

An ERGEG Public Consultation Paper on Draft Guidelines of Good Practice on Regulatory Aspects of Smart Metering for Electricity and Gas

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Mandate 441

Mandate M/441 is an initiative of the European Commission's Directorate General (DG) Enterprise, based on an official Commission mandate of 12 March 2009 to CEN, CENELEC and ETSI for the development of an open architecture for utility meters involving communication protocols and functionalities enabling interoperability.



Six main additional functionalities have been identified so far in Mandate M/441's ongoing work. These functionalities aim to permit flexibility, innovation and competition:

- **F1. Remote reading of metrological register(s) and provision to designated market organisation(s);**
- **F2. Two-way communication between the metering system and designated market organisation(s);**
- **F3. To support advanced tariffing and payment systems;**
- **F4. To allow remote disablement and enablement of supply and flow/power limitation;**
- **F5. Communicating with (and where appropriate directly controlling) individual devices within the home/building;**
- **F6. To provide information via web portal/gateway to an in-home/building display or auxiliary equipment.**

It is worth noting that some countries have made decisions regarding functionalities even though no European harmonised standards are available as yet¹¹.

1. Questions for Public Consultation



The recommendations on services outlined in these draft GGP aim to be in line with the six additional functionalities outlined thus far by Mandate M/441.

The focus of this report is on the customer and the regulatory perspective. The following questions formed the basis for ERGEG's draft GGP:

- Which level of customer service is required so that smart metering will assist the active participation of retail customers in the electricity and gas markets in a safe and secure manner?; and
- What should be considered from a regulatory perspective before conducting a roll-out of smart meters?

Questions for Public Consultation

ERGEG invites stakeholders to provide comments to these draft GGP. In particular, ERGEG would welcome responses to the questions outlined below:

ERGEG seeks views regarding:

- A. whether any recommendations should be left out of our final GGP; and
- B. whether any insightful recommendations are not present; and
- C. whether any recommendations should be complemented or changed in any other way.

In addition to above, we would also welcome views concerning Recommendations 4 (chapter 2.1) and 20 (chapter 5.1) on interval metering time periods for electricity and gas respectively and Recommendation 13 on further services for customers.

2. Minimum Customer Services Recommendations - Electricity



1. **Information on actual consumption, on a monthly basis**
2. **Accurate metering data to relevant market actors when switching supplier or moving**
3. **Bills based on actual consumption**
4. **Offers reflecting actual consumption patterns**
5. **Power capacity reduction/increase**
6. **Activation and de-activation of supply**
7. **Only one meter for those that both generate and consume electricity**
8. **Access on customer demand to information on consumption data**

Additional functionalities according to Mandate 441	Minimum customer services - electricity							
	1. Information on actual consumption, on a monthly basis	2. Accurate metering data to relevant market actors when switching supplier or moving	3. Bills based on actual consumption	4. Offers reflecting actual consumption patterns	5. Power capacity reduction/increase	6. Activation and de-activation of supply	7. Only one meter for those that both generate and consume electricity	8. Access on customer demand to information on consumption data
Remote reading, meter reading of injected and consumed energy, F1								
Two-way communication, F2								
Interval metering/ registers, F3								
Remote management, F4								
Interface with the home, home automation, F5								
Information through webportal/ gateway, F6								

Table 2: Summary of recommendations on minimum customer services, electricity

4. a) 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 → 15min. Most effective usage for subsequent business processes (e.g. Billing, energy settlement)
2. Half an hour
3. One hour
4. More than one hour

4. b) 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) → this can vary from country to country and customer to customer, depending on the energy products that can be offered individual to each customer

2.Optional Customer Services Recommendations - Electricity



9. Alert in case of non-notified interruption

10. Alert in case of high energy consumption

11. Interface with the home

12. Information on voltage quality

13. Information on continuity of supply

*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? → demand response programs, active participation on energy market places, support of roaming contracts for eMobility, etc.*

