

**EREGE DRAFT GUIDELINES OF GOOD PRACTICE ON REGULATORY ASPECTS
OF SMART METERING FOR ELECTRICITY AND GAS**

**Response on behalf of
Eurogas's Distribution System Operators Committee**

1. Introduction and General Comments

The Distribution Committee of Eurogas welcomes the opportunity to comment on this initiative by EREGG, which will be of great value in supporting the deployment of smart metering across Europe as required in the gas and electricity directives and that will have an important impact on the different involved stakeholders like customers, network operators and suppliers.

General Provisions and Objectives: Contrary to the situation in the electricity market, natural gas has to compete with substitute energies e.g. heating oil or wood chips. To maintain a level playing field, smart metering shall only be introduced if the cost to consumers is balanced by financial savings in an at least equal amount. As the scope of functionalities is of great influence on the associated cost, the definition of minimum standards has to take into account the level of possible savings.

If the CBA is prepared for a wide group of stakeholders and minimum services are imposed on the industry as indicated in 1.3, an economic compensation shall be considered for the meter investor if the net present value of the investment is negative.

Every MS shall decide, together with the gas industry and consumer organizations, which functionalities are interesting for consumers taking into account the cost/benefit ratio.

We disagree that the cases for electricity and gas are studied simultaneously and with the same criteria for:

- Functionalities
- Benefits
- CBA

Because the two industries and services are different and therefore the assumption of equal conditions may result in misleading conclusions in some cases.

Many of the recommendations mentioned in the GGP require not only an active participation of DSO, supplier and Customer but also an active cooperation in the execution between the parties involved to be effective at all. We also would like to point out that the estimation that providing information to customers and suppliers will automatically result in changing behavior and better offers to those customers is rather wishful thinking and a very small basis to invest into smart meters.

2. Detailed Comments

Background and Scope (6th paragraph): The concept of gas smart grid is unclear for both the consumer, the gas industry or for regulators. On the other hand, the benefits achievable from gas smart grids are neither clear not relevant.

Point 1.2. Problem Identification: Roll out should be adopted only if it is useful and economic, the results of a CBA have to be positive and the roll out decision should not be made automatically if no CBA is made before Sept-2012.

Point 5. Customer – Services gas: The selection of Measurement of Gas Pressure compensation as mandatory functionality would require the replacement of all meters. In this case, economic approaches such as the retrofit of existing meters with communication modules would not be possible. We don't think the adoption of this functionality would help to achieve a positive CBA. It appears that this paragraph gives the opinion of ERGEG on the MID, in their eyes it apparently is insufficient. This can be interpreted that they are in favor of changing the MID. This is outside the scope of this GGP and not part of their task.

Recommendations 17 and 27: There is a difference between information to customers (which means actively forwarding the information) and information for (or available to) customers (which requires the customer to retrieve it). There are huge differences in cost involved, in particular as providing information to the customer in a large number of cases is equivalent to printing and sending a letter. As this results in unnecessary costs and use of resources it should be sufficient that the information is available to the customers on a monthly basis.

The obligation to equip customers with very low consumption (e.g.: use only for cooker and water heater) with smart meters has no practical justification. For areas with very low gas consumption for heating, smart metering does not provide any benefit to the consumer either. In these cases, the possibility for the consumer to manage the gas consumption is almost negligible. For these clients, receiving information on a monthly basis would be sufficient and estimations in months without meter reading for clients with very low consumption are enough to be informed on gas consumption.

Segmentation of consumers by annual gas consumption, both for the installation of Smart Metering and to the determination of the frequency of information, shall be considered when preparing the CBA in each MS.

Time frame of information has an important economic impact on the CBA. For instance, hourly information transmission means 24 x 30 transmissions per month. A higher number of transmissions leads to higher communication costs, lower lifetime of batteries and higher data management costs.

Recommendation 18: For the purposes mentioned in the caption (switching supplier and moving) registering of data and interval metering is not required. For switching supplier and moving, a daily remote reading of the meter is entirely sufficient for residential customers.

Recommendation 19: When the consumer is given the opportunity to provide the actual meter reading, bills reflect consumer's actual consumption. Remote Reading therefore is not the only way to get accurate bills.

