European Distribution System Operators for Smart Grids

Response to ACER public consultation on Energy regulation: a bridge to 2025

June 2014

EDSO's response to ACER public consultation on Energy regulation: a bridge to 2025

The European Distribution System Operators for Smart Grids (EDSO) welcomes the ACER public consultation on "Energy regulation: a bridge to 2025" which gives an opportunity to the energy sector to think ahead and reflect on how to set up a stable, but flexible, regulatory framework for the ten years to come.

The European policies aiming at liberalising, integrating, and decarbonising the electricity market are encouraging utilities to innovate and rethink their roles and responsibilities. Distribution System Operators (DSOs) are particularly affected by some of the fundamental changes that have occurred as a result over the last two decades: deregulation and integration of the European energy markets, unbundling between competition and regulated business, strong growth in distributed energy resources connected to the grid, deployment of smart meters, and more.

Future new market players are preparing their entry into the electricity business (Energy Service Companies, aggregators, etc.), and new technologies are expected to take off (electric vehicles) or are being researched (energy storage). DSOs are directly impacted by these changes as most new users and devices will be connected to distribution grids.

Moreover, energy infrastructure is built to last decades and relies on long-term investment plans. Cost-efficient planning can be put at risk if policy objectives, the regulatory framework and the rules for cost recovery, change too often. A long-term perspective on the current challenges and how to solve them in a sustainable way is thus very important.

In this paper, EDSO reflects on ACER's new paper, with a particular focus on five topics: infrastructure investment, consumers, the retail energy market, the role of DSOs, and the governance of network codes.

Infrastructure investment

ACER's paper rightly points out that "timely delivery of infrastructure within, and between, Member States is critical to achieving the full benefits of an integrated European energy market", although, transmission networks are almost solely focused on, with little reference to distribution networks.

Interconnection between Member States is undeniably important for the creation of an internal energy market, however, regulators are asked to keep in mind that new variable generation is overwhelmingly connected to distribution networks, but also that distribution lines represent 97% of the total electricity lines in Europe.

Investments at distribution level are as urgent as investment at transmission level. In 2011, the European Commission (EC) estimated that to reach the 2020 targets and complete the internal energy market, investments in distribution grids would have to reach €400 billion, compared to "only" €200 billion for transmission grids[1].

The paper also refers to projects of common interest (PCIs) as a potential help for interconnecting Europe and completing the internal energy market. PCIs appear to provide promising opportunities for network operators, however, their focus is solely on transmission level. Smart grids are identified as one of the priorities for PCIs but the criteria for selecting the projects do not take into account smart grids at distribution level: the voltage limit is too high, a TSO has to be included, the project must cover more than one member state, etc[2]. This explains why only two of 250 PCIs chosen by the European Commission so far are focused on smart grids. To make the most of this new instrument, both at transmission and distribution level, EDSO encourages ACER to work together with the EC on future revisions of criteria in a way that would allow smart grid deployment to be eligible for PCI status.

Finally, smartening distribution grids to keep costs under control is rarely incentivised in Europe. Further discussions between DSOs and regulators regarding and adaptation of the regulatory framework are needed at National level in order to facilitate and encourage investment in smart solutions beyond investments in physical infrastructure. ACER's call for a "smart" regulation is thus a positive step.

Consumers, retail market and the role of DSOs

Consumer concerns

In the coming years, households may start to become more involved in demand response programmes with a view to reducing their energy bills. In many countries, this means an increased reliance on smart metering and more data generation driven by the amplified need to understand how flexible resources are used. In such a system, consumers will need a trustable entity to manage their data. As presented in the upcoming EDSO paper on "The role of Distribution System Operators in tomorrow's electricity market - Data Management", to be released in June 2014, DSOs are well-placed to carry out this role

[1] Both figures include electricity and gas networks

[2] EDSO response to European Commission consultation on the draft Communication: State aid to promote important projects of common European interest (IPCEIs), February 28 2014

as regulated and neutral market facilitators, providing data (if the customer agrees) in a non-discriminatory way to third-parties who may offer innovative services.

DSOs, in this way, can also play a role in encouraging and promoting energy efficiency services. Depending on the national context, the DSO can contribute to raising awareness for new services via, for example, targeted communication to customers.

Empowering and engaging customers will also require incentives which can take different forms, for example, dynamic grid tariffs or incentive based demand response schemes, enabling the consumer to save money by offering controllable load shifts to market and network operators.