Additional functionalities according to Mandate 441	Optional customer services - electricity				
	9. Alert in case of non-notified interruption	10. Alert in case of high energy consumption	11. Interface with the home	12. Information on voltage quality	13. Information on continuity of supply
Remote reading, meter reading of injected and consumed energy, F1					
Two-way communication, F2					
Interval metering/ registers, F3					
Remote management, F4					
Interface with the home, home automation, F5					
Information through webportal/gateway, F6					

Table 3: Summary of draft recommendations on optional customer services - electricity

3.Costs and Benefits - Electricity



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

benefits for customers

- A) Better customer information
- B) Load shedding scheme
- C) Reduction of peak load
- D) Reduction of cost and delay of interventions
- E) Accurate consumption payments
- F) Damage/loss reduction
- G) New services
- H) Easier switching

benefits for suppliers

- I) Better customer information
- J) Better frequency and quality of billing data

benefits for society as a whole

- W) Reduction of greenhouse gas emissions and increases in energy efficiency

benefits for network owners/controllers

- K) Better operability of network

benefits for network operators

- L) Reduction of peak load
- M) Profiling and data aggregations
- N) Balancing
- O) System security
- P) Continuity of supply
- Q) Faster fault location
- R) Voltage quality
- S) Network losses
- T) Reactive power
- U) Detection of fraud/theft
- V) Process optimisation/savings of operational costs

4. Roll-out Electricity



Recommendation 15. All customers should benefit from smart metering

If assessed positively and a roll-out is decided, all customers should be eligible to obtain a smart meter. It is important for all customers to be able to benefit from the services developed through smart metering in order to enable customers to become active on the energy market.

Recommendation 16. No discrimination when rolling out smart meters

Member States should avoid discriminatory behaviour by the party responsible for the roll-out.

For example: discrimination based on distinguishing between customers served by different suppliers than the vertically-integrated supplier or distinguishing between customers served under regulated prices in relation to customers served on the free market. To avoid unnecessary costs for the customers, the timing of the actual metering installation in different regions may have to be considered.

5. Minimum Customer Services Recommendations - Gas



- 17. Information on actual consumption, on a monthly basis
- 18. Accurate metering data to relevant market actors when switching supplier or moving
- 19. Bills based on actual consumption
- 20. Offers reflecting actual consumption patterns
- 21. Access on customer demand to information on consumption data

Additional functionalities according to Mandate 441	Minimum customer services - gas				
	17. Information on actual consumption on a monthly basis	18. Accurate metering data to relevant market actors when switching supplier or moving	19. Bills based on actual consumption	20. Offers reflecting actual consumption patterns	21. Access on customer demand to information on consumption data
Remote reading, meter reading of injected and consumed energy, F1					
Two-way communication, F2					
Interval metering/ registers, F3					
Remote management, F4					
Interface with the home, home automation, F5					
Information through webportal/gateway, F6					

Table 6: Summary of draft recommendations on minimum customer services - gas

Recommendation 20. a) Question to stakeholders:

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

- One hour → most appropriate for (active and automated) energy control
- One day
- One week
- Other

20. b) 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) → this can vary from country to country and customer to customer, depending on the energy products that can be offered individual to each customer

5. Optional Customer Services Recommendations - Gas



22. Hourly flow capacity reduction/increase

23. Activation and de-activation of supply

24. Alert in case of high energy consumption

25. Interface with the home

<i>Additional functionalities according to Mandate 441</i>	Optional customer services - gas			
	22. Hourly flow capacity reduction/increase	23. Activation and de-activation of supply	24. Alert in case of high energy consumption	25. Interface with the home/Home automation
<i>Remote reading, meter reading of injected and consumed energy, F1</i>				
<i>Two-way communication, F2</i>				
<i>Interval metering/registers, F3</i>				
<i>Remote management, F4</i>				
<i>Interface with the home, home automation, F5</i>				
<i>Information through webportal/gateway, F6</i>				

