

ADOPTING A GENERAL REGULATORY APPROACH ON THE EUROPEAN ELECTRICITY MARKET

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ABSTRACT

In the developing European electricity market the traditional regulation mainly focusing on minimising tariff increases will not be sufficient to support the policy makers in their goal to integrate and increase the efficiency of the electricity infrastructure. Instead of short-sightedly narrowing down the regulatory focus mainly to the distribution price, the European regulators should strive for a more general regulatory approach to secure that the electricity market will function as effectively as possible to lead to lower total end-user prices instead. The DSOs will have to be the forerunners to prepare the infrastructure needed to fulfil the future functional and environmental targets and the regulation will have a key role in enabling and accelerating this change.

INTRODUCTION

Defining the concept of the DSO's services and their quality has traditionally been a difficult issue in the European regulatory models. Several studies have been troubled by transforming the subjective experience of quality into objectively measurable targets on a market where the customer has difficulties in understanding the contents of the service he/she is paying for. Therefore, in most of the European countries, the regulators have chosen to focus on more quantitatively measured attributes, such as prices, operational costs and quality of supply in form of interruptions. This approach has in fact lead to a stable tariff development and served its purpose on a still rather non-developed electricity market but has not given the DSOs incentives to improve their operations.

However, as the development on the European electricity market will continue, this traditional approach will not be enough to accomplish the wanted development within the European Union. To meet the challenging targets of the "20-20-20 decision", the European regulators need to shift focus from traditional price regulation into monitoring the DSOs' coming tasks in the electricity market value chain. These crucial tasks are, just to mention a few, supporting the connection process of renewable energy sources and small-scale generation, providing the means for demand response and energy efficiency and enabling increased competition on the markets.

The paper will address the different aspects of a more general regulatory approach through the following key

questions:

Defining the key services provided by the DSO

The role of the DSO will change towards to be an enabler of the whole electricity market value chain to function. Thus also the key services provided must be defined in a more comprehensive way to secure that the DSO will contribute in being a platform for the modern electricity market to function effectively.

Defining the customers of the DSOs

The focus should be shifted from the traditional idea of consumer-customers towards a more heterogeneous group of customers in the future. The concept of "commercial service quality" must therefore be expanded to include all types of customers instead of only end-customers.

Defining the quality of DSO service and how it can be measured

The paper will suggest examples for possible quantitative indicators for the DSOs quality of service so that the different dimensions of the services will be covered. As a conclusion this paper suggests how the quality of the DSOs services could be regulated in a more general way to better suit the changing needs of the electricity market development. The paper will give examples for objective, quantitative parameters such as lead-times and checklists.

DEFINING THE KEY SERVICES PROVIDED BY THE DSO

In most of the European countries it is an acknowledged fact that the DSO is no longer only an energy distribution system operator, it is more correctly an information distribution system operator. In order to gain the benefits from current and future Smart Investments, the DSOs will have to transform itself into IT- companies. The DSOs will have a key role in enabling the functioning of the electricity market in creating a platform for information exchange within the different market parties. A well-functioning communication in the market will among other things help the customers to control their own energy usage and empower him/her to participate on the market. This will most probably lead to a lower overall energy cost for the particular customer and will be efficient and environmentally friendly also for the whole society in e.g.

optimizing the production portfolio. The DSOs ‘central role in the communication between the different market parties is illustrated by the yellow squares in the figure 1. To gain the most synergies the DSOs should be given a clear mandate to be responsible for metering.



Figure 1. DSO as an enabler of the electricity market in a Smart Grids environment

To better describe the DSOs’ new role to enable the functioning of the electricity market have the DSOs’ key services to be defined in a more comprehensive way than before. Whether or not the market model will be mainly dual point or single point of contact in the future, the DSO will have an important role in supplying the infrastructure behind the end-customer contacts. Additionally the DSO will most probably itself always be responsible for providing some “traditional” customer services regarding DSO specific services, such as new connections and outage situations (table 1).

