**European Distribution System Operators for Smart Grids**

**- response to the consultation paper on generation adequacy, capacity mechanisms and the internal market**

EDSO for Smart Grids (EDSO) fully agrees with European Commission's objectives to reach a sustainable, secure and competitive market in the energy system. By looking at the energy system holistically, the benefits of ensuring the realisation of central *and distributed* energy production facilities *together with* energy efficiency measures *and* demand side participation should be reaped.

To accommodate new and increasing demand and facilitate sustainable distributed energy production, the grids will need to be expanded and reinforced. Total investments in the EU distribution grids are estimated to 400 billion EUR[1] for the ten years to come. EDSO believes that with the development of Smart Grids this can be done most efficiently, thus decreasing the needed total social capital investments.

The introduction of Smart Grids and Smart Meters will empower electricity customers and open up opportunities for customers to take a more active role in the electricity market, managing their own demand (and production). It is importance to fully embrace and internalise the dynamics of energy market liberalisation, relying on market based price signals. Here the DSO will play a market facilitator role, enabling innovative development of services and offers from suppliers open to competition. The market facilitator therefore will act as a means to reach a more competitive internal market for all EU customers.

Below the EDSO views are summarised in direct connection to the relevant questions stated in the consultation paper.

### 2.3. Potential causes of a missing money problem

*1. Do you consider that the current market prices prevent investments in needed generation capacity?*

Even if market prices prevent investments in central generation capacity, the investments in on-shore and off-shore wind parks continue and the applications of solar PV are increasing. This will cause a *paradigm shift* in the electricity system: from a system with central generation facilities and a more passive role for the distribution grids, the distribution systems will evolve towards actively managed meshed distribution grids with distributed generation and active consumers. The active distribution grids will be augmented with data, information and communication systems in order to monitor, facilitate new services and coordinate energy flows throughout the network to match supply and demand more efficiently and realising more flexibility needed to incorporate intermittent sustainable distributed energy production.

As put forward in the European Industrial Initiative, EEGI, joint strategic planning and effective implementation mechanisms are needed to bring this evolution about.

1) See also: EC communication on Energy Infrastructure priorities for 2020 and beyond, 17.11.2011 based on PRIMES calculations

Public funds are needed in order to research, develop and especially demonstrate the functionalities and applications reached by smart grid technologies. Also, reaching the full benefits of smart grids, roles and responsibilities across the value chain of energy will have to be further defined and the regulatory frameworks developed to provide a level playing field and to ensure that investments are being made.

*4. What additional steps, if any, should be taken at European level to ensure that internal market rules fully contribute to ensuring generation adequacy and security of supply?*

The development of Smart Grids and introduction of Smart Metering will empower electricity customers and open up the possibilities for customers to take a more active role in the electricity market, managing their own demand (and production). Smart Meter and Smart Grid infrastructure technologies will enable data exchange, facilitated by the DSOs, in order to monitor and manage bi-directional energy flows. This will support matching demand and supply more efficiently at different levels across the energy system. The data can be used by market parties to bring new services to the energy market.

For this, the regulatory frameworks and market design have to be developed in order to facilitate the paradigm shift in the energy system, maintaining a level playing field for investments to be made.

*6. How should public authorities reflect the preferences of consumers in relation to security of supply? How can they reflect preferences for lower standards on the part of some consumers?*

EDSO believes that there is a great need for research, development and demonstration to increase insight in the customer preferences regarding not only security of supply but also *in relation to affordability* together with sustainability on products and services delivered to them. The EU together with public authorities should focus its RD&D efforts towards the realisation of real life demonstration projects. There is also a need for research on the regulatory frameworks that surround the electricity markets in order to align the benefits and costs in new and innovative propositions more efficiently.

**3.3. Towards a more coordinated approach?**

*7. Do you consider that there is a need for review of how generation adequacy assessments are carried out in the internal market? In particular, is there a need for more in depth generation adequacy reviews at:*

*a, b, c. National level/Regional Level / European Level*

EDSO believes that in depth reviews on generation adequacy should be holistic (have a system perspective), thus incorporating also the effects of demand side participation, distributed energy production, energy efficiency measures and the effect on the needed transport capacity of the infrastructure.

*8. Looking forward, is the generation adequacy outlook produced by ENTSO-E sufficiently detailed? In particular, a. Is there a need for a regional or European assessment of the availability of flexible capacity? b. Are there other areas where this generation adequacy assessment should be made more detailed?*

EDSO believes that there is a need for such an assessment, not focusing on generation capacity alone, but incorporating also the perspective of the total value chain of energy, thus looking at possibilities to increase the system flexibility of demand and flexibility within the infrastructure.

In order to increase the well needed system flexibility, the development of European network codes should focus on the connection point between TSOs and DSOs, giving authority and room for the specific DSO, together with the appropriate local and national authorities, to develop services, rules and regulations with regard to system balancing on a local level.

*9. Do you consider the Electricity Security of Supply Directive to be adequate? If it should be revised, on which points?*

The Electricity Security of Supply Directive (18-1-2006) already spoke of wholesale markets which should provide "suitable price signals for generation *and consumption*". Suitable price signals for consumption are not yet made available for many customers, especially domestic consumers. Also in Directive 2005/89/EC, *the encouragement of demand management technologies* (e.g. advanced metering systems and smart grids) and the *encouragement of energy conversation measures* has not materialised yet in the majority of member states, six years later.

The DSO, as a neutral and natural, regulated actor in the energy system, can play an important role in accelerating this development. The DSOs can offer energy conservation services such as:

- Facilitating a robust, efficient, non-discriminating and transparent retail electricity market
- Owning and operating advanced metering infrastructure
- Storing and providing consumer and producer metering data (owned by the customer) – increasing customers' awareness, helping them taking advantage of the possibilities
- Providing information through an open data interface (standardised interface and protocol) to the market, ensuring that any market player (Energy Service Companies, Aggregators, retailers etc.) can develop and offer services to customers (if the customer agrees, and secure data management)
- Enabling active demand
- local balancing of supply and demand/dispatching/active network management, including local electricity storage
- EV recharging infrastructure development and management (where regulators agrees to this)

In order to bring this to reality, regulatory frameworks will need to be developed and roles and responsibilities have to be further defined.

**4.3. Capacity mechanisms in the internal market**

*17. To what extent do you consider capacity mechanisms could build on balancing market regimes to encourage flexibility in all its forms?*

EDSO believes that the future electricity system will need balancing on different levels; not only on national or regional level in order to match supply and demand. The deployment and development of renewable energy sources have a strong impact on the system balance at local level. Therefore the DSO will need the role and the responsibility to contribute together with the TSO to maintain system balance. There is a great need to develop new functions and services, such as energy storage and ancillary services to actively manage the local network.