

EURELECTRIC SMART GRID PROJECTS ACADEMY

AN EXCLUSIVE LOOK AT THE REALITY OF SMART GRIDS

4th Workshop: Smart Meter Data Management

Monday, 28 October 2013, 14h-18h

EURELECTRIC Meeting Centre, Boulevard de l'Impératrice 66, 1000 Brussels, Belgium

SUMMARY REPORT

INTRODUCTION

This summary report outlines the discussions and conclusions of the fourth workshop of the Smart Grid Projects Academy **on smart meter data management**.

The workshop brought together an exclusive set of 35 experts including **smart grid project promoters, researchers, DSO experts, manufacturers and European institution representatives**. It was chaired by Erik Landeck, Chairman of EURELECTRIC's WG DSO Project Deployment.

THE WORKSHOP HELPED DEFINE A NUMBER OF MESSAGES AND CONSIDERATIONS FOR POLICYMAKERS AND REGULATORS:

(please note that these conclusions do not represent an official EURELECTRIC position)

1. **Guaranteeing data privacy and protection is a pre-requisite for any smart meter roll-out**

Indeed, experience in the Netherlands and the UK shows that a privacy impact assessment and the right protection measures are vital for consumer involvement. For instance, providing the opt-out option to consumers is a measure that can foster consumer participation and support from consumers' organization. Statistics in the Netherlands show that when given the choice to opt out, only 3% of consumers make that decision. When reassured on data privacy, the main reason for consumers to opt out is the extra costs related to smart meter services .

Being regulated actors, DSOs can offer the proper data protection to consumers. Unlike other actors, they do not use data for commercial purposes. The "Neutral Market Facilitator Model" outlines clearly how DSOs are best placed to assume this responsibility, and Accenture analysis also goes in the same direction.

2. DSOs help customers to become smarter

Empowering consumers is crucial for the development of a smart energy system, smart metering being the first step, and smart grids the following one. This requires providing customers with both the right tools and the right information to ensure they understand the possibilities and benefits of smart meters, and that smart meter installation results in a positive experience. The visualization of consumption data for instance proved to be effective in mobilizing consumers, who do respond to the price signals and change their behaviour.

If smart meters are needed for enabling customers to be smart, regulation should also consider associated costs in order to reinforce smart metering roll-out business cases.

Furthermore, we believe that national roll-out strategies should include DSO-supported national and local communication campaigns to explain the usage and opportunities of smart meters. Customer information should be uniform, regardless of who provides it (DSOs, contractors, suppliers, media, regulators, etc.).

In this sense the UK initiative of a Data Guide and a Smart Metering Installation Code of Practice goes into the right direction.

3. Smart meter roll-outs open the door for new services and more market dynamism

With smart meters, new services will be offered to consumers and DSOs are the facilitators of these new competitive environment. For instance, in the Netherlands DSOs can choose their preferred smart meter manufacturer and technology, which allows for competition between smart meter providers and automatically lowers the prices. Among the services that shall also be facilitated by the DSO are providing meter values for settlement and extended services.

The most efficient smart customer services will evolve over time based on the customer values, it is therefore necessary to continuously invest in pilots to identify what is attractive for the customer and at the same time financially and technically feasible. Developing smart options for active customers requires efforts from several market players (retailer/aggregator, regulators and policy makers) including DSOs and thus also multi-dimensional incentive schemes.

Smart customer services will mainly be delivered by the retailer/aggregator based on the different markets; however the role of the DSO as an independent facilitator neutral from the retailer/aggregators is crucial.

SESSION I: SMART METERING DATA MANAGEMENT: BEST PRACTICES

This session provided an insight on the experience of two EU countries considered as “dynamic movers” on the roll-out of smart meters. It helped identified a number of do’s and don’t’s other countries can learn from when implementing their own smart meter roll-out plan.

1. THE DUTCH CASE STUDY

Paul de Wit explained that privacy concerns have significantly delayed the large-scale introduction of smart metering in the Netherlands. Indeed, in 2009, after an intense public debate, the Dutch Parliament rejected two Smart Metering Bills aimed at implementing the Energy End-use and Energy Services directive (2006/32/EC).

