

The Role of Regulation in Supporting Innovation and Transformative Change in the Energy Market

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“The ... power system will keep changing and evolving throughout the coming decade. Nothing that we know from the past might be taken as granted. Technologies, system and market parties’ behaviours and strategies, hence business models, will come to change and surprise us”

Florence School of Regulation, Policy Brief 2015/04

Technology and the regulated energy sector

- In energy, change is fundamental and accelerating, driven by:
 - Technology
 - Behaviour
 - Decarbonisation agenda
 - Policy and incentives
 - New business models
- Blurring boundaries within the electricity and gas systems
 - Demand and supply (“prosumers”, storage, responsive demand)
 - Transmission and distribution and off-grid
 - Controls, aggregation, disaggregation, internet of thingsInteraction with heat, transport, financial services – whole system issue

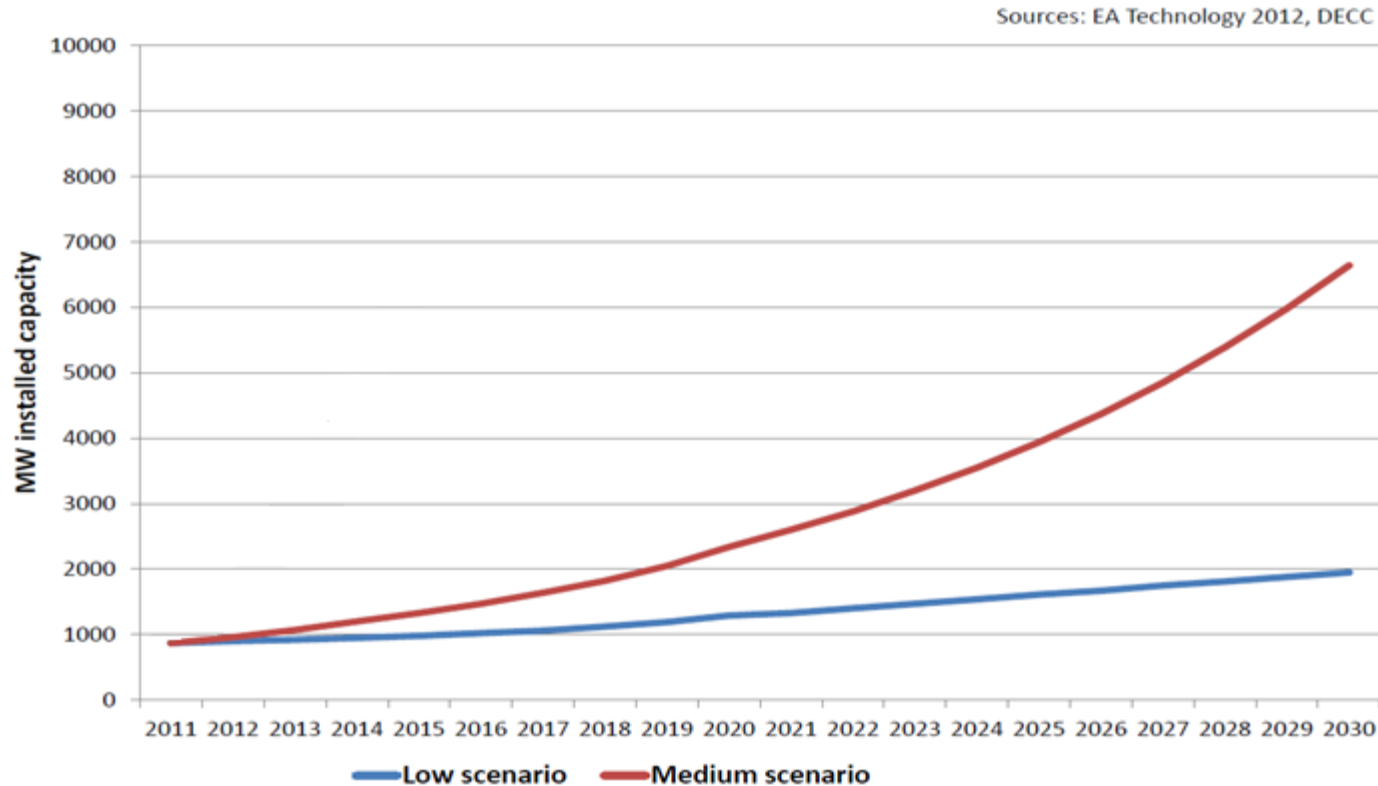
What is innovation

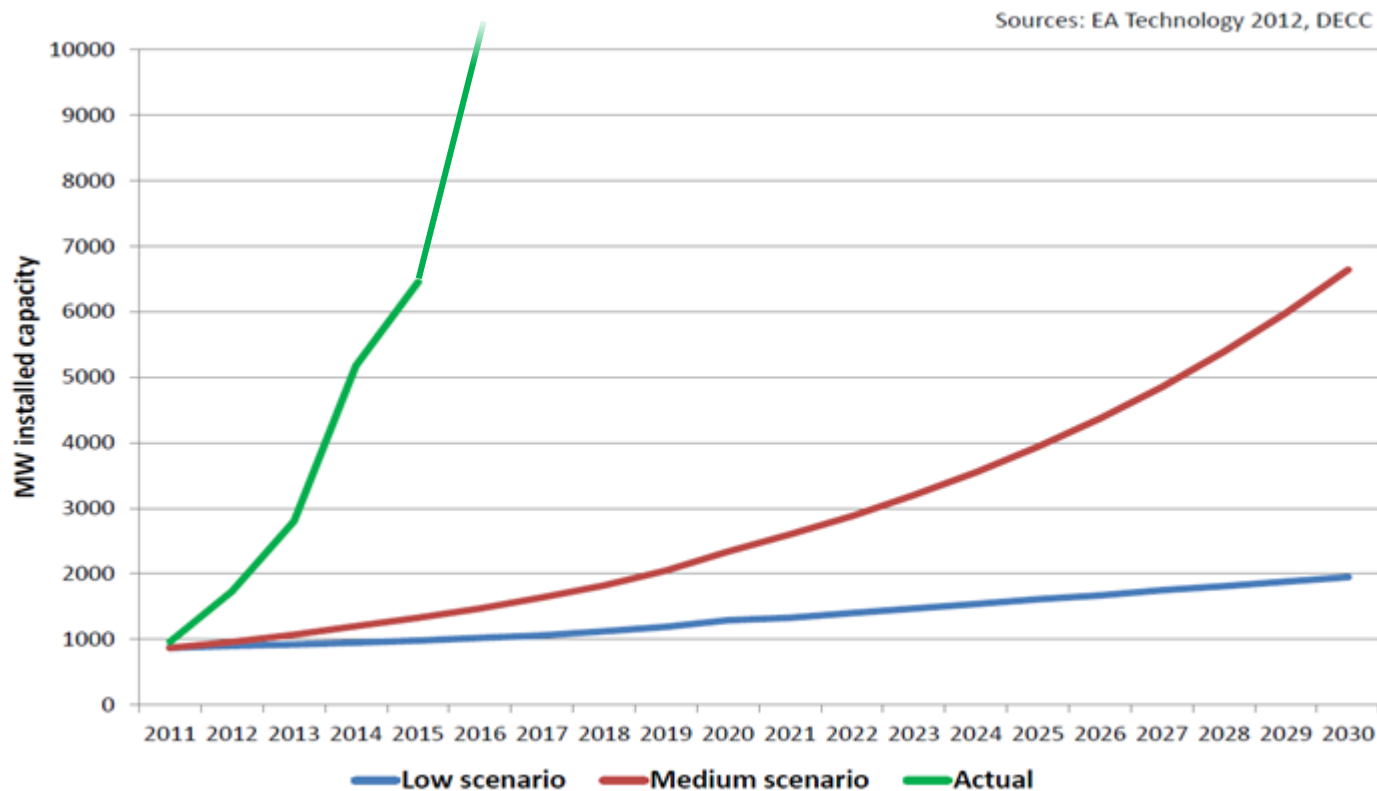
BIS definition of innovation:

“the application of knowledge to the production of goods and services. It means improved product and service quality and enhanced process effectiveness.”

How energy consumers can benefit from innovation:

Lower bills	New cost effective products / services eg smart meters
Better quality of service	Innovative and bespoke approaches to interacting with consumers eg mobile apps / services targeting vulnerable
Environmental outcomes	Innovate ways to generate low-carbon electricity and consume our energy more efficiently
Reliability and safety	Consumers benefit from innovations which maintain secure flows of energy eg active network management, storage
Benefits for wider society	Innovations in the energy sector and likewise those in other sectors, have crossover and wider potential eg electric vehicles

