

E.ON's response on EREG's Public Consultation Paper on Draft Guidelines of Good Practice on Regulatory Aspects of Smart Metering for Electricity and Gas

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General Comments

As the roll-out of smart meters in Europe is taking shape, E.ON welcomes this EREG consultation. As of today E.ON has installed about 1.5 million smart meters across Europe testing different technologies in different regulatory environments. E.ON operates around 1 million smart meters for electricity in Sweden based on Power Line Communication (PLC) and GPRS. In Spain E.ON is the leading company in terms of coverage with smart meters having over 175.000 smart meters based on PLC and GSM/GPRS technology in place. In Italy E.ON provides about 35.000 customers with smart meters based on PLC technology. At the same time E.ON carries out a number of smart metering trials in UK, Germany, Czech Republic, Slovakia and US including smart metering pilots for electricity, gas and with In-Home-Units. Therefore, E.ON would like to take the opportunity to comment on EREG's draft-recommendations on regulatory aspects of smart metering.

We especially agree on the numerous benefits of Smart Metering identified in this consultation paper. From our perspective, heavy investment into smart grids is a prerequisite to transform Europe to a low-carbon economy. As described by EREG smart meters are an integrated part of smart grids. However, the regulated roll-out of Smart Meters should focus primarily on shaping a framework for basic supply functions of smart metering services while premium value-added services should be left to competition. Such framework should allow all players in the energy market and especially the customers to opt for the benefits of smart metering. At the same time additional costs for society could be reduced and competitive forces would trigger innovation and improved customer services. In addition to that we would like to stress that costs connected to mandatory services or functionalities of smart meters in a roll-out through regulated businesses should be accepted by regulators without any delay or discount.

Section "Customer Services - Electricity"

Recommendation 1 - Information on actual consumption, on a monthly basis

Transparency on actual consumption is a key benefit of smart metering. Smart meters are a necessary device to allow customers timely and transparent information about their consumption.

Some countries like the UK mandate an In-Home-Unit (IHU). In our view such a device should not be generally mandated within the EU. A mandated IHU improves the transparency for the customer in very close proximity to their living situation at home but it also substantially increases the costs. Offering an IHU is a service that could principally be left to competition. One could imagine various ways for access to the consumption data for example through currently evolving smart phones applications. However, in countries where an IHU is legally mandated additional monthly information about actual energy consumption should not be mandated and be left to the choice of the customer.

Recommendation 2 - Accurate metering data to relevant market actors when switching supplier or moving

Accurate metering data supports the market competition by ensuring that suppliers have access to the relevant information to allow a change of supplier to be processed quickly and a customer's account to be correctly managed - another important benefit of smart metering. However, adequate processes for the handling of the data and the management of customer switching are defined on the national level based on the national regulation that is in place.

Recommendation 3 - Bills based on actual consumption

Customers paying according to consumption is a natural basic level of service today. For household customers there usually is a billing and a final clearing at least once per year. Billing and clearing could be done more frequently where smart metering is in place, adequate market rules across the entire value chain exist and processes allow such procedures. However, customers should be able to choose from a range of payment options offered by suppliers, for example many customers prefer a flat monthly payment throughout the year rather than seasonal billings with higher bills in the heating period. New payment options can also be envisaged in the future, for example "energy accounts" or the like. In some markets, prepayment solutions exist and should not be hindered by new regulations.

Recommendation 4 - Offers reflecting actual consumption patterns

We support efficient use of energy and we expect offers which reflect actual consumption patterns to contribute to a more efficient use of energy. Nevertheless, the development of products to provide energy is a natural element of competitive markets. Without a commercial logic and an appropriate customer requirement it would be inappropriate to mandate supplier products.

However, if smart meters are in place and suppliers want to make offers that reflect the actual consumption patterns the system of standard load profiles that are currently used for the household customers supply should be adapted to the new market. Regulators should focus on the discussion of further developments of the load profile methodology and system.

4a) Question to stakeholders:

When interval metering is applied, which interval should be used for customers and those that both generate and consume electricity? Please specify timeframes and explain. 1. Less than half an hour

2. Half an hour

3. One hour

4. More than one hour

There is a trade-off between the granularity of the data and the incurred cost. It will be important that the interval is in line with existing balancing and clearing mechanisms in the different markets and that the format for the data exchange is the same as the one used for load metered customers.