It is indicated that customers should no longer have to accept estimated energy bills. Flexibility shall be considered in case of unexpected technical problems (lack of coverage, connectivity problems, equipment failures, etc.).

Recommendation 20: This functionality can be interesting in the case of electricity as the cost of generation varies hourly but has limited practical implementation for the gas market where hourly or seasonal tariffs are not common. In electricity, a relative standard consumption pattern during a day can provide standard daily profiles (usually a two peak profile) and help to select different time periods to provide economic signals. This can't be translated into the gas market, where consumption patterns are more strong on a daily basis and based on different factors such as (temperature, workable day or not). In mass market, the gas consumption is very sensible to heating (temperature). In most gas markets, the hourly information it is only necessary for large industrial clients and electricity producers and only for operation purposes. It is important to remind that is relatively frequent that those type of consumers account for most of the total consumption in the gas system.

If Balancing is carried out with daily frequency, then offers could be possible on a daily, weekly or monthly basis. Again, this will be of limited practical relevance, as we do not see much interest for gas mass market consumers to shift the gas uses with this seasonal periods.

For gas we recommend the transmission of information on a daily basis (one transmission per day of daily consumption) for residential and commercial customers. Increasing the frequency may make sense for large consumers (industry and electricity generation) whose consumption may affect the operation of the system. This type of clients varies in each country.

We foresee three issues related to recommendation 20. 1) The CBA is based upon the remote reading for billing purposes; the costs of more frequent readings – for other purposes than billing – are not within the CBA. 2) Does the consumer and consumer's organizations agree with more frequent reading seen from a privacy perspective? 3) How does the allocation of actual usage work out, if most households today are allocated on the basis of profiles?

Recommendation 21: If the meter data cannot be accessed by the customer directly, then access should only be given to data up to the latest reading of the meter. Just furnishing the information on consumption without corresponding guidance will be of little use to the consumer. In contrast to electricity consumption the consumption of gas for heating purposes is subject to a variety of complex influences (e.g. weather conditions, demand for hot water, length of occupancy, number of occupants, solar radiation etc). Therefore, if consumers consider this information valuable, they must pay for it since higher frequency of transmission of information leads to lower battery life and higher maintenance costs. The implementation of such a fee could be included as a recommendation to balance the cost and benefits among the stakeholders while assessing the CBA.

Recommendation 22: This benefit may be interesting for electricity but we cannot understand why it has been also proposed for the gas industry. In almost all cases, tariffs in the liberalized market are not linked to hourly flow or capacity for residential consumers. The customer can reduce the hourly flow rate simply by using less gas through e.g. heating to lower temperatures. This is, however, not equivalent to a reduction of capacity. The customer can only choose a reduced flow rate, not a reduced flow capacity. There is no remote management of capacity except turning the installation on or off. This approach has not been applied in any European Country. In electricity power capacity control is now a reality in most EU member states, and mass market consumers usually have different power capacities depending on their needs, but it has never been used for gas mass market consumers. Therefore, we do not see any value for the consumer or the gas system by including this functionality. If consumers consider this information valuable, they must pay for it since higher frequency of transmission of information leads to lower battery life and higher maintenance costs, and different meter equipment with higher investment costs would have to be installed.

Recommendation 23: Remote Enablement/Disablement shall be considered as an optional functionality for the DSO due to the safety issues associated to activation. If activation is not included as functionality for safety reasons, the benefits of this functionality are considerably reduced. Disablement would provide a stronger benefit in countries where meters are installed inside the houses and are not accessible. Suppliers will have the benefits of this functionality that will allow shutting down customers with unpaid debt. Therefore, a fee paid by the supplier could be established in those cases. The implementation of such a fee could be included as a recommendation to balance the cost and benefits among the stakeholders while assessing the CBA.

Recommendation 24: The majority of gas supplied is used in heating appliances. Correct selection and maintenance of the appliance, and good thermal insulation are the means to keep consumptions as low as possible. Sudden high increases in consumption are not common for well maintained gas appliances. Alarms should not replace correct maintenance. To avoid a high increase in gas consumption due to gas leakages devices such as flow limiters are available. Moreover, the way this recommendation is phrased implies continuous monitoring of

the customer's gas consumption by the gas supplier, in near real time. This is likely to be very costly.

