



Stadtwerke München GmbH
Büro München:
Emmy-Noether-Straße 2
80287 München

Kontaktbüro Brüssel:
Regus EU Parliament, Square de Meeûs 37,
1000 Brüssel

Contact:

Sonja Trausch

Telefon: D: +49 (0) 89/23 61-5018

B: +32 (0) 2 791 75 23

Telefax: D: +49 (0) 89/23 61-705-018

B: +32 (0) 2 791 7900

trausch.sonja@swm.de

www.swm.de

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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The Stadtwerke München GmbH (SWM) is a multi-utility company owned by Munich City Municipality in Germany and citizen value is a central theme for SWM. It employs more than 7 thousand employees and has a turnover of about €4.9 billion in 2009. It provides a range of utility services to approximately 1.1 million customers:

- Energy services: electricity, district heating and natural gas supplies;
- Water supply services and 18 municipal swimming pools; and
- Local transportation: subway, bus and tram services.

80% of SWM's power is produced by combined heat and power (CHP) plants. The company has an ambitious renewable energy target: by 2015 SWM is to generate an amount of green power equivalent to the demand of all private households in Munich. And by 2025, SWM wants to produce as much green power as to cover the total power requirement of Munich.

According to the national law the electricity and gas network is legally unbundled in the SWM Infrastruktur GmbH.

The Stadtwerke München GmbH appreciates the opportunity to comment on the Draft Guidelines of Good Practice on Regulatory Aspects of Smart Metering for Electricity and Gas

Our comments:

Recommendation 1 and 17: Information on actual consumption, on a monthly basis

To enable a comparison between real energy consumption in real using time, it is important to make the consumption data in fixed periods comparable. In this regard only consumption data of days, weeks, month and years are effective and sensible. Flowing displays and gliding periods (e.g. the last seven days) are compared to the foresaid less meaningful, because they can't consider live cycles or daily routines.

Recommendation 2 and 18: Accurate metering data to relevant market actors when switching supplier or moving

Like stated under the comment on recommendation 1 we are of the opinion, that only consumption data of days, weeks, month and years are effective and sensible. Further more it isn't necessary, that the meter can register the consumption data.

It is sufficient, if the meter transmits the data from the network operator or the supplier who can send the historical data in case of switching the supplier to the new one or to the consumer himself. In this regard it has to be considered that under aspects of data privacy in some countries like Germany contract data (like consumption data) have to be deleted six month after the end of the contract.

Recommendation 3 and 19: Bills based on actual consumption

Regarding the recommendation 3 and 19 (bills based on actual consumption) it has to be considered that at least in Germany bills on estimated data are only allowed when the real consumption data are not available (e.g. when the meter wasn't working correctly or if the consumer stole the energy under by-passing the meter). Actually the energy consumption is invoiced generally one time a year (only on special purpose the bill is realised on a quarterly or monthly basis). Only during this time the consumer pays monthly on a estimated basis. Especially for the gas supply the constantly equal payment during the year is more sensible, because in the summer time there is clearly less gas consumption that in winter times, when gas is needed for heating. If bills will be effected monthly consumers will have to pay high amounts of money in winter times and nearly nothing in summer times. Therefore we recommend that the data should be transmitted on a monthly basis but it should still be possible to base the bills on the yearly consumption. Monthly bills will generate additional costs which will finally lead to higher costumer prices.

A survey of the Association for Social Research and statistic Analysis (Forsa) on behalf of the German consumer protection Association shows that the consumers estimate the stability and calculability of monthly payments.¹

We recommend—like it is already implemented in Germany- to let the consumers decide, if they want an invoice based on a yearly, quarterly or monthly basis. We agree that this bill has to be based normally on actual consumption regarding some exemptions for cases where actual data are not available for whatever reason.

Recommendation 4: Offers reflecting actual consumption patterns

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**
- 2. Half an hour**
- 3. One hour**
- 4. More than one hour**

We are of the opinion that it is absolutely sufficient if the consumption is reflected on an hourly basis or more than an hour. Like stated under recommendation 1 it is important to make the consumption data in fixed periods comparable to enable a comparison between real energy consumption in real using time. According to the actual FNN² -paper data of 15 minutes for electricity and data of one hour for gas is specified. An other classification would lead to further uncertainty in the development of Smart Meter.

¹ http://www.vzbv.de/mediapics/smart_metering_studie_05_2010.pdf, S. 17

² Forum Netztechnik/ Netzbetrieb im VDE (FNN)

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)

We think that two registers are sufficient to represent the general daily routines of consumers with accordant tariffs.

Recommendation 5: Power capacity reduction/increase and 22: Hourly flow capacity reduction/increase

In our point of view the power capacity reduction/increase and the hourly flow capacity reduction/increase activation and de-activation is no function which should be combined with the standard Smart Metering System. Customer who want such a function can add this to their system, but regarding the costs involved the benefit is clearly lower.

If the aforesaid functions have to be implemented it has to be considered that energy undertakings can't be made responsible for consumers energy savings. If the energy undertakings shall implement energy management services or intelligent metering systems it has to be clear that this investments have to be considered in the full amount with an adequate rate of return in the grid tariffs.