4b) Question to stakeholders:

When Time-of-use (ToU) registers are applied for customers and those that both generate and consume electricity, what would be an appropriate number of registers? (Comment: In this case, registers are equivalent to prices)

It is very difficult to foresee what an appropriate number of registers is or which timeslots are appropriate. For the offers, that reflect actual consumption patterns it is necessary to measure the load profile which ought to be used for billing processes. In order to have Smart Meters that are robust and future-safe, it is recommended that the configuration of ToU registers is easily configurable in the smart metering systems, and that ToU consumptions are transparent to customers by other means than meter displays.

Recommendation 5 - Power capacity reduction/increase

With regard to the development of smart grids, we see a real need to ensure that the smart meter data management specification enables the use of smart metering data for both planning and operational management of the distribution grid. We also support a future development of implementing demand side response and load limiting of customers following the roll out of smart meters as this could become an instrument of optimal handling of grid restrictions. It could also be a means to handle peak power demands from a generation perspective of the management of the power system. With respect to this possible "dual-purposes", it has to be carefully considered how this functionality should be implemented in the different markets.

However, we have to acknowledge the importance of consumer protection and would therefore leave the determination of policy in this field to the member states.

Recommendation 6 - Activation and de-activation of supply

ERGEG proposed as a basic function activation and de-activation of supply that covers customer requirements and refers to the issue in the following way: "Procedures and timeframes within the regulatory framework and contracts should always be applied when activation or deactivation is initiated by a party other than the customer." We support the recommendation that smart meters should provide the ability to remotely disconnect a property for either safety, engineering reasons or during a prolonged change of tenancy.

In some countries pre-payment systems are commonly used. In these cases there should also be the ability to use a remote de-activation or remote switch to pre-pay for credit management purposes within an appropriate credit management process, to limit the cost of bad debtors.

Recommendation 7 - Only one meter for those that both generate and consume electricity

Such a meter should measure generation, consumption and load fed into the grid. To have this within one meter should in principal reduce the cost of smart metering implementation and is therefore something we would support as an aspiration. But there may be some technical situations where this is not possible and therefore there needs to be a degree of practical pragmatism applied to the implementation of the recommendation by national regulators.

Recommendation 8 - Access on customer demand to information on consumption data

Customers should have access to their data. The format of the data depends on the smart metering technology which is in place at his home and the product the customer has chosen. Therefore the provision of this information for the customer and the cost connected to it should be in principal left to the market.

It should be left to the member states to ensure that the provision of free information is kept to a simple minimum that is acceptable to meet the aspirations of consumers within the member state. We are sure that competitive forces will ensure customer-oriented information levels related to the relevant designs of products.

In the GB market the proposed requirement for customer to be given an IHU should be seen to satisfy this requirement for the provision of consumption data.

Section "Optional recommendations Customer Services - Electricity"

Recommendation 9 - Alert in case of non-notified interruption

This is a worthy aspiration but up to now we think that it is not justifiable on the grounds of cost. It would require meters to be installed with either batteries or super-capacitors that have cost implications in terms of the initial hardware production and on-going maintenance.

Therefore at this point we are not able to support the inclusion of this optional recommendation.

Recommendation 10 - Alert in case of high energy consumption

It is very subjective from a customer point of view what is considered as "high" consumption. Moreover, there are different ways to ensure an alert in case of high energy consumption. Lights of an In-Home-Unit, an alert via short message system (sms) or internet options would be available. We are positive that competition will ensure such offers for customers demanding such a service in relation to design of supply products. As the implementation of such a service including the respective system to inform the customer principally leads to higher costs and is challenging to implement, we would not recommend such an alert as mandatory.

Recommendation 11 - Interface with the home

An interface with the home can be one option out of many for a customer. As such a device leads to additional costs we would not recommend such a device as a mandatory part of the smart meter. To make use of the interface will also be based on the customers' willingness to invest in equipment with such interfaces.

Recommendation 12 - Information on voltage quality

We see basic voltage data as very important for the development of smart grids on the distribution level as it allows the evaluation of LV networks in the future, particularly with wide scale adoption of electric transportation, heating and distributed generation. However details still have to be defined and it should however, be left to the DSO to decide about implementation. Moreover, with regard to usage of this data it has to be taken in consideration that there are a number of interpretations of voltage quality and significant differences between networks in different member states. We would therefore suggest that it should be left to individual member states to choose to implement it via the most appropriate technical solutions for their markets.