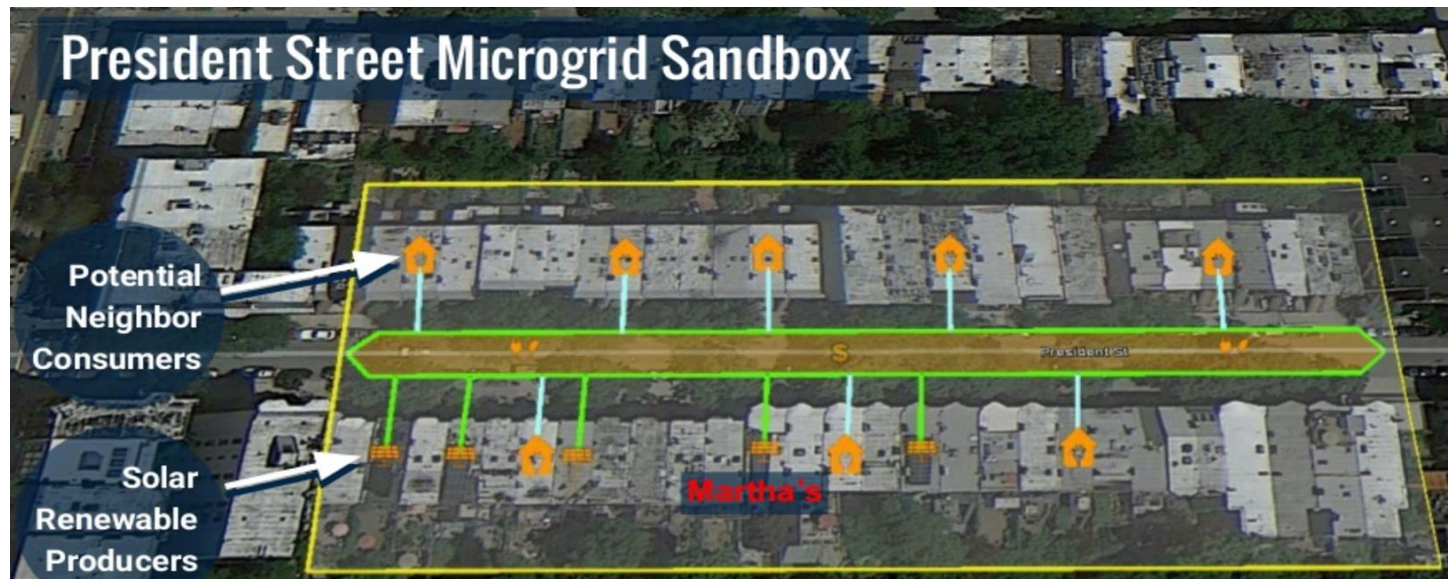




Outturn vs expectations. Cumulative capacity now stands at 10.8GW (at Jul 16)

Role of 'Big data'

- A Blockchain is a de-centralised platform that tracks transactions automatically across a network.
- Provides secure platform which allows consumers to engage on a peer-to-peer basis without involving third parties.



E.g. Brooklyn Transactive micro-grid platform trialling Peer-to-Peer Blockchain technology with innovative hardware and software

- Regulation hasn't stood still – changes big and small
- Ofgem's overall stance – we want to:
 - Rely on competition to drive innovation on a level playing field
 - Encourage the industry to experiment and innovate if it offers benefits to consumers, recognising that innovation has risks
 - For monopolies, use incentives and funding mechanisms
 - Remove undue regulatory barriers – recognise prescription may be a barrier
 - Engage with those developing innovative approaches to understand their ideas and concerns and work in partnership with government and others.
 - Be an innovative regulator, seeking better ways to improve outcomes for consumers while being mindful of the benefits of predictability

Our regulation and innovation

Ensuring regulation supports innovation in competitive markets...

Examples of work in this area:
Future Retail Regulation
Flexibility
Half Hourly Settlement
Non-traditional business models and local energy

And providing incentives for innovation in electricity and gas networks...

Examples of work in this area:
RIIO framework
Network Innovation Competitions
Competition in networks

Launching **‘Innovation Hub’** later this year to support innovator businesses by providing fast, frank and informal feedback.

Aim of Hub to:

- Help innovators through the regulatory jungle
- Help innovators understand regulatory implications of their activities
- Provide an efficient and consistent service to parties
- Enhance our awareness of new developments

Ofgem is the Office of Gas and Electricity Markets.

Our priority is to protect and to make a positive difference for all energy consumers. We work to promote value for money, security of supply and sustainability for present and future generations. We do this through the supervision and development of markets, regulation and the delivery of government schemes.

We work effectively with, but independently of, government, the energy industry and other stakeholders. We do so within a legal framework determined by the UK government and the European Union.