

Feature Policy Overview – part Two

The issues, the snags, the solutions

As we have seen in Part One of this two-part Policy Overview, there is broad agreement in Brussels on many smart energy issues, such as targets and standardisation. But there are also important topics that still need to be worked out. Two stand out: the roles and responsibilities of different stakeholders in the value chain, i.e. the business model, and data protection and privacy. Both have a direct impact on the customer and therefore on the public acceptance of new smart technologies.

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The business model debate is a direct result of the EU's third energy market liberalisation package. Adopted in 2009, this was intended to open up the European market, bringing an end to the old energy monopolies that ran everything from energy generation to delivery. It has at least partially succeeded and the European Commission is clear: there will be no fourth package.

By facilitating the move towards a more decentralised system, the Third Package helps lay the foundations for a smarter system. As Gérard Magnin, Executive Director of Energy Cities, which represents local energy agencies, puts it: a more decentralised market is a “prerequisite for the relevance of smart grids”. The Third Package also offers explicit support for smart meters: it decrees that 80% of European consumers should have one by 2020.

But the Third Package has a downside as well, when it comes to implementing a smart energy system. “One of the problems [with rolling out smart meters in Europe] is that this is much more

complicated in a liberalised, unbundled market,” says John Harris, Vice President and Head of Governmental Affairs for Europe at smart meter maker Landis+Gyr. If you have an integrated utility from power plant to electricity delivery, that company can shoulder all the investment costs of a smart meter roll-out because it will reap all the benefits, right across the value chain.

“In Europe however”, says Harris, “the entity that’s going to make the investment is the regulated network operator but other market actors are going to benefit as well.” Market fragmentation complicates matters. “The third energy package hasn’t made it any easier”, says Jessica Stromback, Executive Director of the Smart Energy Demand Coalition (SEDC), a lobby group that promotes demand side programmes in Brussels. “But we’re stuck with it,” she adds. “It means it’s all the more important to create real competition in the market so you at least get the benefits that real competition can bring.”

Creating competition |

Ray Pinto, Senior Government Affairs Manager at Microsoft Europe, says: “It’s the opening up at the retail level that’s going to create an explosion of innovation opportunities and economic growth.” This is exactly what is occupying the European Commission today: how to ignite the retail market, and, more specifically, define where it starts and ends, to pull smart meters and grids off the shelf.

In the European Smart Grids Task Force, the main forum for policy debate on smart meters and grids in Brussels, there are several market models under discussion for a new, smart energy system. At the core of these discussions is the role of the Distribution System Operator (DSO), the company that today manages the low-voltage cable network that delivers energy to end-users. It is a regulated business: national regulators set tariffs that let DSOs recuperate their costs through grid use fees from consumers. DSOs want to be at the heart of the smart energy system, and they have been assigned a central role in most countries. But are they the ones who are best suited to drive the system forward?

“They should be responsible for reading the meters,” says Gunnar Lorenz, Head of Networks at European electricity trade association Eurelectric. “The meter is not an energy service. It’s part of the network. The services are what can be done by the market.” Eurelectric puts forward several arguments for why the DSO should retain the meter as a regulated asset. One is that it needs access to energy consumption data to optimise the delivery network. Another is that as a regulated entity it is best placed to collect this data and make it available to potential service providers in a non-discriminatory manner. “I see DSOs as a market facilitator,” says Lorenz.

Others are coming to the table with different ideas. In the UK and Germany, the meter is no longer a regulated asset and data is collected and managed by a third party. Lorenz doesn’t believe this is the way forward: “We’re talking about unbundling that is going beyond what is in the third package. Of course you can segment the market into many pieces, but can you still make a margin?” He believes excessive fragmentation could slow things down. “The German experience proves that the liberalisation of metering has, so far, not delivered the expected benefits to both customers and the system,” a Eurelectric position paper says.

EU sources however, suggest the Commission may tire of waiting for DSOs and national regulators to agree on cost recuperation for smart meters/grids and invite other players to step into the space. These could be telecoms companies and they could even be supermarkets. In addition to the DSO-centric model, the Smart Grids Task Force is discussing two other business models: a third party collects and distributes the data, or a third party collects and distributes the data and also provides new services. The main difference with the DSO-centric model is that here the DSO would do the minimum: maintain the wires but not get involved in the data flow.

