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GB regulatory approach

RIIO price controls and distributed generation

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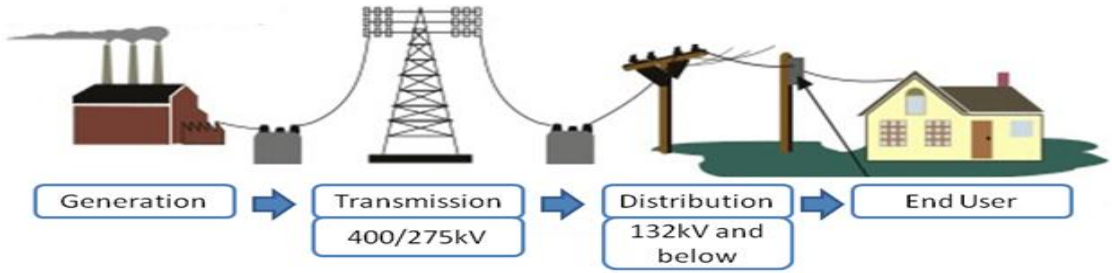
Background

- Much of network installed in 1950s and 60s with some assets over 80 years old
- 14 licenses owned by six companies

- 16% of the average domestic electricity bill
- £4bn paid annually by GB customers
- Combined asset value of £18bn



*In Scotland, 132kV is part of the transmission system

Price Controls

Network Companies are natural monopolies

- In line with our principle statutory duty to protect energy customers we regulate energy network companies.
- We have several regulatory mechanisms and tools at our disposal. Price controls are a very important part of our regulatory arrangements.
- In a price control review we set a limit on the amount of revenue that companies can collect during the price control period.
  - If companies costs are lower than the allowed revenue, then the company gets to keep a share of the profits and vice versa.
  - Companies can also earn rewards or penalties through their delivery of set outputs (versus set targets).

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RIIO | ED1

RIIO: A new approach to price controls

RPI-X used as basis for regulating energy networks for since early 1990s

delivered significant benefits for consumers:

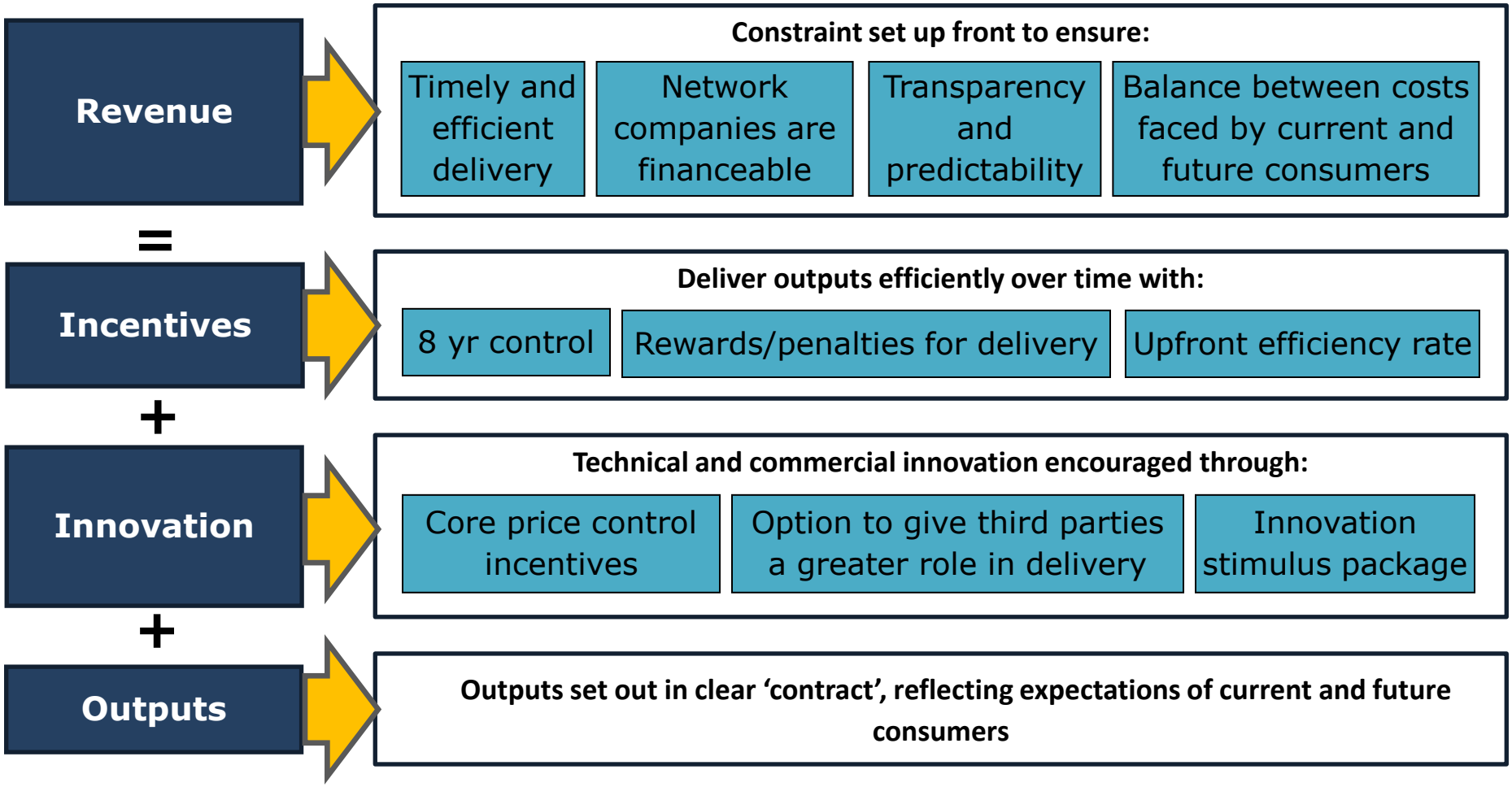
- 20% reduction in network charges
- 30% reduction in power cuts
- £60bn Investment
- More efficient financing
- Improved quality of service