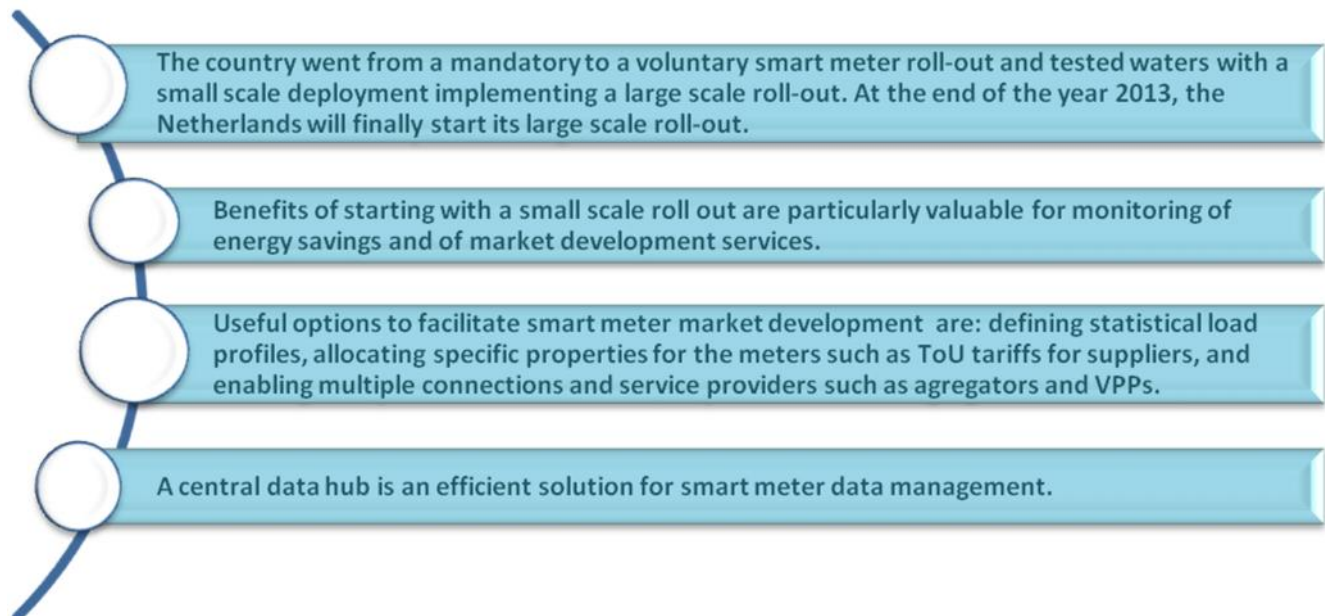
As a result, the following framework has been put in place:

- Customer to give its permission for 15 minute interval readings to the supplier (or ESCO)
- Customer opt out for home installation or remote reading
- DSO only allowed to read the interval data upon request of the supplier and has to delete the data after delivering it to the supplier
- DSO allowed to read the interval data only for technical reasons

Specificities of the Dutch market:

- Ownership unbundling for DSO’s by law
- Central data hub grouping DSOs namely for switching, moving, smart meter portal and meter reading data handling
- The supplier bills the customer including the network costs
- The supplier collects the meter readings
- The DSO collects the physical meter readings

LESSONS LEARNED FROM THE DUTCH MARKET:



2. THE UK CASE STUDY

Rosie McGlynn presented the UK smart meter roll out: 53 million gas and electricity meters to all homes and small businesses by end of 2020. To deliver this challenging objective, the government has established a “central change programme”. The Department for Energy and Climate Change (DECC) has been granted the responsibility of managing the implementation of the smart meter programme.

The UK government has decided that a Data and Communications Company (DCC) will be responsible for linking smart meters in homes and small businesses with the systems of energy suppliers, network operators and energy service companies. The DCC licence has been granted to DCC Ltd, a part of Capita PLC, in September 2013.