Technological advances

EDSO partially agrees with the ACER's assessment of the DSO's main technical challenges, namely:

- Smart grids - which need to be deployed in order to maintain security of supply and quality of service, and will help to "meet consumer requirements more cost effectively and more quickly through better network management and to accommodate less predictable generation"
- Smart meters
- Smart load control - which represent a real challenge for the years to come, as matching the technical capabilities of appliances and designing a market to use them will require further research.

These three topics are very closely linked to DSOs, but it should be clear that "smart grids" are not the driving force behind the new role of the DSO. The actual driver is the ever increasing capacity of distributed energy resources connected to the DSO network. "Smart Grids" is the only a technical answer to the challenges that RES represent. Regarding smart meters, their role can go beyond fostering consumer involvement, they will also be used by DSOs to improve the security of supply and quality of service, by enabling DSOs to monitor the status of the extremities of the grid.

In addition, it is regrettable not to see these technological advances be directly linked to potential actions for regulators. As expressed in the recent DSO Declaration[3], implementing smart solutions will be instrumental to keeping network costs reasonable in the long-run. Electricity tariffs will need to reflect these network investment needs and national regulators are strongly encouraged to work on this issue. Without regulatory change, and without further support, smarter grids will not be deployed and DSOs will be locked-in to the traditional approach of investing in only physical infrastructure, which will be considerably costlier for the customer and for society.

In addition to supportive policies at national level, more research and innovation funding possibilities are needed for demonstration projects. This question is not addressed in the ACER consultation.

[3] EDSO, Eurelectric, CEDEC, Geode, DSO Declaration: Power Distribution: Contributing to the European Energy Transition, May 22 2014

Enabling demand response

Earlier this year, EDSO published a paper, "The role of Distribution System Operators in tomorrow's electricity market – Flexibility"[4] , describing the potential benefits of flexibility and giving a series of recommendations to help demand side response develop in a way that does not put grid stability at risk. In theory demand response could be provided by any active user who has the capability to modify their injection/consumption patterns, i.e. small industrial and commercial users, aggregated household customers and distributed energy resources (DER). This last type of users should be emphasised, "demand-response" should not only be regarded as linked to small electricity consumers but also to small electricity generators.

In practice, the way aggregation can actually work with a multitude of small service providers is still an uncharted territory that will require further investigation and demonstration on the role of system operators (DSOs and TSOs), generators, suppliers, as well as possibly new entrants such as aggregators. Among the questions still need to be answered before designing a suitable system are:

- How to prevent actions from aggregators and/or suppliers creating grid congestions
- How to check if aggregators and/or suppliers are actually delivering a consumption/ generation decrease or increase. Are estimates enough or is additional metering needed?
- If different from suppliers, are aggregators linked to a balance responsible party or not?
- Who is responsible if the services cannot be provided due to a fault on the grid?

We thus welcome ACER's call to "explore the new relationships between services providers and consumers" and the intention to identify "interactions with wholesale markets and transmission and **distribution operation**".

Future role of DSOs

As recognised by ACER, new grid users and technological developments are changing the distribution grid landscape and leading to the rethinking of the role of DSOs. EDSO agrees with ACER that DSOs should not influence the operation of competitive markets, however, they will need to be able to accurately monitor the status of the grid. The sentence "Given that DSOs are monopoly network operators, it is in the interest of all consumers […] leaving other actors (e.g. retailers, independent aggregators, ESCOs) to supply the new services including load control, **usage monitoring** and the provision of vehicles charging/refuelling …" is confusing and in contradiction with the technical challenges mentioned before.

For efficient network operations, which translate into reasonable bills for consumers and high quality of services, it will be paramount that DSOs can monitor how the grid is used, as increased information is core to the transition from traditional distribution networks to smart grids. EDSO's aforementioned upcoming paper on data management illustrates how DSOs use data today and how they could use it tomorrow. In most member states, monitoring usage will be integral to the DSO's role, given the volatile consumption and generation patterns resulting from RES integration and actions from aggregators. DSOs will need this type of information to maintain security of supply.

Regarding data management, the ACER paper states that "where DSOs manage this data flow, they have potentially a competitive edge through the advance detailed knowledge of their customers". This

[4] EDSO paper The role of Distribution System Operators in tomorrow's electricity market – Flexibility, May 5 2014

sentence seems to imply that DSOs are providing services to consumers in a competitive market. DSOs are neutral market facilitators and need data for system management purposes. Today, DSOs are increasingly using smart meters to facilitate billing, switching, allocation and settlement. All of these are market processes, enabled by the DSO. As mentioned previously, provided that the consumer gives its explicit consent, the DSO will provide consumption data to any service provider in a non-discriminatory way.