BUT stakeholders suggested framework led to:

- Networks focused on short term
- Networks focused on Ofgem not customers
- Limited innovation
- Limited appetite for risk
- Bias for 'capex' solutions
- Limited focus on 'cross-sectoral' interactions

RPI-X was not broken, but RIIO introduced as new "fit for purpose" framework

RIIO: A new approach to price controls



Stakeholder engagement

DNOs must demonstrate engagement in developing their business plans

Ofgem-led elements:

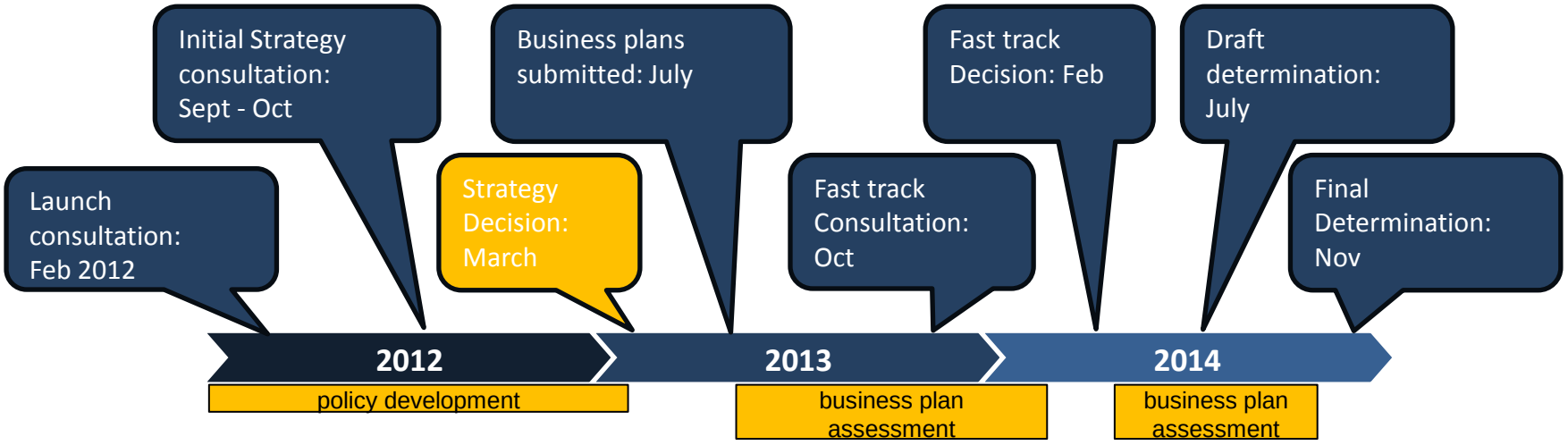
- **Price Control Review Forum (PCRF):** high level stakeholder group which will provide input to Ofgem and the DNOs about a range of aspects of the price control