Recommendation 25: The way of managing the interface with the home should be clearly established before the start of the roll out. The different possibilities affect both the CBA and the metering equipment. If a decision is made after the start of the roll out, the replacement of installed smart meters to support additional functionalities should not be done before the end of their life.

Recommendation 26: The NPV for the investment shall be calculated for all involved stakeholders. If CBA for extensive value chain is positive, economic compensations (see comment on point 6) shall be considered for those stakeholders having a negative NPV.

Point 6.1 Potential Benefits for customers: The enumeration of benefits in the paper is in a very general and hypothetical manner. On inclusion into a CBA they have to be clearly set out and defined. Inserting values for generally defined benefits will render the analysis useless.

- A) Customer information in itself is not a benefit; the customer has to be able to do something useful to him with the information;
- B) Load shedding is useful only for electricity but not for gas. No possible application for residential gas customers (see comment on Recommendation 22). In fact, the manual reopening of the shut down clients (security reasons) makes impossible to solve the system pressure problems by shutting down domestic consumers under an emergency.
- C) Reduction of peak load is useful for electricity but not for gas (see comment on Recommendation 22);
- F) Possible new services have to be defined in detail to be able to assess their CBA-contribution;
- H) What is the appropriate measure for that? We do not think that having real consumption instead of estimated consumption in a switching is going to encourage much the consumer switching.
- I) It is not clear why the "quality" of billing should improve. Will customers faced with more information be less confused in the future and, therefore, less likely to complain?
- J) This benefit applies mainly to the electricity case. Smart meters for gas will improve the operability of the network only marginally, if at all;
- K) See remark to C;
- L) This benefit is useful for electricity but is marginal for gas where hourly data aggregation is not useful. Most of European countries have hourly data aggregation for all large consumers (large industry and power generation) through remote reading;
- M) See remark to J. Balancing depends on the overall state of the system. Smart meters for mass market may only contribute to a more accurate allocation of the balancing energy used to individual suppliers. We estimate that the value added for gas is insignificant since the consumption of the mass market is only marginal related to the large industrial and electricity production clients (who usually already have AMR installed). The impact of this benefit in some southern European countries can be not relevant due to the low contribution of the residential consumption to the total national gas consumption; for instance in Spain the total consumption of clients having annual consumption greater than 5 GWh/year (at present with mandatory automatic meter reading) represents 85 % of the total Spanish gas consumption;
- N) Remote disconnection does not necessarily contribute to network security in gas (see comment on B) and reconnection has associated safety problems.

Point 7 Roll-out of smart meters - gas: That a time table should be prepared and the roll-out take place hinges critically on a positive result of the CBA to be conducted. If the CBA is positive a decision on the roll out can be taken. For its implementation observance of the following principles is crucial:

- The roll out time table is prepared in accordance with technical and logistical parameters
- The level of minimal services is properly defined.
- The Project Management is with the Metering Service/DSO company
- Interoperability at national level and preferably also at international level is assured.

We totally agree on the inefficiencies associated with partial installation of smart meters (new connections or request by consumers) and we think a recommendation should be included: "Replacement of old meters by smart meters should be up to the stakeholder in charge of the investment in order to increase the efficiency of the process".

We also agree to exploit possible synergies between gas and electricity. We would include a recommendation: "Common communication networks for electricity and gas should be allowed whenever is possible and a positive CBA is assessed".

Recommendation 27: For the gas system, the state members could assess a positive roll-out affecting less than 80% of the consumers. Only the customers that have a positive roll-out CBA would be eligible to obtain a smart meter.

Recommendation 28: The way to carry out the rollout should be established as it has an important impact on the outcome of the CBA. A random rollout at the request of the consumer would have a negative impact on economic outcome relative to a rollout organised by the entity in charge of the investment. Nevertheless, the roll-out strategy should be based on maximization of the efficiency and would have to avoid discriminatory behaviours or criteria for those clients finally included in the roll-out.

Recommendation 29 data security and integrity - electricity and gas: The laws and market rules must clearly define the scope and the procedures governing distribution of data. Market participants should not have to check the admissibility on a case by case basis. A second point to this recommendation is that there must be a clear understanding between the data that is used for network purposes (balancing, load shedding, capacity calculations) and data that is necessary for billing or energy services purposes.