“All these models are theoretical. The chosen one may be a combination of those,” says Mercè Griera-i-Fisa, from the European Commission’s Smart Cities and Sustainability Unit, DG Connect.

Big data = big money |

The fight at the heart of the smart meters/grids debate is not over energy but over data. A smart grid is a series of cables with a communication network associated with it and it is the data collected by this network that will enable the explosion of services people like Pinto get so excited about.

Who collects and manages this data is the big question. Just consider what’s possible: software leader SAP has launched a new technology that lets it read ten million meters in less than half a second. No wonder it advocates a so-called “shared services” model that brings third parties into the heart of the energy distribution or retail system like in the UK and soon the Nordic market. “We get a lot of data thanks to our 65% market share,” says Maher Chebbo, Vice President of Utilities and Communication Industries for Europe, Middle East and Africa at SAP. “If tomorrow we want to act Google-like for European energy data management, we definitely can.”

“Managing data is not the main business of DSOs,” says Griera-i-Fisa. “DSOs take care of electricity.”

But stakeholders such as Magnin from Energy Cities say that today’s big technology companies could end up replacing the old energy monopolies in terms of the power they wield. This is especially true in relation to the emerging concept of “Smart Cities”, where transport and resource use are all optimally managed through ICT and interconnected with other city data. “It would be dangerous if cities were controlled by large private companies,” says Magnin. Companies not cities are requested to lead the applications for EU financial support for smart cities under the EU’s Strategic Technology Plan’s Smart Cities Initiative.

But Microsoft’s Pinto says: “I really struggle to see one company take over everything and become a complete monopoly. There are rules and regulations to control that. It’ll be really competitive.”

Data protection |

The big danger is misuse of data and invasion of privacy. “When you look at big data, the EU clearly has a role, an incredibly important role and that is talking about data protection, privacy, security, and so on,” says Pinto. “If the data doesn’t flow across borders or data protection is not figured out quickly enough it will slow down the market from having these services.”

Luckily, stakeholders agree the EU is on the right path with its current revision of the 1995 data protection regulation. And there seems to be support among many too for the German data protection template for smart meters that would set security standards akin to those for Internet banking – i.e. very strict. The idea is to make consumers feel comfortable. “The issue of data protection and privacy is too sensitive and the benefits to European households from smart metering are too great, not to give this subject the attention it deserves,” says Harris from Landis+Gyr.

The referee here is the European Data Protection Supervisor (EDPS), an independent supervisory authority at European level devoted to protecting personal data and privacy. Its opinion in March on the Commission’s proposals to revise the 1995 data protection regulation called them “a huge step forward” but “far from comprehensive” and “disappointing in the law enforcement area”. The so-called Article 29 Working Party, which is composed of representatives of national data protection authorities, the EDPS and the European Commission, also advises on data protection issues.

The European-wide roll-out of smart metering systems will enable the massive collection of personal information from European households, unprecedented in the energy sector. The potential intrusiveness of this is heightened by the fact that the data may reveal intimate information about what members of a household do within the privacy of their own homes. By analysing detailed electricity usage it may be possible to infer or predict when members of a household

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are away on holiday or at work, when they sleep and awaken, whether they watch television, use certain devices, or entertain guests in their free time, etcetera. Such information can be used for nefarious purposes, including marketing and advertisement. “Considering the risks to data protection, one of the key pre-conditions for the roll-out of smart metering systems is to ensure a high level of protection of personal data,” says the EDPS.

In a recommendation issued on March 12, 2012, the European Commission says data should be rendered anonymous so that individuals are not identifiable. It plans to develop a data protection impact assessment template and discuss it with consumers at the next meeting of the London Citizen Energy Forum on 13-14 November. This is a regulatory platform established in 2007 to help arrive at competitive, energy-efficient and fair retail markets for consumers.

“Public acceptance is indispensable to a successful roll-out of smart metering,” concludes Harris. He supports the German Federal Office for Information Security’s (BSI) proposed ‘Protection Profile’: “This is the most concrete thing we have on the table and it’s based on international standards.” But “data protection and security measures have a price”, Harris concedes and such security measures should be included in any economic assessment of the costs and benefits of smart metering.

Who will pay? |

The bottom line is always cost. And that brings us back to the business model: who will pay? In theory, smart meters can pay for themselves through savings. This is certainly true for commercial and industrial demand response programmes. “They are a business,” says Stromback of the SEDC. Companies “have the communications and the technology, and the programmes are valuable enough to pay for the metering: if you can earn €100,000, the €2000 industrial meter is no longer a problem”.