- **Consumer Challenge Group (CCG):** This is a small group of consumer experts which act as a "critical friend" to Ofgem in ensuring that the views of consumers are considered fully in the review

- **Working groups:** A range of groups where Ofgem, DNOs and other stakeholders discussed specific issues in depth. Detailed design of outputs and incentives.
  - Flexibility and capacity; Environment; Innovation; Reliability and safety; Connections; Customer and social issues; Finance; Cost assessment

- **And of course, consultation throughout the process**

RIIO-ED1 Process



Throughout: Effective stakeholder engagement by us and network companies

•8 year price control: 1 April 2015 – 31 March 2023
•Process built on learning from transmission and gas distribution price controls (RIIO-T1 and RIIO-GD1)
•Policies built on previous electricity distribution price control (DPCR5)

RIIO-ED1 Key Challenges

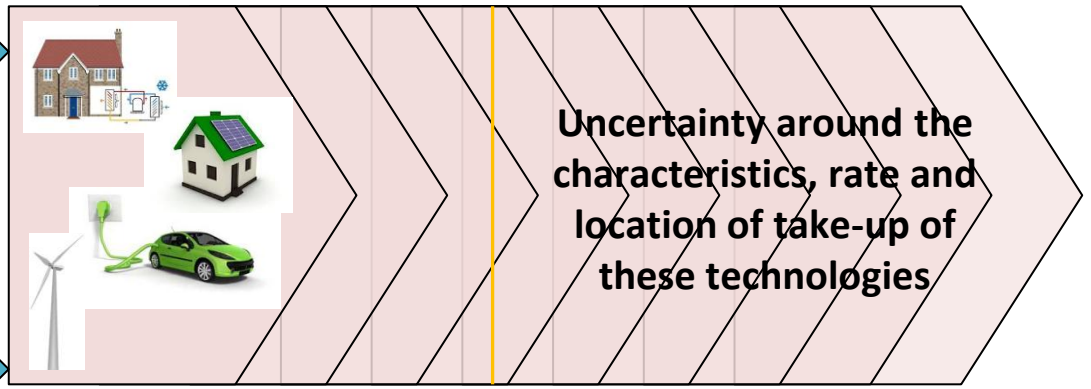
Driving factors

- Government policy and subsidy regime
- Other incentive mechanisms
- Local planning rules
- Technological developments & reductions in cost

Facilitating factors

- Investment to expand and reinforce the distribution network
- Greater use of smart grid technology & DSR to maximise network flexibility at minimum cost

2020 targets



Ensure low carbon technologies can connect in appropriate time at appropriate cost

RIIO Outputs – strong focus on what network companies will deliver

Six Output Categories
Environmental impact
Customer satisfaction
Connections
Safety
Reliability and availability
Social obligations

Developed through extensive stakeholder engagement

- The delivery of these outputs linked to DNOs' allowed revenue amount.
- The DNOs incur rewards and penalties for out/under performance of these outputs

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RIIO | ED1

Innovation Stimulus Package

RIIO has a number of elements that drive innovation:

- *Longer price control periods,*
- *Equalised opex and capex*
- *No 'with hindsight' adjustments*
- *Focus on delivery of outputs.*

Network Innovation Competition	•Replace Innovation Funding Incentive and Low Carbon Network Fund. •Single annual competition covering elec transmission & distribution. •The amount available for 2015-16 and 2016-17 is £90m per year. It will be reviewed going forwards.
Network Innovation Allowance	•Fund innovation within DNOs' allowed revenue (use it or lose it). •Fund small projects that meet published criteria. •Size of funding is based on the quality of the Innovation Strategy in the DNO business plans (0.5 to 1% of base revenue).
Innovation Roll-out Mechanism	DNOs can apply for additional funding to roll-out a proven innovation. Where the innovation meets pre-defined environmental criteria but there are not sufficient benefits for DNO to fund roll-out.