3. Cost benefit analysis – gas conclusions from the Eurogas Distribution committee report:

Eurogas DSOs have prepared a report on the CBA of the smart metering rollout including a detailed technical review of possible functionalities, possible communication systems and a methodology on how to assess the CBA considering all the value chain. We are interested in presenting to ERGEG representatives the report and the conclusions.

Some of the following conclusions of the report could be included as additional recommendations:

- **Smart meter business cases have to be developed on a National Level.** A unique European scope is not suitable because of the differences in the structure of the gas industry, regulation, climate and environmental drivers between countries.
- The **benefits of implementing smart meters in the case of gas differ significantly from the electricity case.** For gas benefits for the consumer are lower, costs for the DSO are higher (use of batteries), the investment by the DSO is higher (cost of shut-off valve

etc.), the possibilities for consumers to save gas or use it more efficiently are lower (heating and cooking cannot be reduced or postponed to other periods) and the range of possible services provided by DSOs or suppliers to consumers is also lower.

- The assessment of benefits and costs shall be done on the basis of real-life assessments and not based solely on theoretical considerations and needs to be agreed with the investor. The national regulatory authorities have to ensure the investors a **reasonable rate of return** to recover the investments.
- The success of the project depends heavily on the **real benefits** of smart gas meters for gas customers and their awareness and willingness to use them.
- For the **evaluation of benefits** difficult to translate in monetary terms arising from certain functionalities (such as energy savings, advance tariffing, etc) it should be considered how much would the beneficiary be willing to pay to obtain the benefit.
- The CBA must define a reference situation or **base case scenario** (without smart metering rollout) to calculate costs and benefits with respect to it. Future costs and benefits should be considered only when they are different from the base case. The sunk costs as such should not be taken into account.
- The CBA should measure in monetary terms different **scenarios** that include:
 - **Functionalities selected:** At this point it should be considered the lower benefit provided by some functionalities in the case of gas relative to electricity and the standardization needs associated with functionalities like remote supply shutoff.
 - **Technology selected** and the implementation procedure (retrofit of existing meters or new smart meter) providing the requested functionalities at the minimum cost...
 - **Customers selected.** Consumers should be segmented by level of consumption. It should also be considered segmentations by meter age, cost of meter reading and new cities with gas supply.
 - **Rollout scenario.**(combination with other utilities and mature technology available, etc)
 - **Data transmission system** selected to provide the minimum level of costs, supported by National and European consistent regulation and standardization.
- The **CBA should be carried out for each of the stakeholders** involved by calculating the NPV for each of them. The result will indicate feasibility for the rollout when the NPV is positive for each stakeholder involved.
- If the NPV for the investor is not positive, a **compensation scheme** shall be considered. This economic compensation can be done by any of the following ways or their combinations: through higher distribution tariffs; higher meter renting tariffs; one time customer surcharge; metering fees, subsidies. After applying the compensation, the NPV shall be recalculated for each stakeholder to verify the final positive result.
- According to the information shared among the different Eurogas DSOs, CBAs are more likely to be positive if:

- The scenario considers the roll-out of the smart meters only to the most profitable segment of consumers instead of a total roll-out.
 - A common telecommunication infrastructure for electricity, water and gas is promoted by the regulator.
 - The scenario considers only the functionalities available with a retrofit kit solution avoiding the costs of the replacement of actual meters
 - The scenario considers a long roll-out period of time allowing DSOs to replace the conventional meters with new meter at the end of their life.
 - The start of the roll-out is calculated when the technology is more mature and the standards are agreed at a European level.
 - Regulators remove limitations to physically connect gas to power supply in order to avoid solutions where replacement of batteries is needed
 - A correct compensation scheme is defined, recognizing a contribution from the agents that have benefits from the introduction of the smart meters without incurring in costs (suppliers and consumers).
- A positive CBA assessment is a necessary but not a sufficient criterion. CBAs work with assumptions and valuations that are subject to statistical variance and, to a certain extent, a range of valuations. The CBA has to be positive to an extent that makes up for the statistical uncertainties involved.