Table 7: Summary of draft recommendations on optional customer services - gas

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

benefits for customers

- A) Better customer information
- B) B) Load shedding scheme
- C) Reduction of peak load
- D) Reduction of cost and delay of interventions
- E) Accurate consumption payments
- F) New services
- G) Easier switching

benefits for suppliers

- H) Better customer information
- I) Better frequency and quality of billing data

benefits for network owners/controllers

- J) Better operability of network

benefits for network operators

- K) Reduction of peak load
- L) Profiling and data aggregations
- M) Balancing
- N) System security
- O) Network losses

benefits for society as a whole

- P) Reduction of greenhouse gas emissions and increases in energy efficiency

Recommendation 27. All customers should benefit from smart metering

If assessed positively and a roll-out is decided, all customers should be eligible to obtain a smart meter. It is important for all customers to be able to benefit from the services developed through smart metering in order to enable customers to become active on the energy market.

Recommendation 28. No discrimination when rolling out smart meters

Member States should avoid discriminatory behaviour by the party responsible for the roll-out.

For example: discrimination based on distinguishing between customers served by different suppliers than the vertically-integrated supplier or distinguishing between customers served under regulated prices in relation to customers served on the free market. To avoid unnecessary costs for the customers, the timing of the actual metering installation in different regions may have to be considered.

8. Data security and integrity - electricity and gas



In relation to the concept of smart metering, concerns might be raised on the security of the metering data and how this data is being used, including questions regarding privacy for the customer. Customers can allow any registered supply undertaking to have access to their consumption data.⁴² *When metering data is collected infrequently (sometimes from once every three years up to twelve times a year), the question of privacy might not be a very important. But when the metering data is being collected hourly or more even frequently, the data can describe the customer's life in quite some detail. This can be worrying for customers, especially when there are no clear rules on who has access to the data or how the data is retrieved. It is of the utmost importance that the customers' opinions of the smart metering system are positive, and not a source of anxiety.*

Member States should have due regard to the confidentiality of customer information as provided for in Article 16 of the Treaty on the Functioning of the European Union.⁴³

Furthermore, the data needs to be protected from fraud while in the meter itself and when transmitted between the meter and the customer, between the meter and the DSO/metering operator and between the meter/DSO/metering operator to the supplier. The key is that the customer must be the one who decides who should have access to what data and when. The DSO would obviously need to have access to some data to be able to safeguard the basic operations as the network operator.

Recommendation 29. Customer control of metering data

It is always the customer that chooses in which way metering data shall be used and by whom, with the exception of metering data required to fulfil regulated duties and within the national market model. The principle should be that the party requesting information shall state what information is needed, with what frequency and will then obtain customer's approval for this.

9. Conclusions



This document presents to all interested parties the draft Guidelines of Good Practice on smart metering systems for electricity and gas. With this consultation, ERGEG hopes to receive input from stakeholders in order to develop the final GGP. To this end, a list of questions is included in Chapter 1.6 (as well as for Recommendations 4, 13 and 20) to which we would particularly welcome responses.

ERGEG finds that the minimum services an electricity customer, those that both generate and consume electricity and a gas customer can expect from a smart meter are:

- Information on actual consumption, on a monthly basis;
- Accurate metering data to relevant market actors when switching supplier or moving;
- Bills based on actual consumption;
- Offers reflecting actual consumption patterns;
- Power capacity reduction/increase (for electricity);
- Activation and de-activation of supply (for electricity);
- Only one meter for those that both generate and consume electricity (for electricity only); and
- Access on customer demand to information on consumption data.

ERGEG finds that the following services should be optional for electricity customers:

- Alert in case of non-notified interruption;
- Alert in case of high energy consumption;
- Interface with the home;
- Information on voltage quality;
- Information on continuity of supply; and

ERGEG finds that the following services should be optional for gas customers:

- Hourly flow capacity reduction/increase;
- Enabling activation and de-activation of supply;
- Alert in case of high energy consumption;
- Interface with the home.

The Member States should take the following into account when deciding on a roll-out of smart meters for electricity and/or gas:

- All customers should benefit from smart metering; and
- No discrimination when rolling out smart meters.

The Member States should take the following into account when conducting a cost benefit analysis for electricity and/or gas smart meters:

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

Member States should consider the following concerning security and integrity:

- Customer control of metering data.

Grid





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