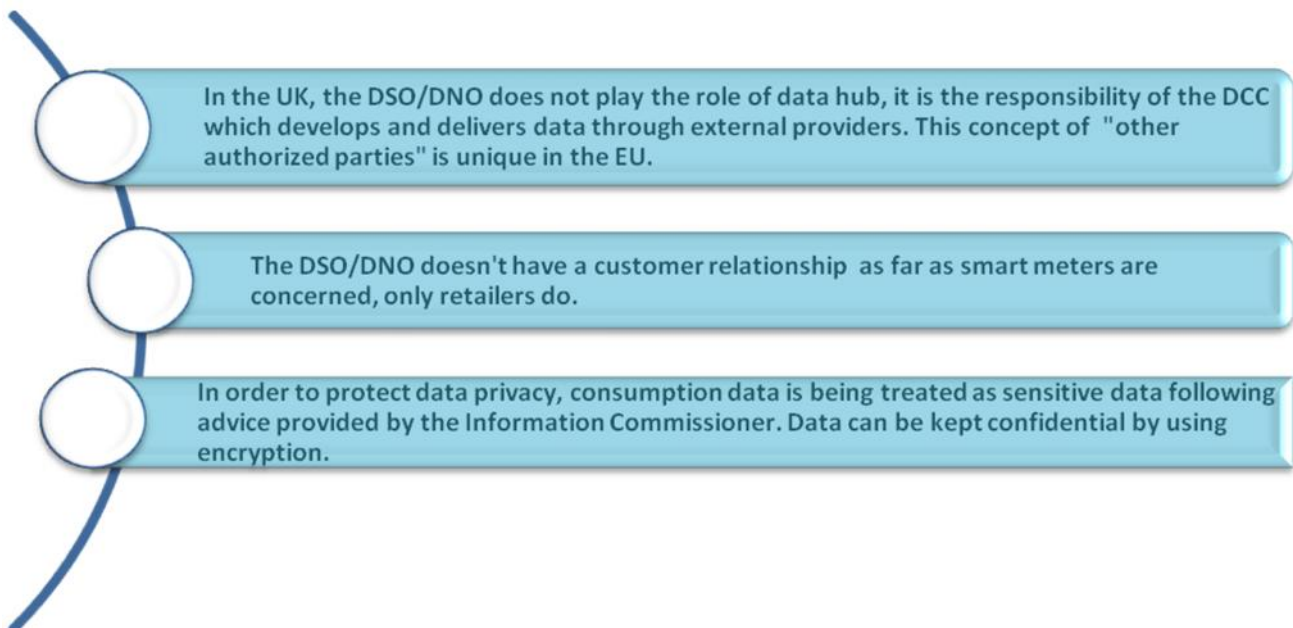
The DCC provides a secure routing service for messages sent by DCC Users to devices connected to the communications hub:

- It does not store meter reading data
- Suppliers will receive daily reads unless a customer opts out
- Customers will have to opt in to half hourly data collection
- Smart meter read data is classified as “sensitive” following advice provided by the Information Commissioner.

Energy UK has namely led the development and delivery of the following three initiatives

- The Data Guide
- Establishing the Central Delivery Body
- The Smart Metering Installation Code of Practice

LESSONS LEARNED FROM THE PROJECT:



SESSION II: STATUS ON THE ROLL-OUT AND FURTHER REGULATORY DEVELOPMENT

This session explored other dimensions, namely the necessary steps before any smart meter roll out such as the Cost-Benefit Analysis, but also the questions related to financing and regulatory aspects. The Commission concluded the session with a presentation on the annual smart meter benchmarking report to be published at year end.

3. THE GERMAN SMART METER ROLLOUT CBA

Helmut Edelmann made a presentation on the CBA study commissioned by the German Federal Ministry of Economics (BMWi) to Ernst & Young which was published in July 2013.

The study details the German market specificities:

- Highly fragmented structure with 900 DSOs, 4 TSOs
- Liberalized metering business, but still dominated by regulated DSOs
- High degree of energy efficiency compared to other markets
- Fast growing share of renewable energies and decentralized generation with integration issues
- Low proportion of electric heating systems
- Average electricity consumption 3.500 kWh/year per household
- Mandatory rollout of smart metering systems for specific customers is already in place

It also goes into the potential benefits of a smart meter roll out and identifies the main beneficiaries.

	Energy savings	Process improvements	Grid efficiency	Value added services
Exemplary benefits	<ul style="list-style-type: none"> ▶ Reducing energy costs by energy conservation, load shifting and new tariff models ▶ Avoided investments into generation and grids 	<ul style="list-style-type: none"> ▶ Meter reading ▶ Billing ▶ Call-Center/ customer care ▶ Balancing 	<ul style="list-style-type: none"> ▶ Avoided investment into grids by selective reducing feed-in of renewable energies ▶ Network management, planning and operation 	<ul style="list-style-type: none"> ▶ Smart Home ▶ Security and health care services ▶ Combined rollout of other utilities (Gas, heat, etc.) ▶ And many other applications
Beneficiary	End customer	Metering company, DSO, supplier	DSO, and very limited TSO	End customer, service companies

As a conclusion, the study puts forward 4 categories of consumers for whom smart meters installation would be cost-efficient because of their heavy weight on the energy system.

