response to the

ERGEG position paper on smart grids

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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. The conventional grid was designed for one-way power flows and to achieve a high degree of security of supply nationally. In the future, even if the physical structure of the grid may change, the main challenge will be to incorporate large amounts of renewable energies with multi- directional power flows, and the involvement of final consumers in the energy supply system. The key to this transformation will be systems' integration, through communications and management of data flows.

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

We agree with the ERGEG definition of a smart grid. It is general enough to cover the main requirements of a future grid without getting lost in detail.
The statement in 1.2., "it is possible to have smarter distribution and transmission networks without smart metering" is misleading. As the Commission acknowledged in the Interpreting Note to the 3rd energy liberalization package, "smart metering is an essential first step toward the implementation of smart grids." It is possible to increase the intelligence of the grid above the metering system, but it would be "wasted intelligence". No smart grid will be able to meet the high expectations placed upon it and help the EU fulfill its ambitious energy and environmental policy goals without smart metering.

In addition, distribution system operators will need to have increased operational awareness of distributed generation, electric vehicles and consumer response to demand management programs. Operational awareness is essential in order to maintain stability of the grid, and this level of awareness is simply not possible without smart metering.

Smart Metering is the foundation of the smart grid.

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?

The dilemma of wanting grid-use fees to be no higher than necessary while encouraging and allowing and incentivising innovation on the part of the regulated grid companies is crucial to the development of smart grids. A flat grid-use fee, independent of volume, could de-couple volume from profit. If the flat rate is kept constant for several years, this could provide the "breathing room" necessary to allow a regulated monopoly to invest in smart grid technology.

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.

We agree with the broad categorisation of the two drivers. However, ERGEG sees legislation as an "indirect" driver, our experience has been that energy companies wait for regulatory certainty and specific requirements before investing – therefore, seeing legislation more as a "direct" driver. The needs of the grid users are also driven by the legislative requirements. Therefore, these could be seen more as the "indirect" push.

The above is true for regulated grid operators. In the case of energy retailers, the opposite relationship is true: the most direct driver is the needs of their customers and the legislative framework provides an indirect push.

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?

While it is not wrong to closely focus on the user, it is not sufficient. Any policy on deployment of smart grids must take a systemic view. Not only the users, but also the goals of energy and environmental policy must be considered and the needs of society as a whole to have an infrastructure that is up to the energy challenges of the 21st century.

The participation of users is necessary for the creation of a functioning liberalised energy market. At the same time, information and communication flows are prerequisite for end-user participation.

Smart grid deployment needs to contemplate the impacts on all stakeholders: users, generators, transmission and distribution system operators and retailers. In addition, smart grid deployments should fully take into account the social-economic benefits of a smarter grid.

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

Investments to realise the smart grids should be made by, triggered or initiated the DSO. To deploy a smart grid the roles and responsibilities must be clear. The investments that need to take place, need to be clearly allocated.

You need a clear regulation and a clear incentive for the retail market. The end consumer pull/push needs to be simple. Infrastructure investments should not be placed at the disposition of the final retail consumer. Energy suppliers and services companies will have a more passive role in the deployment of smart grids.

In the case of smart metering, for the large majority of the EU Member States, the DSO is the only reasonable entity to carry out a smart meter deployment. In the remaining counties the roll-out should not be delayed by a lack of identified entities. The DSO is responsible for supervising the infrastructure, and therefore needs the information on consumption. Leaving metering as part of the energy supply infrastructure will ensure a quicker and more complete rollout of smart metering at lower cost.

Competition should take place between energy suppliers who then can use that infrastructure to offer new and innovative products and services.

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

Yes. Of particular importance will be the growing group of "Prosumers". Although this group is small now, it will be one of the driving factors in the development of the smart grid. The statement in Section 3.3.3 is crucial: "the decarbonisation of electricity supply will cause real price increases and/or reduction in quality and reliability." While there are some who would disagree with that statement, the consequences of a decarbonised electricity supply are correctly described. Namely, that there will be an incentive for network and supply companies to offer new products and services to help consumers reduce the amount of electricity they consume and the price they have to pay.

In the description of services to "increase the elasticity of the demand side", a discussion of transparency is missing. In the current supply system, the distribution system is "blind". As mentioned above, transparency and information flows will be essential to the development of the smart grid, and this means down to the final consumer, and it is indispensible for the "prosumer". Smart metering will solve this problem of "blindness" on the distribution level by providing detailed information on energy consumption and costs. Among the reasons for a lack of demand elasticity now is that consumption is opaque.

8. Do you think that the main future network challenges and possible solutions have been identified in Section 3.4 and 3.5 respectively?

The main challenges for the future network have been identified in Section 3.4. However, some of these are being addressed already such as standardised communications protocols and interoperability. ESMIG actively supports the standardisation work being done in the under Mandate 441.

The premise is correct that smart grids solutions apply increased intelligence to the way that networks are planned, operated and maintained, and this will lead to new services being delivered at lower cost. However, while there is a need to develop "demonstration projects" a warning against "pilotitis" is appropriate. The emphasis on creating demonstration and pilot projects should not hinder the deployment of technology already available, such as smart metering.