Recommendation 13 - Information on continuity of supply

We would support this proposal if the measure/logging function is given anyway. It is not useful if this function yields to a smart meter with a battery backup.

Recommendation 13 - Question to stakeholders:

What further services should be envisaged in order to allow consumers and those that both generate and consume electricity to be aware and active actors in smart grids?

We think that smart metering will be the basis for many new services offered to customers and small producers. The development of these services should be left to competitive forces.

Recommendation 14 - When making a cost benefit analysis, an extensive value chain should be used

From our perspective smart metering has many benefits for all participants of the energy market. We think that an extensive value chain might be adequate as it covers the full range of possible benefits of smart metering. The GB and French Government for example have already undertaken its cost benefit analysis and did use an extensive value chain.

The potential benefits as listed by ERGEG could be a reference for all member states where the cost benefit analysis is still pending. In our point of view the three most important benefits may be the better information (more frequent, more detailed, higher quality of data), the possibility for new services and the better integration of renewables in the system that can be highlighted. However, the full customers' benefits listed in ERGEG's drafted GGP can only be achieved if market rules across the entire value chain were adopted accordingly.

Recommendation 15 - All customers should benefit from smart metering

Many benefits of smart metering can only be fully exploited if smart metering is the rule and not the exception. In addition to that a full-roll-out of smart meters will bring synergies in procurement, installation and usage. Therefore, we agree that – if the incurred costs are fully accepted by regulatory agencies - smart metering roll outs should aspire to cover 100% of the energy consumers although there may be some technical constraints that stop smart meters being deployed in all circumstances.

Recommendation 16 - No discrimination when rolling out smart meters

We would support this recommendation if the cost benefit analysis results in a full roll-out.

Section "Minimum Customer Services – Gas"

Recommendation 17 - Information on actual consumption, on a monthly basis (gas)

Transparency on actual consumption is a key benefit of smart metering and smart meters are a necessary device to give customers timely information about their consumption. Because gas is mainly consumed seasonally frequent information about the monthly consumption is mainly beneficial for the winter period.

Some countries like the UK mandate an In-Home-Unit (IHU). We think that such a device should not be generally mandated within the EU. A mandated IHU improves the transparency for the customer in very close proximity to their living situation at home but it also substantially increases the cost. Offering an IHU is a service that could principally be left to competition. One could imagine other ways for access to the data for example through the currently evolving applications for smart phones etc. However, in countries where an IHU is mandated additional monthly information about the actual consumption should not be mandated and be left to the choice of the customer.

Recommendation 18 - Accurate metering data to relevant market actors when switching supplier or moving (gas)

Accurate metering data supports the competitive market by ensuring that suppliers have access to the relevant information to allow a change of supplier to be processed and a customer's account to be correctly managed. This is another important benefit of smart metering. However, adequate processes for the handling of the data and the management of customer switching are defined on the national level based on the national regulation that is in place.

Recommendation 19 - Bills based on actual consumption (gas)

In some countries the gas quality is not constant and can only be measured with hindsight. Therefore, monthly billing should not be mandated. Moreover, due to the seasonality of gas consumption many customers prefer a constant monthly payment to seasonal billings with very high bills in the heating period.

Recommendation 20 - Offers reflecting actual consumption patterns (gas)

We support the efficient use of energy and we expect that offers that reflect actual consumption patterns will contribute to a more efficient use of energy. However the design of products for energy supply should be left to competition. Without a commercial logic and an appropriate customer requirement it would be inappropriate to mandate supplier products.

However, if smart meters are in place and suppliers want to make offers that reflect the actual consumption patterns the system of standard load profiles that are currently used for supply of household customers must be adapted to the new environment. Regulators should engage in a discussion about the further development of the load profile system / methodology.

Recommendation 20a) Question to stakeholders:

**When interval metering is applied, which interval should be used for customers?
Please specify and explain.**

- **One hour**
- **One day**
- **One week**
- **Other**

There is a trade-off between the granularity of the data and the incurred cost. It will however be important that the interval is in line with existing balancing and clearing mechanisms in the different markets and that the format for the exchange of data is the same as the one used for daily-metered consumers within the respective member states.

