Developing smart metering technologies: the perspective of a norwegian network owner

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Background

2007: Ministry of Petroleum and Energy appointed Water Resources and Energy Directorate (regulator) to investigate feasability of full scale roll out of AMI

2008: Initial deadline set for 2013

2008-2011: Interpretation work of regulation 301

2011: Final regulation draft sets deadline to 1.1.17

«Finally! Let’s get to work!»

Or…?

Towards a regime shift with AMI?

- New possibilities
- Complex networks of actors
- Drivers and Barriers

- Who does what in relation to AMI in Norway?
- How does regulation act as a policy instrument to shape technology development?

The study

- Participatory observation
- Local network owner, 80 000 connections
- Resident AMI-project
- Expert interviews
- Policy documents
- Industry documents
- Media coverage

Introducing AMI:

Drivers for development and implementation

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1) It is the law from 2017

"The entire AMI project is a politically motivated project. It is not a profitable project from the view of the customers, […] and it is definitely not an industry driven project. It is a political resolution, made from some overarching social economic priorities."

2) It will make network owners more efficient

"[Network benefits] are not covered by the regulation. There are no requirements for network benefits in the regulation. It yields possibilities for it, but it will be up to the individual company to increase efficiency and raise the quality of their services […]. And there must be a will to invest in it. And that it is to a very small extent."

3) It will make the markets more efficient (1 in 2 ways)

The datahub and the customer-centric model:

"…a common ICT solution for the power market, which can facilitate the efficient exchange of information and establish support systems for business processes within measurement, calculation, billing and coordinated behavior in the power market."

3) It will make the markets more efficient (2nd of 2 ways)

Neutral solutions and non-favorism

"no single actor shall receive any special benefits in the future power market [and solutions] must not compromise customer possibilities or security, and shall not facilitate lock-in or in any way hinder the customer's access to an open power market".

Introducing AMI:

Barriers for development and impementation

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1) Missing incentives

"The overall plan is construed roughly with a three-year horizon. […] And relatively little R&D is rewarding after three years. That is, it takes at least five, ten, maybe twenty years to actualize rewards from R&D […]. And some spend more on R&D than others. Those who spend less in fact are rewarded by other companies' R&D spending. […] So being a first mover is very risky."

2) Resistance to change

"There is a very fragmented view in the network company about what AMI should be. AMI is largely challenging the network company now, because of its level of innovativeness, more IT, faster technological change, and the size of the project, which is very demanding. And we get the impression when talking to different parts of the network division that they are more or less enthusiastic about the project. Some are not enthusiastic at all, and would like the money to go towards something, call it more traditional stuff"

3) We don't have the technology

"After looking at the regulatory demands and gauging what this would mean technically, it became clear to our suppliers that this was more extensive than predicted. Thus there are no technological solutions [on the market] today that meet the goals"

(stated in spring of 2012)

Uncertainties add up…

1) *Side effect* efficiency benefits not likely
2) Structural change reduced to top-down technological implementation
3) Risks of sub-optimization
4) Incentive problems, esp smaller companies
5) Lack of co-evolution

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