

Comments on ERGEG Smart Grids position paper

26/02/2010



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These comments on the ERGEG Smart Grids Position Paper are a joint declaration. Additionally, certain partner organisations could submit individual case-specific responses.

General Comments

Over the next years and decades, centralised nuclear and fossil-fueled generation will be progressively replaced by a combination of large-scale renewables and increasing amounts of local, distributed generation. Today's energy system brings the fuel to the power plant, but as the share of renewable energies increases, regulation will need to accommodate the idea of taking the power plant to the fuel. At the same time, it is important to simplify the scale of the task by reducing overall energy consumption and making the renewable transition that much easier.

In the context of a changing energy system, smart grids are simply a means to an end. By trying to agree on a term applied to all levels of the business of producing, distributing and consuming electricity, ERGEG's regulatory efforts may be diverted from meeting their primary goal which is to focus on the best ways for implementing the transformations laid out in the Renewable Energy Directive and the Third Energy Package.

The application of smart information technology to the electricity sector is likely to make the changes required by the EU's goal of boosting energy security, competitiveness and sustainability far easier to implement. Scaling down reserve production needs to cut costs, primary energy demand and CO2 emissions, for instance, will be a much simpler task when industrial, office and household consumption can be measured at any given moment of the day.

Yet technical progress towards a more responsive network is only part of the challenge: More important issues are, for example, the political and legal difficulties of convincing fossil fuel and nuclear based utilities to embrace the trend towards renewables, or addressing financial and public opposition to building new interconnectors both within member states and across borders. Therefore, we strongly recommend that the general concept of smart grids be systematically considered in conjunction with the specific actions that can be delivered by smart technology such as guaranteed access to the grid for renewable energy and increased links to storage capacity (both large scale hydro pumped or thermal storage and emerging small scale solutions such as electric vehicles and heat pumps).

Smart grids should therefore be broadly understood as the range of information technology, including sensors, smart meters, programmable energy monitors or internet connected communications networks, that can help move our nationally focused, top-down energy system towards a trans-European web of small and large scale renewable production sources. Bringing about these "smart energy systems" – to integrate flexible production / consumption and cut energy demand - is an exceedingly urgent task that must be tackled evenhandedly: The biggest challenge for ERGEG will be to ensure for itself and for national regulators a guaranteed access to all new sources of data provided by smart technology, while preventing any abuse or leaking of such data. Not doing so will inevitably lead to loss of oversight and therefore control of the very market that regulators are tasked with overseeing.

Recommendations

- **Renewable access to the grid:** The European Union's Renewable Energy Directive (2009/28/EC) has guaranteed priority and unrestricted access to the grid for renewables, but with the caveat "*Subject to requirements relating to the maintenance of the reliability and safety of the grid*". Regulators will be tasked with implementing this decision - and smart technology will help provide the detailed information necessary for distinguishing genuine reliability and safety issues from attempts to influence the market to a particular company's advantage. However, because information will most likely be sent to those responsible for ensuring network security – utilities/TSOs - ERGEG **should ensure that EU and national regulators receive complete and transparent access to the data flows**. At the same time, and in line with the Renewable Energy Directive, ERGEG should ensure that additional measures are taken to minimise renewable electricity curtailment where it occurs.
- **Develop intraday and day-ahead electricity markets.** As the share of renewable energy progresses in line with the 2020 targets, increased cross-border trading will be necessary to balance variable supply and demand. The advent of shorter gate closure times should help reduce current market barriers to wind energy and support the optimal integration of variable renewable energy sources. Smart technology will facilitate the process by providing the market with far more accurate supply and demand predictions which, combined with advanced meteorological forecasting, will allow secure and high volume renewable electricity transfers. More radically, we must be prepared for novel trading concepts. For example, programmable household smart meters linked up to centralized dispatching systems could measure regional supply and demand and eliminate the need for intermediary traders. The result could be significantly lower energy costs – and reduced consumption as less standby production capacity would be needed. Regardless of the methods for buying and selling electricity, regulators must be directly involved in a neutral, centralised network management system akin to **air traffic control models**. In its recent "Project Discovery" publication, the UK regulator Ofgem seems to be suggesting such a regulatory model.
- **Free up transfer capacity in national and cross-border networks:** Sector enquiries made by the European Commission have underlined the difficulty of distinguishing genuine network congestion from attempts by utilities/TSOs to retain market control. Exact knowledge of the reasons behind lack of electricity transfer capacity is vital as it will determine the pros and cons of building additional interconnections (with all the associated additional costs, lengthy planning procedures and probable delays due to public opposition). Smart technology has the potential to provide the real time data – to which regulators must have guaranteed access – necessary to distinguish between the need for priority upgrades on the one hand, and tougher measures to boost competition, on the other.
- **Progressively replace the current concept of base load production with a combination of renewable energy sources:** Wind, solar, marine, hydro, biomass and geothermal electricity will add up to at least a third of Europe's electricity production by 2020, and will almost certainly increase thereafter. Using smart

technology for a combination of demand response measures to smooth out consumption and a better overview of real-time supply and demand will facilitate the progressive replacement of nuclear and fossil fuel generation with a flexible mix of renewables. To adjudicate debates between the different interest groups, ERGEG must be able to actively seek out and analyse the information provided by smart technology and use it for impartial “best policy” assessments.

- **Boost energy savings:** Variable pricing tactics, smart meters, sensors or energy monitors can help cut demand, yet contradict the natural inclination of all types of power producers to increase or at least maintain output. Meanwhile, increasingly large amounts of small scale energy production are coming on line to fulfill the 20% renewable target. Both trends – reduction and production – are primarily developing at Distribution System Operator (DSO) level, which is where smart technology will see its strongest development. We strongly urge ERGEG to consider **new regulatory models** for giving DSOs and other relevant organisations the mandate to carry out energy saving *and* integration investments while receiving a share in the profits.
- **Clarify and increase electricity storage conditions and capability:** In line with the principles of the new Strategic Energy Technology Plan (SET Plan) the Commission prepared a proposal for a Regulation concerning the security of gas supply, repealing the current Directive 2004/67/EC based on Article 95 of the Treaty. It will be important to evaluate this proposal and consider the lessons to be learned in the field of renewable energy storage, including financing of new storage capability and research.

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With special thanks for a great joint effort: Jorge Nunez, James Corre, Erica Hope, Daniel Freil, Florence Limet, Doerte Fouquet, Andrea Jelitte, Josche Muth, Luis Guilherme, Thierry Pommier, Mariangels Perez Latorre, Paul Wilczek, Frauke Thies, Jan Vande Putte, Mike Parr, Dirk Hendricks.