Table 1. DSOs’ key services summarized

DSOs’ key services summarized
Provide the customer the possibility to use electricity “24/7” (including connecting and continuity of supply)
Handling the customer contacts (responsibilities may vary based on the market model in use)
Additional services (detailed services may vary based on the market model in use)
Metering and providing the grounds for billing
Enabling supplier change

Focusing the regulation on the key services

As mentioned before, the traditional price regulation does not give the DSOs enough incentives to focus on improving these key services. The quality of supply is included in the most regulatory models but it rarely has a significant effect

on the allowed revenue frame. And even if it is included it only represents one aspect of the DSOs service disregarding the DSO’s modern role as an enabler for the electricity market. The national regulations, standards and legislations for the other services differ significantly and should in the long run be harmonized. A valid starting point will be obeying the national laws and standards but in addition to them should the regulators be able to set more demanding targets and also give the DSOs incentives to improve their operations.

DEFINING THE CUSTOMERS OF THE DSOS

Another important aspect is to define the customers of a modern DSO. Since the DSO is a vital enabler for the whole electricity market value chain it is not sufficient to only regulate the outputs at the consumer end-user interface. As mentioned before, the detailed services may vary depending on the national market model but certain key services will be most efficient to maintain within the DSO to get the best synergies for the DSO’s operations

Regardless of the market model in use, the customer focus should be shifted from the traditional idea of consumer-customers towards a more heterogeneous group of customers in the future which are dependent on the information services provided by the DSO. This dependency makes them critical interest groups also considering the functioning of the electricity market.

The concept of “commercial service quality” and respectively the previously defined key services must therefore be expanded to include all types of customers instead of only consumer customers. These significant future customers are for example prosumers (consumers with own production), producers, retailers, aggregators and other service providers functioning on the electricity market.

DEFINING THE QUALITY OF DSO SERVICE AND HOW IT CAN BE MEASURED

Especially in the heterogeneous Nordic market with several small DSOs, the regulation has a challenge to be effective in reaching all of the different companies. The majority of the Nordic DSOs is municipally owned and therefore often has a different business logic and profitability targets than the private owners have. These DSOs have traditionally relatively low price levels and thus can be seen to be well-regulated with regard to the traditional way of regulation. However, the low price level may in some cases also mean that the company is not collecting enough cash flow to invest in maintaining and developing its assets so that it would be most beneficial for the whole electricity market. Low consumer prices are not necessarily always best for the other previously identified customer groups and they do not

always guarantee that the total end-user price is the lowest. In some cases it would be more beneficial for the market and end-customer to invest in Smart Grid solutions, which may increase the costs for the DSO in the short run but most probably benefit the market in the long run. Therefore, the policy makers should pay more attention to the overall functioning of the electricity market and the total end-customer prices instead of solely looking at the DSO price levels. To do this it is important to understand what the DSO's role is for the functioning of the market and after that to define the quality targets for DSO service and steer the companies with the help of a more general regulation.

Setting a definition for quality

The quality of a DSO's service is often defined by either quality of supply and/ or by quality of customer service. The previous is a numerical target that can be objectively measured whereas the latter is often seen as a qualitative and a more subjective "opinion", which can be often distracted by the customers' confusion around the different players on the electricity market. More importantly, these two ways to measure quality are not sufficient to regulate the future DSOs in a holistic way. As an alternative solution, the quality of a modern DSO should be defined by the following three categories.

1. Quality of supply (already included in the regulation model in most countries)
2. Quality of customer service (already included in some countries but should be modified)
3. Quality in enabling the electricity market (a new aspect)

As the first mentioned is already quite well regulated, this article will focus on the two last ones and suggest some possible ways to measure and regulate them. However, even the regulation of the quality of supply should be developed in the future to for example improve the voltage quality in the network.

Quality of customer service

The quality of the DSO's customer service should be measured with help of commonly approved measurements, for example in context with the European Consumer Checklist (European Commission, 2009). Most importantly, it should not be measured based on a single category, such as telephone answering percentage but it should rather be a combination of several different categories. Recommended delivery times or lead-times should be emphasized. Setting the target levels and recommended lead-times should be done so that performance above the legal requirements is rewarded.

