seen as complementary. Some of these technologies are today shifting from R&D demonstration projects to products that are commercially viable. Their roll-out should now be encouraged in a coherent manner.

There needs to be a common legal framework at EU level for these assets. It should provide a definition of storage assets that properly reflect the diversity of technologies and processes. Clear ownership[10] rules need to be introduced. These rules need to recognize that storage can be provided by commercial parties. They should also recognize that TSOs and DSOs should not own and operate storage assets, unless a transparent and fair market-based procedure, performed on a regular basis, demonstrates there was no interest from market parties. However, network operators should be allowed to procure flexibility for their own needs through, again, a transparent market-based and technology-neutral procedures. As regards grid codes' compliance, storage should not be imposed requirements for both generators and load. Similarly, they should be exempted from network charges applying to the electricity they inject and withdraw from the grid.

Positive elements

Articles 2, 36 & 54 of Electricity Directive:

- A new definition that opens the way to Power-to-Gas ("another energy carrier");
- Market-based ownership and operation of storage assets as general principle, with clear conditions for TSOs/DSOs involvement;
- Procurement of flexibility (incl. storage) via market-based and technology-neutral mechanisms.

Needs improvement

Articles 36 & 54 of Electricity Directive: storage assets should be exempted from G charges.

[10] Some system operators being interested in storage systems have been allowed by their regulators to own and operate them (Italy, Belgium).

3. ENABLING DEMAND RESPONSE

Demand response must be further developed at industrial, business and household levels. This is essential to drive a cost-effective integration of renewables in the EU power system. So far, customers' involvement is limited by inadequate tariff structure, unfair market rules and slow deployment of smart meters.

Enabling consumers to base their decisions during scarcity periods on market price signals will be a major step away from the dominant supply-side focus. Demand side flexibility of customers should also be treated in the same way as supply-based flexibility sources. The regulatory framework should allow their participation in all markets, without suppliers' consent, either directly (mainly large industrials and partially SMEs) or through aggregation of service providers (residential load shedding), ensuring a level playing field between all participants. This can include the compensation to another Balancing Responsible Party for imbalance costs caused by demand response actions.

Positive elements

Chapter 3 of Electricity Directive:

- Consumers' entitlement to dynamic pricing and smart metering;
- Clear framework for aggregators;
- Time differentiated network tariffs.

Needs improvement

Article 5 of Electricity Directive: phasing out regulated prices as of the entry into force of the Directive.

IMPROVING THE INSTITUTIONAL FRAMEWORK AT ALL LEVELS

1. STEPPING UP REGIONAL COOPERATION

WindEurope believes that completing the Internal Energy Market cannot be achieved without the progressive uptake of regional initiatives. These regional initiatives need to coordinate Member States' approaches on system and market operation, adequacy assessment and risk preparedness. This is especially relevant for system operation, where an optimised use of energy resources and existing infrastructure cannot be achieved without strengthened cooperation between TSOs. Some of them have been leading by example by setting up Regional Security Coordinators (RSCs) such as Coreso or TSC. WindEurope welcomes the proposed framework for Regional Centres (ROCs) that represents the next step of this fruitful collaboration. Their geographical scope should be as coherent as possible with the cooperation regions for adequacy assessments and risk preparedness, and cover the entire EU.

Such ROCs should develop common network operation tools to ensure coordination of network operation in normal and emergency conditions, provision of network information day ahead and intraday, and all other measures to increase operational coordination. They should also play an enhanced role as regards the balancing of the system, in particular the sizing of operational reserves which can be significantly optimised, with fewer real-time assets online. A robust and clear decision-making process should exist, at least for those tasks were ROCs issue binding recommendations, because there might be arbitration situation between cross-border cooperation and domestic actions.

Positive elements

Chapter 5 of Electricity Regulation:

- a legal framework for Regional Operational Centres;
- extended set of tasks including regional sizing of reserve capacity and facilitation of the regional procurement of balancing capacity;
- binding ROC decisions on capacity calculation and operational planning security analysis.

Needs improvement

Chapter 5 of Electricity Regulation:

- providing the possibility to extend the list of tasks where ROCs decisions will be binding;
- entitling ACER to oversee these ROC and provide binding recommendations.

2. A EUROPEAN GOVERNANCE FOR A EUROPEAN MARKET

Over the last years, ENTSO-E has demonstrated willingness to better engage with stakeholders. Nonetheless, ENTSO-E remains a hybrid structure between a trade association, representing the interests of its member companies, and an institution, carrying legally binding tasks. ENTSO-E should involve stakeholders at an earlier stage when it is drafting new network codes and the Mid-term Adequacy Forecast. The creation of specific stakeholders committees is a possible way forward. Another way forward could be to enhance the role of its current independent Advisory Committee.

ACER should be equipped with enhanced competences and new monitoring tasks, in particular on network codes, TSOs regional cooperation, capacity mechanisms, and the activities of ENTSO-E and the new EU DSOs entity. This can include binding recommendations to ENTSO-E, the DSO entity, NRAs and the ROCs. A proper allocation of resources within ACER on all its new tasks should be seriously considered.

WindEurope welcomes the proposal to form an EU DSO body with a legal role. As such, the DSOs should be further involved in network planning and network operation, to ensure an optimised operation of the system. It is important that this new entity remains a technical body and do not engage in advocacy activities. There should be a formal, transparent and inclusive cooperation with those associations representing system users. ACER should oversee its formation and tasks.

Positive elements

Chapter 5 & 6 of Electricity Regulation:

- extended tasks of ENSTOE alongside stronger transparency requirements;
- a legal framework for a EU DSO body.

Article 16 of ACER Regulation: new monitoring tasks on state intervention for security of supply.

Needs improvement

Article 16 of ACER Regulation: monitoring of renewables integration (e.g. curtailment rates, GOs).

3. NEW GRID CODES IN LINE WITH SYSTEM'S EVOLUTION

In several countries (e.g. UK, Spain, Denmark), DSOs are playing an increasing role as market facilitator. They are taking a much more pro-active stance on system operation than in the past. These developments are being accelerated through the roll-out of smart meters, digitisation, increasing impact of distributed generation on system security and the introduction of dynamic tariffs that encourage consumers to invest in small scale generation, storage and demand response systems.

Making use of all these "local flexibility" resources requires a high-level of coordination between TSOs and DSOs to ensure efficient and secure operation of the system. WindEurope suggests that the proposed list of future network codes should not lead to "a code per technology" approach. Both a regular and transparent process of maintenance of the network codes is needed in order to adequately reflect technical and regulatory progress in all aspects of the power system. The transformation of network codes into delegated acts should not jeopardize stakeholders' participation. And relevant system users should be invited to participate in the drafting committees of future network codes at the earliest stage possible.

Positive elements

Chapter 7 of Electricity Regulation: involvement of stakeholders in drafting committees.

Needs improvement

Chapter 7 of Electricity Regulation:

- streamlining the list of network codes to avoid a technology specific approach;
- ensuring stakeholders' representation in the Electricity cross-border committee.