

## Accenture comments

Regards document :

Consultation paper  
ERREG  
E09-EQS-30-04

How to respond to this consultation:

Deadline: **1 March 2010**

Comments should be sent by e-mail to [smartgrids@erreg.org](mailto:smartgrids@erreg.org)

All responses except confidential material will be **published** on the website  
[www.energyregulators.eu](http://www.energyregulators.eu)

## 1.3 Questions for public consultation

### Section 1 – Introduction

1. Do you consider that networks, transmission and distribution, are facing new challenges that will require significant innovation in the near future?
2. Do you agree with the ERGEG's understanding of smart grid? If not, please specify why not.
3. Do you agree that objectives of reducing energy consumption impose the need for decoupling regulated companies' profit from the volume of energy supplied? How can this be implemented?

### Section 2 – Drivers for smart grids

4. Do you agree with the drivers that have been identified in the consultation document? If not, please offer your comments on the drivers including additional ones.

### Section 3 – Smart grid opportunities and regulatory challenges

5. Do you agree that a user-centric approach should be adopted when considering the deployment of smart grids?
6. How should energy suppliers and energy service companies act in the process of deploying smart grids solution?
7. Do you think that the current and future needs of network users have been properly identified in Section 3.3?
8. Do you think that the main future network challenges and possible solutions have been identified in Section 3.4 and 3.5 respectively? If not, please provide details of additional challenges/solutions.
9. Do you expect smarter grid solutions to be essential and/or lower cost than conventional solutions in the next few years? Do you have any evidence that they already are? If so, please provide details.
10. Would you add to or change the regulatory challenges set out in Section 3.6?

### Section 4 – Priorities for Regulation

11. Do you agree that regulators should focus on outputs (i.e. the benefits of smart grids) rather than inputs (i.e. the technical details)?
12. Which effects and benefits of smartness could be added to the list (1) - (7) presented in Section 4.1, Table 1? Which effects in this list are more significant to achieving EU targets? How can medium and long-term benefits (e.g. generation diversification and sustainability) be taken into account and measured in a future regulation?
13. Which output measures should be in place to incentivise the performance of network companies? Which performance indicators can easily be assessed and cleansed of grid external effects? Which are suitable for European-level benchmarking and which others could suffer significant differences due to peculiar features of national/regional networks?
14. Do you think that network companies need to be incentivised to pursue innovative solutions? How and what output measures could be set to ensure that the network companies pursue innovative solutions/technologies?
15. Do you consider that existing standards or lack of standards represent a barrier to the deployment of smart grids?
16. Do you think that other barriers to deployment than those mentioned in this paper can be already identified?
17. Do you believe new smart grid technologies could create cross subsidies between DSO and TSO network activities and other non-network activities?
18. What do you consider to be the regulatory priorities for electricity networks in relation to meeting the 2020 targets?

## Section 1 – Introduction

### 1. Do you consider that networks, transmission and distribution, are facing new challenges that will require significant innovation in the near future?

Yes. Even if the drivers for change are not the same the world over, for most of Europe, we see a number of important trends that will impact the grid: 1) distributed generation will change the grid from a centralized to a distributed network, with bi-directional power flows. 2) the consumer will transform from an inactive participant into an active participant. 3) significant growth in distributed generation and new types of loads such as electric vehicles will challenge the capacity, manageability and power quality of the grid.

This will require improved monitoring, decision making and control on the grid, impacting the core business processes of the network; and two-way interactions with the grid's users.

### 2. Do you agree with the ERGEG's understanding of smart grid? If not, please specify why not.

Yes, we agree with the overall nuanced considerations that ERGEG makes about Smart Grid. It is not obvious to define a smart grid, but it makes sense to recognize that it is in essence about the innovative market and commercial models and technologies that will be required to reach the ambitious European sustainability targets, by allowing the integration of large amounts of decentralized generation (among which renewable) and by engaging the end consumer in a more interactive way. At the same time, smart grids will help optimize the operation and asset utilization of the network. The key to achieve this will be to develop smart grids that are better measured and visualized, and that can be remote controlled and optimized. With time, levels of automation can be added.

We agree that it is important to recognize that smart grids is broader than smart metering, and that certain smart grid aspects can be built ahead of smart meters, but that many innovative services towards the end consumer are hard to imagine without smart meters.

Accenture recognizes elements "beyond the meter", in the home of the consumer, as part of the broader definition of a smart grid. E.g., demand side management requires integrated communication before and beyond the meter. ERGEG seems to incorporate this under "smart metering" (figure 2). We would suggest to use the term "smart home" (with energy management/demand side management systems, decentralized generation, smart appliances, electric vehicles, etc.), and reserve the term "smart metering" to remote digital meter reading.

### 3. Do you agree that objectives of reducing energy consumption impose the need for decoupling regulated companies' profit from the volume of energy supplied? How can this be implemented?

Making the grid fee calculation formula independent of energy use would be one way to convince regulated network companies to support energy usage reduction measures and roll out related technologies (such as smart meters).