In Section 3.5.4 "Network solutions for customers", we fully agree that the most significant difference between today's networks and the smart grid of the future will be at the customer/network interface. It is at this level where the grid is most "blind" today. Smart Metering is the means for direct communication to the customer, and we fully agree that two-way communication is a necessary prerequisite. No attempt at increasing energy efficiency either through consumption reduction or load shifting will be successful without final customer involvement. In order to unlock this potential direct feedback is essential

The evaluation of smart metering in Section 3.5.4 is correct, but stands in contradiction to the statement on page 14, that there can be "smarter " grids without smart metering (see

comments above). While it is true that smart grids encompass a much wider area than smart metering, smart metering is the essential first step towards a smart grid – it brings intelligence to the "last mile" between the grid and the final customer. Without this key element, the full potential of a smart grid will not be realised. Moreover, this is a technology that is already available.

The sooner smart metering is deployed, the quicker additional smart grid technologies can be built upon it. Today's smart metering technology can do all of the things required of it in a smart grid, and we can start deployment at any time.

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.

The expectation is certainly there that grid operations will be more cost effective with smarter grid solutions. There is no expectation that the prices for smart grids technology will rise in the coming years.

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

The regulatory challenges are well described in Section 3.6. The challenge for the regulators is to not only remove barriers to the adoption of smart grid technologies, but also to incentivise innovation by the network companies.

The benefits of many Smart Grids technologies, including Smart Metering, are spread throughout the energy supply value chain – from the end consumer to the DSO, by aggregation to the TSO and even to generation. Benefits also accrue to society as a whole in the form of a more modern infrastructure, increased energy efficiency and reduced CO2 emissions. The costs, however, are usually concentrated. It is the task of the regulatory authority to incentivise the grid companies into pursue innovative technologies and spread the costs of the smart grids development as fairly as possible among the market actors according to the benefits they derive – and this includes the final consumers.

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. technical details)?

Absolutely. Regulators should concentrate on the functionality of the smart grid and remain technology neutral. To do the opposite would stifle innovation rather than support it.

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 is complete. Benefits (1) and (5), increased sustainability and enhanced efficiency and better service in electricity supply and grid operation are the two most important elements in achieving the EU's 20-20-20 targets. In fact, all three of the 20-20-20 targets

depend on increased sustainability and efficiency in energy use and grid operations. The "enabler" and gateway to the grid is the smart metering system.

No matter how future benefits are quantified, the benchmark cannot be the "status quo" because the current, conventional grid will not be capable of meeting the future challenges described in the position paper.

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 ?

The outputs (benefits) should not be cleansed from the performance indicators, but should be taken into consideration when incentivising grid companies to invest in innovative technologies.

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?

Network companies are by nature conservative, as regulated monopolies they are not risk-takers. Regulators need to articulate the functional requirements of the smart grid and give the network companies the financial "breathing room" to invest in innovative solutions.

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

It is not just a matter of writing standards. We support the EU mandate M/441 for smart metering standardisation, but also want to stress the fact, that open standards are only a necessary condition for interoperable products. The commitment of the utilities to invest in products according to a specific standard and the commitment of the manufacturers to invest in the development of products according to a specific standard are decisive. The standards cover a comprehensive set of functionalities, but a product only supports those functions for which a market exists. Interoperability between separate products can only be achieved if the providers of those products have tested the interoperability and stand behind it.

Writing standards is a technical exercise, providing an interoperable product is a commercial exercise.

Smart meters have already been deployed in several Member States. Most notably Italy and Sweden have close to 100% coverage. Further area-wide rollouts are now taking place in the Nordic countries. France and Spain both have country-wide rollouts planned.

The standardisation mandate could, however, take away an argument of the "feet draggers" that no rollout can take place because, "There are no standards". There are already enough standards available that a smart metering can be deployed, if the network operator decides which standards it wants to use.

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

One of the biggest barriers to deployment is uncertainty: uncertainty in regard to technology, standards and investments.

The technology is available and the current standards are sufficient. What is needed is clear commitment to smart grid development on the part of the regulators, so that network operators will be encouraged to invest in smart metering and smart grid technologies.

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

Not, if a clear delineation is made between smart grid infrastructure – which includes smart metering - and the parts of the system, such as personal energy management, home automation, etc. that rightfully belong in the realm of the competitive suppliers.

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

The main priority should be to start deployment of smart metering/smart grids technology as soon as possible. Smart Metering is the foundation of and an essential first step toward the development of the smart grid, and the technology is available right now.

If we wait until 2020 for 80% of European consumers to be equipped with smart metering, and until 2022 for 100% coverage (assuming the economic analysis is positive), we have no chance of achieving the 2020 targets. All three of these targets depend on the grid for their realisation, and the gateway to the grid from the final consumer/prosumer is the metering system. Therefore, meeting the 2020 goals depends on a quick deployment of smart metering technology, which can then be built upon to develop the smart grid.

About ESMIG

The European Smart Metering Industry Group (ESMIG) provides knowledge and expertise on Smart Metering and related communications at a European level. ESMIG's members are the leading companies in the European Smart Metering market. ESMIG membership is open to any company supplying utility metering products or services within Europe.

Member companies cover all aspects of Smart Metering, including electricity, gas, water, and heat measurement. ESMIG membership represents the entire value chain from meter manufacturing, software, installation, consulting, to communications, data management and system integration.

By giving support to the European Union and its Member States as well as through co-operation and partnerships with relevant stakeholders, the Industry Group aims to assist in the development of national and European-wide introduction, rollout and management of Smart Metering solutions.

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