20b) Question to stakeholders: When time-of-use (ToU) registers are applied for customers what would be an appropriate number of registers? (Comment: In this case, registers are equivalent to prices)

Classical gas meters just provide pure consumption information. All electronic applications of a smart gas meter increase the direct and indirect costs of the utility devices in terms of:

- The necessary backend data processing to derive billable data information for customers from consumption, gas type, pressure & temperature.
- As gas meters are not connected to the electricity grid, they need a battery to enable the communication of data. Every communication exchange stresses the battery of a smart meter. Thus an increase in registers directly leads to a reduction of the battery life cycle and makes a scheduled and efficient replacement impossible.

Additionally gas smart meters with electronic/ultrasonic measure units have a calibration cycle being clearly below classical meters. In Germany for example smart gas meters with an electronic measure unit need to be replaced after 5 years instead of 13 years of old a cheaper meters.

Recommendation 21 - Access on customer demand to information on consumption data (gas)

Customers should have access to their data. However the format of the data depends on the smart metering technology which is in place at his home and the product the customer has chosen.

Therefore the provision of this information for the customer and the cost connected to it should be in principal left to the market.

It should be left to the member states to ensure that the provision of free information is kept to a simple minimum that is acceptable to meet the aspirations of consumers within the member state. We are sure that competitive forces will ensure customer-oriented information levels related to the relevant designs of products.

In countries where customers use an IHU the IHU equipment should be seen to satisfy this requirement for the provision of consumption data.

Recommendation 22 - Hourly flow capacity reduction/increase

This would seem potentially dangerous and is probably not either technically possible or desirable. This recommendation would be better addressed by the deployment of advanced thermostat controls than by limiting the fuel used to produce the heat via a smart meter. Comments regarding energy consumption of a battery based device see question 20b.

Recommendation 23 - Activation and de-activation of supply

This functionality of a smart gas meter shall be considered under cost and security aspects.

Recommendation 24 - Alert in case of high energy consumption

There are different ways to ensure an alert in case of high energy consumption. Lights of an In-Home-Unit, an alert via short message system (sms) or internet options would be available. We are positive that competition will ensure such offers for customers demanding such a service in relation to design of supply products. As the implementation of such a service principally leads to higher costs and is challenging to implement, we would not recommend such an alert as mandatory.

Recommendation 25 - Interface with the home

With reference to question 20b, there could be technical implications with such an interface, due to the fact that most of the gas meters are battery operated, it will also stress the lifetime of the battery, leading to shorter revision intervals.

As such a device leads to additional costs we would not recommend such a device as a mandatory part of the smart meter. To make use of the interface will also be based on the customers' willingness to invest in equipment with such interfaces.

Recommendation 26 - When making a cost benefit analysis, an extensive value chain should be used

From our perspective smart metering has many benefits for all participants of the energy market, Due to the limited applications for gas (mainly heating and cooking) and the technical restraints (only battery driven smart meters), we think that the benefits of gas smart meters are somehow smaller compared to electricity. However, an extensive value chain might still be adequate as it covers the full range of possible benefits of smart metering.

The potential benefits as listed by ERGEG could be a reference for all member states where the cost benefit analysis is still pending. Out of these benefits maybe the two most important ones are better information (more frequent, more detailed, higher quality of data) and the possibility for new services. However, the full customers' benefits listed in ERGEG's drafted GGP can only be achieved if market rules across the entire value chain were adopted accordingly.

Recommendation 27 - All customers should benefit from smart metering

Many benefits of smart metering can only be fully exploited if smart metering is the rule and not the exception. In addition to that a full-roll-out of smart meters will bring synergies in procurement, installation and usage. Therefore we agree that – if the incurred costs are fully accepted by regulatory agencies - smart metering roll outs should aspire to cover 100% of the energy consumers although there may be some technical constraints that stop smart meters being deployed in all circumstances.

Recommendation 28 - No discrimination when rolling out smart meters

We would support this recommendation if the cost benefit analysis results in a full roll-out.

Section "Data security and integrity - Electricity and Gas"

Recommendation 29 - Customer control of metering data

A smart meter with smart grid functionalities will provide consumption data and power quality data. Data on power quality data (e.g. voltage quality), and information about power outages are from our perspective important for the overall operation of the grid and should therefore, be available for the DSO. With regard to consumption data, we think that respective rules for data security and integrity should be clearly defined and ensured within each member state.