In order to facilitate the market, ACER's paper states that "the most effective long-term model to deliver such an outcome is ownership unbundling". This sentence, suggesting that there is only one possible way for developing the role of DSOs, is in contradiction with the previous paragraph (p.26) stating that "it is most useful to define a menu of (consistent) options as a way of describing the precise role DSOs might play in order to respect the different contexts of the distribution network across the EU".

The enforcement of the third energy package, which required legal and functional unbundling, provides a sound basis for the future[5] and should be ensured before any further steps are taken. EDSO would also like to highlight that "one-size fits all" is not recommendable, taking into account national particularities.

Network codes governance

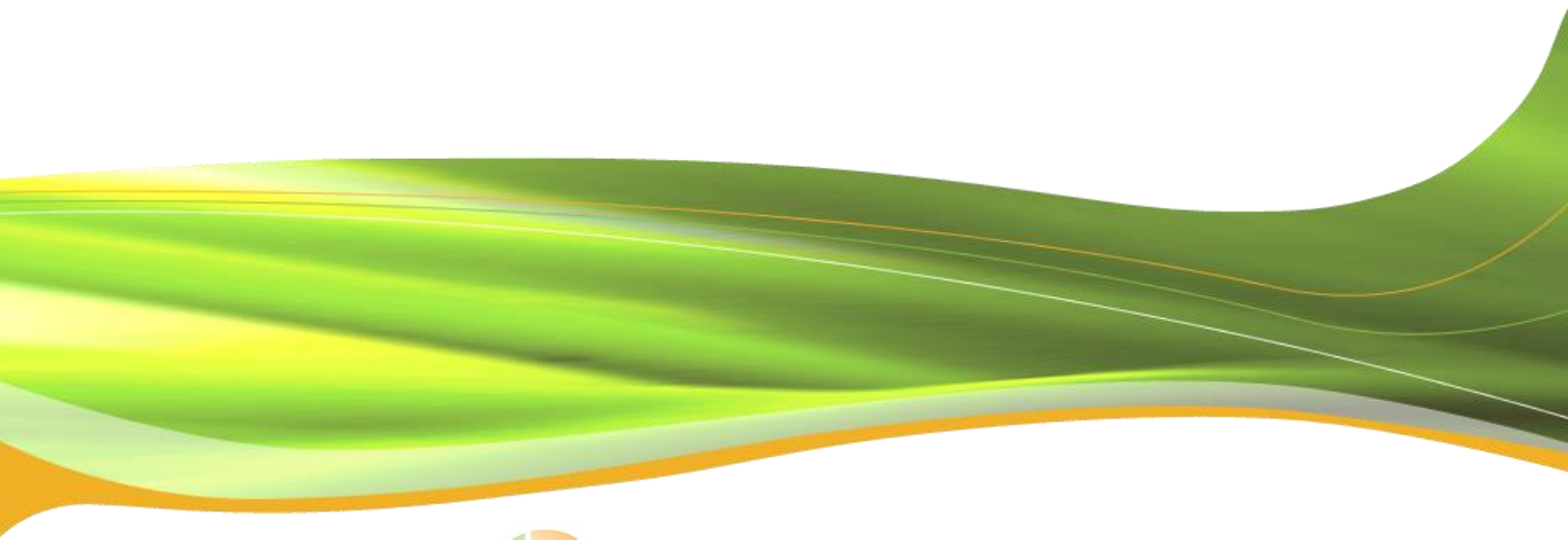
With regards to network codes, ENTSO-E has a supporting role to play during the implementation phase, while regulators, through ACER and NRAs, should be in the driving seat. During the implementation phase, flaws or loopholes in the code might come to light. In the case of this happening, amendments should be proposed and processed in a transparent and neutral way, and regulators should be the ones to guide the amendment process, as suggested in ACER's guidance published on September 24th 2013.

Conclusion and Priorities

Europe will not be able to reach its energy and climate objectives in a cost efficient way without significant long-term investments in distribution networks. In addition, DSOs will need new tools to manage the variable generation capacity connected to their networks, and monitor the electricity consumption and generation habits that will emerge with the development of new energy services. As presented in the DSO Declaration, EDSO believes that:

- Network regulation should be revised to incentivise DSOs to make the necessary efficient long-term investments
- Research and innovation funding opportunities for distribution networks should be further developed at National and European level
- Network tariffs should be fair and cost-reflective.

[5] CEDEC, EDSO for Smart Grids, Eurelectric, Geode, DSO Declaration , May 22 2014



EDSO
for smart grids

EDSO for Smart Grids is a European association gathering leading Electricity Distribution System Operators, cooperating to bring Smart Grids from vision to reality.

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