More generally though, it would probably suffice that regulators approve regulated grid fee levels that do not endanger “reasonable profit levels” for regulated companies. E.g., if volumes decrease over the years, the regulated tariffs per unit of energy could be increased.

The downside to a scheme that removes the link between energy and fees due by the customer is that it reduces the incentive for customers to reduce the volume of energy they use. If a flat rate is suggested, care should be taken to introduce compensating mechanisms to still reward energy efficient customers.

## Section 2 – Drivers for smart grids

### 4. Do you agree with the drivers that have been identified in the consultation document? If not, please offer your comments on the drivers including additional ones.

ERGEG states (3.6) ‘In Section 2, the two main drivers for the development of smart grids were identified: legislation for carbon reduction and energy efficiency, a macro driver; and the specific needs of customers that will result from this legislation.’

In addition to the legislation and ‘traditional’ customer needs, Accenture sees increasing technology evolution (components and telecommunications becoming increasingly cost competitive), customer environmental awareness and aging grids also as important drivers. Even without the carbon reduction legislation, grid companies more and more would choose smart grid technology to better do core tasks (eg monitor and control grid status, solve interruptions of supply, etc.).

## Section 3 – Smart grid opportunities and regulatory challenges

### 5. Do you agree that a user-centric approach should be adopted when considering the deployment of smart grids?

Yes, in the sense that development of smart grids and regulation of this development focuses on realizing real benefits that generate value to the end-user/customer/inhabitant. What is important in this respect is that a broader societal benefits case is required which monetizes externalities as reduction in greenhouse gases and improved network reliability.

### 6. How should energy suppliers and energy service companies act in the process of deploying smart grids solution?

Energy suppliers and energy service companies should engage in dialogue with regulators and network companies, in order to ensure that **roles and responsibilities** of these parties vis-à-vis the network companies and the customers are clearly defined.

Further, they should ensure that their **future needs** will be supported by the investments that the network companies will make in the smart grid area, e.g., when rolling out smart meters. To elaborate their future needs, they will need to question their current business models and determine the way in which they intend to serve their customer base going forward, and what additional services they will want to offer.

Then, more concretely, they should provide **business requirements**, and co-design with the network companies all necessary adaptations and additions to the **processes and information exchanges** to

support the market, in a timely fashion (i.e., a few years upfront), to allow an orderly build phase of the “smart market” and smart grid.

**7. Do you think that the current and future needs of network users have been properly identified in Section 3.3?**

Yes, we believe there will be a group of new users of the network (generators and prosumers) who will require access to the grid and will need to find buyers for their electricity. And indeed there will be existing consumers who will expect reliable and affordable power, and some customer segments may be open to innovative and more interactive services and tariffs that would be offered by utilities to keep prices affordable in an increasingly de-carbonized world.

**8. Do you think that the main future network challenges and possible solutions have been identified in Section 3.4 and 3.5 respectively? If not, please provide details of additional challenges/solutions.**

What will be required of utilities going forward, is the integration of renewable and decentralized generation, taking into account network capacity, balancing impact, and commercial schemes to make these new types of generation economically viable; and incentive schemes for end-user active participation. Networks will need to manage capacity, operational security and network losses. This in turn will require better monitoring, modeling, and control of the network to support operations, network planning and optimization, and better information and intelligent control for generators and consumers.

Manufacturers of equipment and system integrators will need to provide cost effective solutions.

The challenges and corresponding solutions to make this happen will include aspects like

- Putting in place the right regulatory framework that sets the right incentives,
- Understanding the societal business case, including the various market parties and taking into account both monetary and non-monetary values.
- Deciding on a roadmap for roll out of various technologies, taking into account the need to have them at a certain point, and their technological maturity
- Managing the transformational change inside the utilities, where many core business processes and applications will need to be re-designed and replaced, and personnel will need to be trained on new policies and procedures.
- Developing and evolving skills of utility managers, engineers and workers
- Getting the broader public involved and on board
- Ensuring sufficient funding in the current tight capital markets
- Safeguarding data privacy and cyber security

**9. Do you expect smarter grid solutions to be essential and/or lower cost than conventional solutions in the next few years? Do you have any evidence that they already are? If so, please provide details.**

Next to cost, maintaining manageability will also be an important driver for investment in smart grids.

With regard to cost effectiveness, there is probably not a one-size-fits-all answer, nor is the decision to implement a smart grid a “yes or no” matter. Utilities would be advised to investigate which smart grid features and components are required in their specific situation, and which investments have the highest priority. It would make sense to make an individual business case and roadmap.

The business case should focus on the broader societal benefits case in which the benefits to all stakeholders are incorporated and in which externalities as reduction in greenhouse gases and improved network reliability are monetized.

#### **10. Would you add to or change the regulatory challenges set out in Section 3.6?**

Indeed, regulators would need to devise incentive schemes that will support utilities in experimenting with and adopting innovative business models and technologies, while keeping the end user in mind. Regulation and incentive schemes will often need to balance opposing interests<sup>1</sup> between market parties, and find a societal optimum, through sharing of risks, and defining the rights and responsibilities of the various market parties.