In the current incentive regulation there is –at least in Germany- no possibility to consider the investments for the foresaid investments in the non-influenceable costs. A fundamental barrier to provide energy management services and intelligent metering systems is the return of the inserted capital which is too low. The currently available rate of return in Germany appears in the first view adequate. But it doesn't create a positive effect on investments: The nominal rate of return is consumed by the restrictive regulation framework. The current form of the incentive regulation is focussed on the cost efficiency of existing grids and doesn't consider the chanced requirements for the network operation and construction. Especially there are no incentives to develop energy management services and intelligent metering systems.

Regarding the “hourly flow capacity reduction/increase”: The only possibility (which is worth to realize) to pay back customer investments on intelligent metering systems is the price system (see recommendation 4) via different tariffs (registers) which are time-dependent. Also tariff systems with demand charge are a solution, which is already realized in Germany’s gas market for major customers / business clients. In our point of view benefits for private customers with small consumption will be difficult to achieve – due to the specific high investment.

Recommendation 6 und 23: Activation and de-activation of supply

In our point of view the activation and de-activation is no function which should be combined with the standard Smart Metering System. Customer who want such a function can add this to their system, but regarding the costs involved the benefit is clearly lower.

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

We think that it would be possible to have only one meter for those that both generate and consume electricity. But this implies that every consumer has its own meter which recognizes correctly the direction of electricity and each valid tariff. Furthermore the meter has to save the data correctly or transmit them safely to the central data storage body. This requires detailed requirements and adequate meters, ways of communication and safety measures for data security. At the moment such meters doesn’t exist. Additionally a reasonably priced cost-benefit-analysis should be considered. Last but not least a solution is needed how to deal with customers who doesn’t need such a meter for consumption and generation and who has to bear the how to deal the according costs.

Until there will be no reliable requirements (technically and regarding the costs) two meters will be needed.

Recommendation 8 and 21: Access on customer demand to information on consumption data

Regarding the information on actual consumption we are of the opinion that the customer should have unhindered access to the information at any time. This isn't possible, if the information is only shown on the meter itself, because the meter is in apartment buildings generally located in special rooms in the cellar, which is normally closed. Especially in large cities most of the people are living in such apartment buildings and will therefore have no access at any time to the meters. To fulfil the intention of the implementation of smart metering, namely the increase of awareness of energy consumption, energy efficiency and saving it is in our point of view important that a display or notice of the actual consumption is in the usual living zone of the consumers. An further information on actual consumption which is listed by the energy supplier is sufficient on a monthly basis. It has to be considered that it isn't necessary to combine a bill on a monthly basis with the information on actual consumption on a monthly basis.

Recommendation 9: Alert in case of non-notified interruption

In our point of view it isn't necessary to have an alert system in every household meter which informs the network operator that the single meter isn't working at the moment. It is sufficient if the network operators has the information about an interruption of the transformer. Alert mechanisms in every household meter would cause immense costs which are in no relation to the benefits.

If alert systems for the household meters have to be implemented it has to be clear that this investments have to be considered in the full amount with an adequate rate of return in the grid tariffs.

Recommendation 10 and 24: Alert in case of high energy consumption

This function should be optional if the customer wants such an alert. But the customer should pay for this extra function an additional price.

Regarding Gas: This corresponds to the existing two-tariff-system, which actually is not profitable for private customers with small consumption.

Recommendation 11 and 25: Interface with the home

For the awareness of consumers regarding their behaviour of consumption and the active control of consumption it is necessary to demonstrate the consumption behaviour to the customer. If this should be realized online via a "gateway", should be examined in a detailed consumer demand analysis. After that a tailor-made solution according to the desire and demand of the different consumers should be reached. This could be a monthly graph of the according load-curve as written customer info, as a separate display in the living area or as information at the website of the supplier.

Recommendation 12: Information on voltage quality

When realising the roll-out of Smart Metering the voltage quality should be determined according to the EN 50160 and transmitted to the entitled market partners in an applicable way.

Recommendation 13: Information on continuity of supply

See our comment on recommendation 12.

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?

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Recommendation 14 and 26: When making a cost benefit analysis, an extensive value chain should be used

We welcome that an extensive value chain should be used when making the cost benefit analysis (CBA).

In regard to the already mentioned Forsa-Survey³ we want to stress that the consumers see benefits of Smart Metering Systems especially in a better control and overview about their consumption; furthermore the possibility to find out high consumptive devices and behaviour to be able to realise energy savings. But the CBA should as well consider that the implementation of Smart Meter isn't only connected with benefits. Consumers also see disadvantages like non-sufficient data privacy and increasing costs. Therefore is important to implement Smart Metering Systems which allow the consumer to have sufficient information about the consumption without overenhancing the Smart Metering system with functions which are only interesting or relevant for a small group of customers. Only cost-efficient smart metering enables a consumer-friendly implementation of Smart Metering. As the consumer has in the end to bear the costs of the implementation of Smart Metering cost-efficiency is of essential interest. As the implementation of Smart Metering will cause high investment costs, it has to made sure that these investments are considered in the full amount with an adequate rate of return.