Consumer group	Description	% of total meter points	Recommendation
1	Consumers that use more than 6,000 kWh of energy per year	15*	Smart metering system - mandatory
2	Those consumers that produce combined heat and power (CHP), solar and wind renewable energy	5*	
3	Consumers in new and renovated buildings – about 500,000 customers each year	10*	
4	Consumers using heat pumps, storage heating systems, electric vehicles etc. according to § 14a EnWG	5*	
5	The majority of German consumers – including smaller businesses and households who are not part of 1 to 4	70*	Intelligent meter (upgradable to smart)

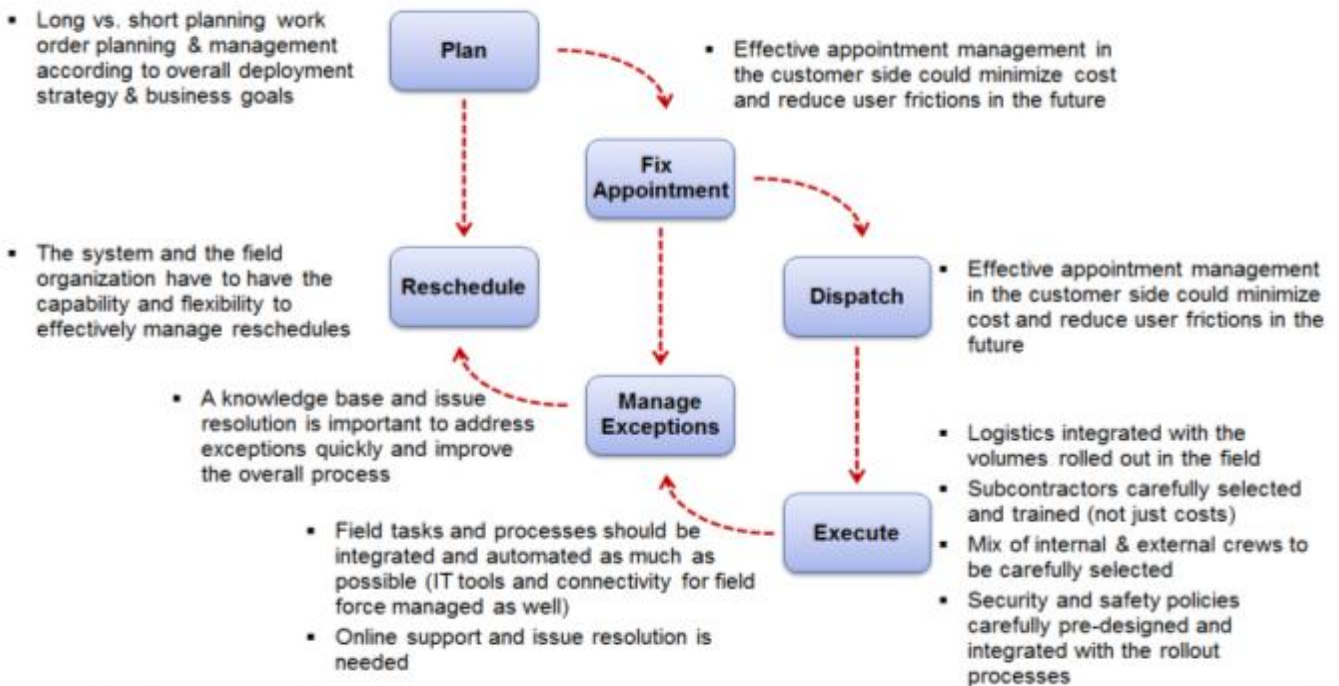
LESSONS LEARNED FROM THE PROJECT:

- 1. In Germany, an economically beneficial rollout would require both a mandatory and market driven approach and distinguish technologically between smart metering system and intelligent meter.
- 2. For the majority of German consumers, the deployment of intelligent meters is preferable to smart meters because potential money saving would not compensate the costs.
- 3. The standards developed by the Federal Agency of Safety in Information Technologies with the industry will provide the necessary data security and protection guarantees which are crucial for a broad public support. But no opt out option in Germany.
- 4. Germany has opted for a differentiated roll out in order to avoid stranded investments. The mass rollout will not start before 2015, most likely not before 2016.
- 5. The results of any CBA are influenced by the trust that you have in your data.
- 6. CBAs should take into account synergies between smart meter roll out and the logical next step which is smart grids: few Member State CBAs cover this point, the German one does.

4. THE FINANCING AND REGULATORY ASPECTS OF THE ROLLOUTS

Maikel van VERSEVELD underlined the dynamics of a rollout from a CBA, financing and data handling perspective. Meter & Installation costs as well as risk mitigation with many variables have a significant impact on the CBA final outcome.