#### **Section 4 – Priorities for Regulation**

##### **11. Do you agree that regulators should focus on outputs (i.e. the benefits of smart grids) rather than inputs (i.e. the technical details)?**

Yes, indeed, regulators should not “tell utilities how to do their job”, and seek to define output based incentive frameworks.

##### **12. Which effects and benefits of smartness could be added to the list (1) - (7) presented in Section 4.1, Table 1? Which effects in this list are more significant to achieving EU targets? How can medium and long-term benefits (e.g. generation diversification and sustainability) be taken into account and measured in a future regulation?**

The list seems to include a broad and balanced mix of important values to be imposed on networks, such as sustainability, adequate capacity, connectability, security and quality of supply, efficiency, and the encouragement of transnational markets and investment plans. These values seem to be in line with Europe’s ambitions around sustainable, secure and competitive energy.

However, as brought forward in the position paper, not all aspects that can be imagined in the listed performance indicators, are under the control of the network operator.

An important question will be how to balance responsibilities and share incentives among various market parties, in a way that will lead to an overall societal optimum.

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<sup>1</sup> For example:

- Managing **opposing interests** between the commercial market parties (energy suppliers, esco’s) on the one hand and network companies on the other hand. Which one will be allowed to manage the “active prosumer” to support their needs? How can this be done without negatively affecting the other side?
- Managing **opposing interests** of offering “non-discriminatory access for all kinds of users (consumers, prosumers and producers) to the network and the common market.” (cfr §4.1) versus recognizing that some users, either by the nature of their use, or by the geographical location they have chosen, cause far greater stress and cost to the network than others – e.g., urban agglomerations are much denser and therefore more efficiently served by public infrastructure, than rural areas.

Also, depending on the specific history, situation and desired strategic priorities, which may differ from country to country, different relative weights might be given to the different KPI's.

**13. Which output measures should be in place to incentivise the performance of network companies? Which performance indicators can easily be assessed and cleansed of grid external effects? Which are suitable for European-level benchmarking and which others could suffer significant differences due to peculiar features of national/regional networks?**

There is not one answer to this question. The regulatory model will have to adapt to balance a suite of outcomes in which carbon reduction and security of supply take a more prominent place in the defined outcomes.

The design of the regulatory framework will differ from location to location and will need to reflect the legacy environment (level of market liberalization, age and history of assets, ownership structures, etc.), desired outcomes and proposed strategy for transition.

**14. Do you think that network companies need to be incentivised to pursue innovative solutions? How and what output measures could be set to ensure that the network companies pursue innovative solutions/technologies?**

Yes, as network companies are monopolies operating under regulator supervision, it is important that regulators include in their regulatory framework the right incentives to encourage pursuing innovative solutions.

We believe that it would make sense to distinguish between “proof of concepts”, “pilots”, “test zones” etc on the one hand, and full adoption and roll out on the other hand. These may require different sets of incentive schemes.

**15. Do you consider that existing standards or lack of standards represent a barrier to the deployment of smart grids?**

The lack of standards can certainly create a barrier on investment decisions, but on the other hand, a prematurely introduced standard that is too narrow can with time become a barrier to innovation.

When defining a standard, it should be broad and flexible enough to be future proof.

Next to technical standards that support business processes, it would make a lot of sense to “standardize” the business and functional information requirements involved in smart grids, through industry guidelines.

**16. Do you think that other barriers to deployment than those mentioned in this paper can be already identified?**

There is a lack of business model. We believe the roles and responsibilities of existing and new parties would need to be clarified in an early stage, so that each market party (network company, supplier, customer, prosumer, esco, etc) knows what part of the broader picture they are responsible for (and what not), and what other parties may expect from them, and therefore what smart functionalities and technologies they must investigate and deploy.

**17. Do you believe new smart grid technologies could create cross subsidies between DSO and TSO network activities and other non-network activities?**

In regulation, sufficient consideration should be given to the way that the costs incurred by the network companies will be ventilated to other market parties like suppliers and customers. It would be only normal that the investments in smart technologies would support business functionalities and services of the commercial suppliers; in that sense smart technologies are no different from the traditional network that is a monopoly which supports the different competitive market parties. The important thing is that different competing suppliers are supported by monopoly smart technologies in the same non-discriminatory way.

Of course, those areas where smart technologies are not provided by the network monopoly to the market, should be clearly delineated from those that are. Every competitive supplier can then offer such non-monopoly provided technologies (e.g., smart home devices) as part of their competitive offering to their customers.

**18. What do you consider to be the regulatory priorities for electricity networks in relation to meeting the 2020 targets?**

Priority should be given to concrete initiatives, such as rolling out smart meters, to get customers to act on realizing energy efficiency.

Such initiatives will need to be started in the very short term to reach the target of 80% of European consumers equipped with smart meters by 2020, since mass roll-out of smart meters is a multi-year project in itself, and require extensive preparation beforehand.