Recommendation 15 and 27: All customers should benefit from smart metering and Recommendation 16 and 28: No discrimination when rolling out smart meters

Our comment on Recommendation 15, 16, 27 and 28:

³ http://www.vzbv.de/mediapics/smart_metering_studie_05_2010.pdf, S. 23.

In our point of view only the area-wide implementation of Smart Meter via the network operator guarantees the best solution in the different specific regions. The implementation of Smart Metering via different market partners in one network area could lead to a broad variety of incompatible metering technologies which could cause problems during the switching process. Therefore the implementation of Smart Metering should be uniformly in the particular network areas.

Incentives for the network operators to realise the roll-out of Smart Meter should be implemented. As stated above, in the current incentive regulation there is –at least in Germany- no possibility to consider such a roll-out in the non-influenceable costs. It has to be secured that the investments for a roll-out of Smart Metering are refinanced via an adequate reimbursement and an adequate rate of return.

Furthermore technical requirements should be clear to avoid stranded investments and to support the technical development.

Recommendation 20: Offers reflecting actual consumption patterns

Regarding special offers reflecting the actual gas consumption patterns we think that this isn't very useful for the consumer. As the consumer needs gas for heating the house or flat, he will need the gas when its cold outside. The possibility of influence is very low; therefore pricing formulas are in our point of view not sensible.

**Recommendation 20: a) 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

As stated under the comment to recommendation 20 the possibility to control the use of gas is very low, because gas is needed when it is cold outside and not when the price is actually low.

Therefore the need for short metering intervals is likewise low. We think that a daily interval or more is sufficient.

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)

We think that two registers are sufficient to represent the general daily routines of consumers with accordant tariffs.

Recommendation 29: Customer control of metering data

Regarding the implementation of Smart Metering the question of the legally allowed data recording in the meter and the transmission of the metering data is still open and has to be cleared generally binding.

A. Whether any recommendations should be left out of our final GGP

See our detailed comments.

B. whether any insightful recommendations are not present;

The aim of the implementation of Smart Metering is the increase of energy efficiency and energy saving. The assessment and decision for the roll-out just on a cost benefit analysis is in our point of view not sufficient, additionally there should be drawn up a holistic and all-embracing (energy-)balance of Smart Metering: Are the energy savings or the savings of energy costs via

optimisation and higher transparency higher than the additionally energy consumption caused by the Smart Meter?

C. Whether any recommendations should be complemented or changed in any other way.

We appreciate the idea of developing Guidelines of Good Practice on Regulatory Aspects of Smart Metering for Electricity and Gas, because the implementation of Smart Metering will cause an high amount of costs and it has to be avoided that stranded investments are made.

We think that the following aspects should be considered when defining the recommendations:

- The test of different Smart Metering concepts showed that the different grid areas need specific Smart Metering concepts. In the same time (at least in Germany) a competition in the metering market added up, that support the potential of innovation. The maintenance of this technology open conditions for competition is the basic requirement for a maximum utilization of the innovation potential. Regarding a resource-efficient implementation of Smart Metering it would be helpful to define technological minimum standards independent from the condition of the used meter.
- Only cost-efficient Smart Metering enables a consumer-friendly implementation of Smart Metering. As the consumer have in the end to bear the costs of the implementation of Smart Metering cost-efficiency is of essential interest.
- The implementation of Smart Metering will cause high investment costs. It has to made sure that these investments are considered in the full amount with an adequate rate of return.
- The implementation of Smart Grids/Smart Metering require significant investments in communication technologies. These investments can be compensated at the best in parts through advantages in the grid control system and at the consumer level. But then still exists the problem, that the ones who have to invest in the grids are not the ones who can benefit from the investments. That shows that there is a lack of clear investment incentives for certain market partners. The development of fully interoperable smart grids should be promoted, inter alia to allow the decentralisation of energy production, integration of renewable energies and the completion of the internal energy market. This

includes the roll-out of Smart Meters whereby individual consumers can better monitor their demand to reduce peaks and transfer demand to cheap-rate periods, enter into demand-response agreements and improve energy efficiency within their homes.

- Incentives for the network operators to develop and enhance the grid via Smart Meters should be implemented. As stated above, in the current incentive regulation there is –at least in Germany- no possibility to consider the investments for research and development and the integration of renewable energies in the non-influenceable costs. Regulation should secure a balance of interests of all grid users, that the costs for the needed investments caused by the new requirements for the implementation of Smart Metering are refinanced via an adequate reimbursement and an adequate rate of return. The currently available rate of return in Germany appears in the first view adequate. But it doesn't create a positive effect on investments: The nominal rate of return is consumed by the restrictive regulation framework. Additionally to be named the increase of costs for emissions and lost energy, increase of costs for the renewable energy law Erneuerbare-Energien-Gesetzes (EEG), the time lag for the payback of costs and the reduction of the rate of return caused by the decoupling of revenue caps from the costs in the incentive regulation. The current form of the incentive regulation is focussed on the cost efficiency of existing grids and doesn't consider the changed requirements for the network operation and construction. Especially there are no incentives to implement Smart Meter.
- The technical requirements should be clear to avoid stranded investments and to support the technical development.