

What is transforming the energy sector?

TBD: given the rise of RE, EE and other technologies - what is the impact they are having on traditional utility companies and the implications for the sector globally

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New Thinking For Energy



Overview

- Energy sector economics is changing (because of energy technologies and ICT abilities, and therefore turning energy system upside down
 - Thomas is talking about the specifics of this
- Conventional energy system wisdoms (eg the importance of baseload) are being overturned
- This implies a completely different system.

Energy sector economics changing

- The system is being turned upside down
 - Not just fuels / technologies (incl ICT and storage) which change but also customer roles change; but
 - Flexibility becomes very important in system operation
 - This is the demand side etc
 - Business to customer relations change
 - Businesses need to understand and link to their customers
 - If this is a distribution company then this is understanding their area
 - If it's a supplier, then its understanding their customer needs
 - Businesses need to use data – for their businesses and in a way customers appreciate
- This implies a completely different system which needs
 - new institutions,
 - new values within markets,
 - new incentives for new practices,
 - new roles, and
 - new forms of co-ordination and integration

Conventional wisdoms are being overturned – from evidence

- It is not about baseload
- It is not about economics of scale of energy provision
- Not all customers are happy to be passive
- Marginal cost pricing in energy markets does not work for capital heavy assets

What is needed / how is this going to happen?



New Thinking For Energy



This is a completely different system and needs new institutions, new values (ie payments), new forms of co-ordination and new roles

- This will not happen unless
 - Value / payments within system are altered to value flexibility etc; to be able to access domestic DSR etc
 - There is a strategic vision and co-ordination
 - This will not happen through the ‘market’
- This implies new institutions and roles
 - Changing balance between markets and direction
 - The Regulator has to be part of this
 - New type of regulation (performance based), flexible
 - SO’s are important as coordinators
 - Distribution becomes the heart of system (new values for DSR / heat / integration etc
 - Transmission becomes more of a balancer
 - Granularity of data allows new energy companies

Have to get incentives and platforms going

- It goes without saying that the right incentives have to be available to reveal value; processes have to be in place to keep up with change etc but HOW to do this?
- Platforms are the way to enable new services
 - Need to think about platforms in new ways
- In NY, distribution system providers (DSP) is the market facilitator via a platform
 - Their role is to bring down transaction costs so that DER can get into the market
 - DSPs make sure that costs are assigned to the right party
 - Ie not just customers paying(think Expedia)

Issues

- Technologies changing all the time so its really about getting a process (regulatory, direction and legitimacy) which is flexible to knew possibilities – not shutting it down
- Have to deal with stranded assets
- Data is central
- Have to get risks down to get weighted cost of capital down
 - Then RE competitive
- Judgement is out on whether utilities can survive, and in what form
 - If can change, then potential to make more money (NY REV example)
 - BUT if all about data management and relationships with customers, then can see problems
 - Issue is default service – will they become the default providers? Good or bad

Lots is uncertain but we need to understand what we should do about these:

- We don't really understand platform economics
- We don't really understand if we need a 'smart grid' and what that is
 - Physical smart meters
 - Or apps?
 - Or one provider who bundles lots of apps (ie expedia equivalent)
- Locational / nodal pricing versus granularity of areas which change all the time