When planning the roll-out, Accenture recommends that pilots are structured as part of the whole metering infrastructure design and deployment roadmap. Experience shows that a number of simple tasks heavily impact the overall performance of the project:

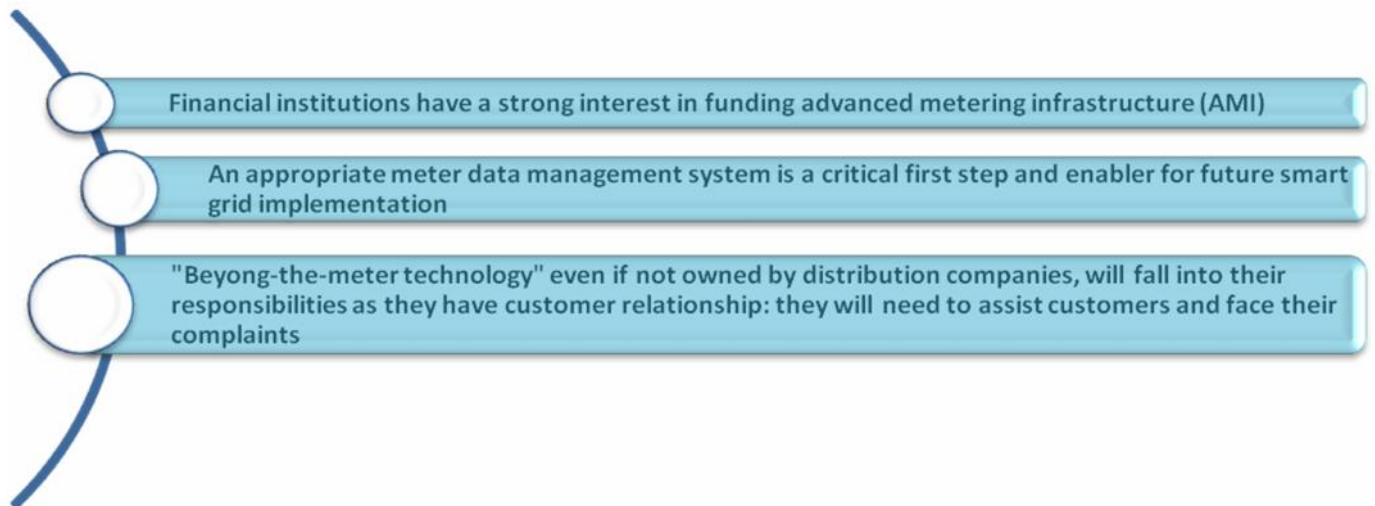


As far as financing options are concerned, Accenture identified the pros and cons of several funding sources and outlined the three generic funding structures that can be adopted.

On meter data management, Accenture underlined the following principles:

- Use your systems for what they are designed to do
- Understand the data classes involved in analytical systems to be able to match data to business needs
- Define data owners and the plan for exception processing
- Embrace common information models makes sense however, industry standards are not ready yet
- Security/privacy by design is key for overall AMI architecture
- Anticipate DR/DSM & VPP requirements in MDMS architecture
- Consider extending LV topology via MDMS into Grid Control/DMS

LESSONS LEARNED FROM THE PROJECT:



5. PRESENTATION OF THE SMART METERING BENCHMARKING REPORT

Manuel Sánchez Jiménez (Senior Officer Smart Grids, DG ENER B3 -Internal Market III: Retail markets; coal & oil) gave a flavour of the 2013 European Commission smart meter benchmarking report to be published in December. He recalled that there are 3 possible data processing models including the one elaborated by EURELECTRIC (“DSO as market facilitator”) and recommended 10 minimum functionalities for the meters.

Also they studied the impact on consumers, which is new compared to last year’s report:

6 Ways Smart Meters Benefit Consumers	
Energy Savings	more accurate and frequent consumption data demonstrably help consumers reduce their consumption and save money
Energy Efficiency	more detailed consumption measurements help consumers identify opportunities for energy efficiency improvements
Innovative Services	smart meters are indispensable for smart home solutions/home automation, reducing energy costs
Consumer Empowerment	switching suppliers, modifying contractual terms, etc. becomes easier, faster and cheaper
Sustainability	use of local renewable sources and storage potential (micro-grids), electromobility become easier
Distribution System Efficiency	management of the distribution systems becomes cheaper and more effective, leading to lower distribution costs

The Commission received 20 CBAs from Member States and 16 were positive which means that these countries are going ahead with the roll out together with Italy and Spain, rolling-out without CBA.