For residential consumers, it’s different. “We are sceptical about demand response and time-of-use tariffs... at residential level, even with electro-mobility at a large scale,” says European consumer federation BEUC in a 2010 position paper on smart metering. “Regarding the financial costs incurred by consumers in relation to the development of the technology, we believe that national regulators and Member States should ensure that they are justified, transparent and fair.” Regulators must ensure that benefits to the network are passed on to customers through lower tariffs.

Upfront investments have to be made and “a large part of the upfront capital expenditures will be borne by DSOs”, says Eurelectric. DSOs have paid for about 70% of the cost of some 300 smart meter/grid pilot projects conducted in Europe to date, worth about €5.5bn. For Harris, the biggest obstacle to the deployment of smart meters in Europe today is at the national level: “The bottom line is who pays for what? How much and over what time period can DSOs recuperate the costs of investment in smart metering through grid use fees? How much will they gain through operation optimisation?” There are 27 of these debates in 27 member states. “I’m not sure how you can solve that at the European level”, Harris says.

Patricia de Suzzoni, Advisor to the Chair at French regulator CRE and Chairperson of CEER’s Customer and Retail Markets Working Group, plays down the importance of these debates, saying they are part of the traditional negotiations between DSOs and their regulators: network operators have to invest and the regulator has to keep tariffs as low as possible.

Keeping down costs |

Member states wishing to do so had until 3 September 2012 to carry out a cost-benefit analysis of the roll-out of smart meters in their country within the context of the third energy market

liberalisation package. More than half have chosen to do so and sent their conclusions to the European Commission. EU sources say at least one, Belgium, has come up negative.

What type of meter consumers should be getting has a direct bearing on cost. Service and meter providers want these devices to be the best of the best – two-way communication is the bare minimum. Yet EU policymakers – and DSOs, which in their preferred scenario would recoup meter costs from customers through grid use fees – argue that meters should be kept as basic as

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possible, albeit meeting certain minimum standards such as two-way communication, to keep costs down. “If the customer wants a full home automation system, let him buy it on the market,” says Grieri-i-Fisa.

After the meter, the way to keep down costs is for DSOs to partner up with telecoms companies to develop smart grids, i.e. overlay the electricity infrastructure with a communications infrastructure, she suggests. “It’s logical to use what already exists. We cannot afford to build parallel networks. And it will go faster,” says Grieri-i-Fisa. Existing infrastructure offers plenty of options in urban areas: cable TV companies, virtual telecom operators, etc. In poor suburbs and rural areas, in contrast, the roll-out of the smart grid could go hand-in-hand with broadband deployment. The Commission calculates that 80% of the cost of broadband deployment is engineering works. By working together on physical construction, utilities and telecoms companies could save on money and permits.

Closer cooperation between the two requires changes to the regulatory framework of both, however. DSOs would need to be allowed to make money – from working with a partner – and telecoms networks would probably face new technical requirements. But the prospects are good. In Germany, the same regulator looks after energy and telecoms, and it has issued guidelines for joint investments. Other countries are considering merging their regulators. “People start to understand it’s the way forward,” says Grieri-i-Fisa.

Doubts, where they exist, relate to the technical capacity of existing telecoms networks to handle the data smart grids would generate. And both parties, naturally, envisage themselves as the dominant partner in charge of managing that all-important data flow.

The consumer has the last word |

If both the business model and data protection rules are critical to the roll-out of smart meters and smart grids because they ultimately determine public acceptance of these new technologies, it is worrying to read in a recent report for the European consumers federation BEUC by the Free University of Brussels, that “consumers are not adequately safeguarded in the current discussions”. This message was echoed by several other stakeholders in the smart debate in Brussels. The report moreover, provides food for thought for any cost-benefit analysis: for example, the 15% potential energy saving from smart meters actually assumes an in-house energy consumption display, not just a smart meter in the basement (that delivers just 2-4% savings when used properly, the authors say).

Finally, the study warns that “smart meters will only become so when consumers use them smartly”. This implies that they should “actively participate in the creation and definition of functionalities, usages and meanings before techno-economical drivers decide and standardise the new objects”. An interesting message from the end of the value chain that industry and regulators would do well to listen to. ■