Possible measures included in the checklist:

1. % of correct on-time AMR-meter readings
2. Balance settlement based on actual hourly data
3. Answering to customer contacts in different channels (phone, mail, Webb portal)
4. Providing self-service channels for the customer
5. Providing services for the suppliers to enable demand response
6. Agreeing to certain "customer promises" (will be further explained)

Possible measures for lead-times:

1. Delivery of a new connection
2. Delivery of additional services
3. Handling of reclamations
4. Answering to customer contacts
5. Message exchange in supplier switching
6. Fault repair

Quality of enabling the electricity market

The way how the DSO functions as an enabler of the electricity market is not included in such in the European regulatory models, however the United Kingdom has started to include e.g. measurements for connecting renewable production in the regulation. The measures used should describe how well the company contributes to the efficient functioning of the electrify market and e.g. fulfilling the European environmental goals.

Possible measures are for example:

1. Functioning within the targets for message exchange (no delayed messages)
2. Quality of balance settlement
3. Connecting the renewable production
4. Enabling charging for EV
5. Unbundling compliance
6. Possible international target, e.g. within the Nordic countries

Customer promises as a measure for service quality

An example for "customer promises" is the initiative of Vattenfall Nordic Distribution where it has introduced customer promises for its customers in Sweden and in Finland. The company has defined its "key deliverables" from a broad perspective and set targets for them. In 2009, the promises were introduced in Finland and later in 2010 for private customers in Sweden. In the beginning of 2011 the customer promises were expanded to cover also corporate customers of the DSO (figure 2). In the future the promises will be further developed to even better meet the different types of key customers' needs.

1. **New Connection**
"You will always get your own handling officer for your new connection"
2. **Long Outages**
"You will be economically compensated if you have a long outage"
3. **Repeated Outages**
"You will be economically compensated if you have repeated outages"
4. **Voltage quality**
"If you experience a lack of voltage quality, we promise to investigate it in a dialogue with you"
5. **Outage information**
"You will quickly receive actual and updated information when an outage occurs"
6. **Invoicing**
"If you haven't received an invoice within 12 months, we delete all our claims older than this"
7. **Supplier switch**
"We have a fast handling when you want to switch supplier. We will compensate you if we are delayed"
8. **Service**
"It shall be easy to be our customer. You'll get a dedicated contact for your errands"
9. **My pages (e-service)**
"You can easily access information about your connections and agreements 24 hours a day – log on to 'My pages'"
10. **Environment**
"We promise to environmentally compensate all possible emissions of greenhouse gases from our network equipment"

Figure 2. Customer promises for corporate customers of Vattenfall Distribution Sweden.

Customers and their interest groups have very well welcomed the initiative because it helps the customer to more easily understand what he/she can expect from the DSO as a return for the distribution fee. Similar initiatives should be introduced as a voluntary action for the whole branch to agree upon common customer service principles for the all the companies. As a first step the initiative could be encouraged by the regulator to urge the branch to together help the customer to get a better grip of the electricity market and at the same time set a clear signal to the companies to develop their service from customers' and the whole electricity market's perspective. Later the above named checklists and lead-times should be expanded to be a separate part in a more general regulatory model in the future.

CONCLUSIONS

The traditional regulation mostly focusing on the tariff levels will not be sufficient to support the European policy makers in their future targets. DSO's role as the enabler of the electricity market must be acknowledged and the regulation should be developed towards a more comprehensive approach to better serve the changing needs of the market. The current quality regulation should be expanded to include customer service as well as the DSO's contribution to enable the functioning of the electricity market. Harmonization of the regulatory models itself can perhaps be a legitimate target in the long-term but harmonizing the goals of regulation can and should be done already now to support the struggle towards the functional

and environmental goals within the European Union.

REFERENCES

- [1] European Commission, 2009, *Consumer checklist*, can be found at:
<http://www.energycustomers.ie/electricity/euchecklist.aspx>.