Uncertainty Mechanisms

- Some factors are outside of the DNO's control. The risk should be shared equitably between DNO and customers
    - Protects customers
    - Allows DNOs to provide outputs
    - Reduced cost of capital and therefore cost to customers

- Different types of uncertainty mechanism, depending on the type of uncertainty, eg:
    - Load related reopener
    - Smart meter volume driver
    - Indexation of allowed revenues

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RIIO | ED1

Business plans

Companies required to develop well-justified business plans setting out

How they will deliver in the interests of current and future consumers	How they will meet the challenge of moving to a low carbon economy	A strategy for dealing with risks and uncertainties

Companies will need to:

- justify their strategy for output delivery against an understanding of the long-term trends they face
- show they have considered a range of stakeholder views and opportunities for innovative approaches
- include a holistic view of the price control package including financeability metrics

A high quality business plan can be **fast-tracked** and have the price control concluded early. In RIIO-ED1 one company was fast-tracked, the others had £2bn of cuts made to their plans

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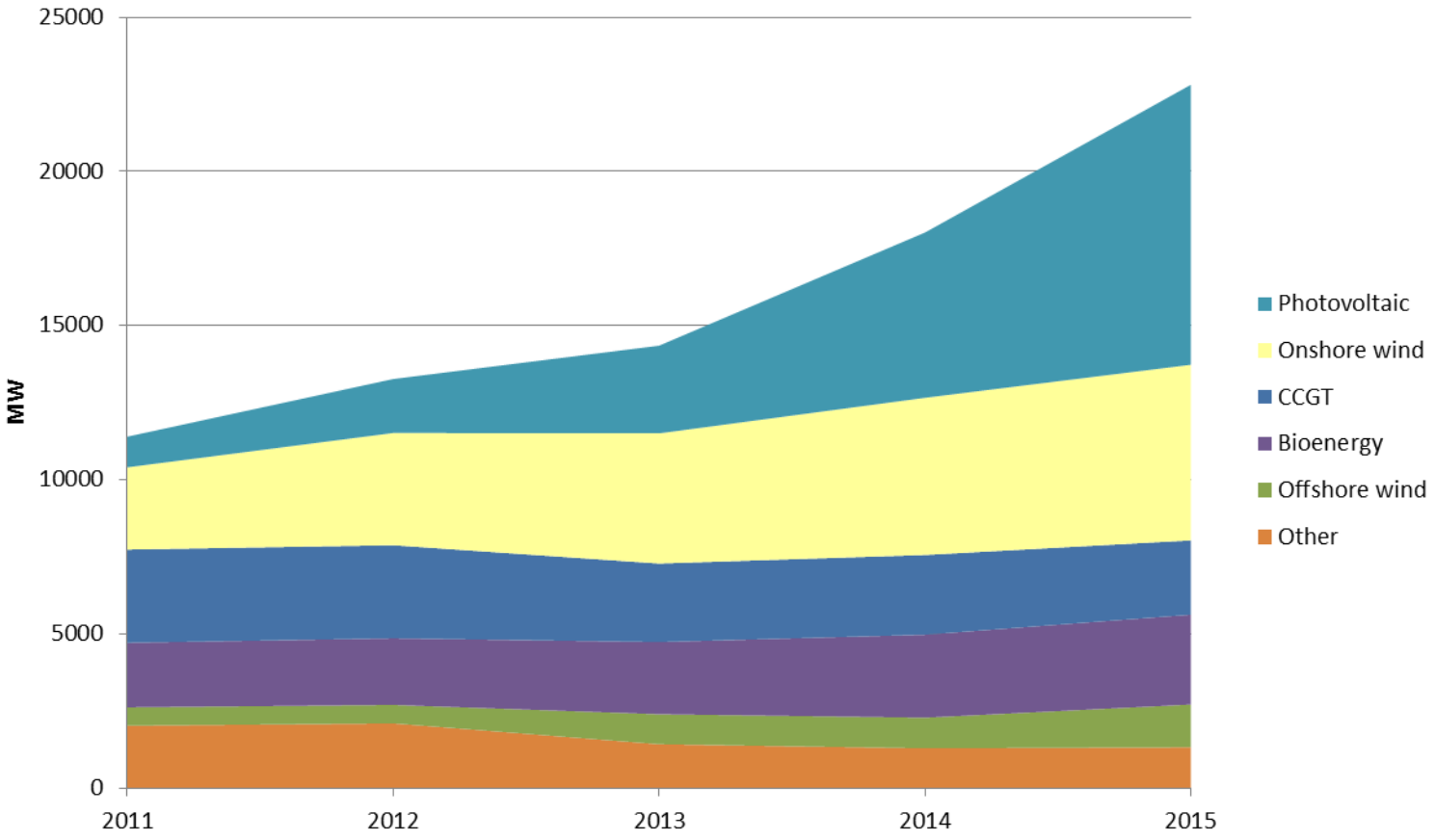
The growth of DG



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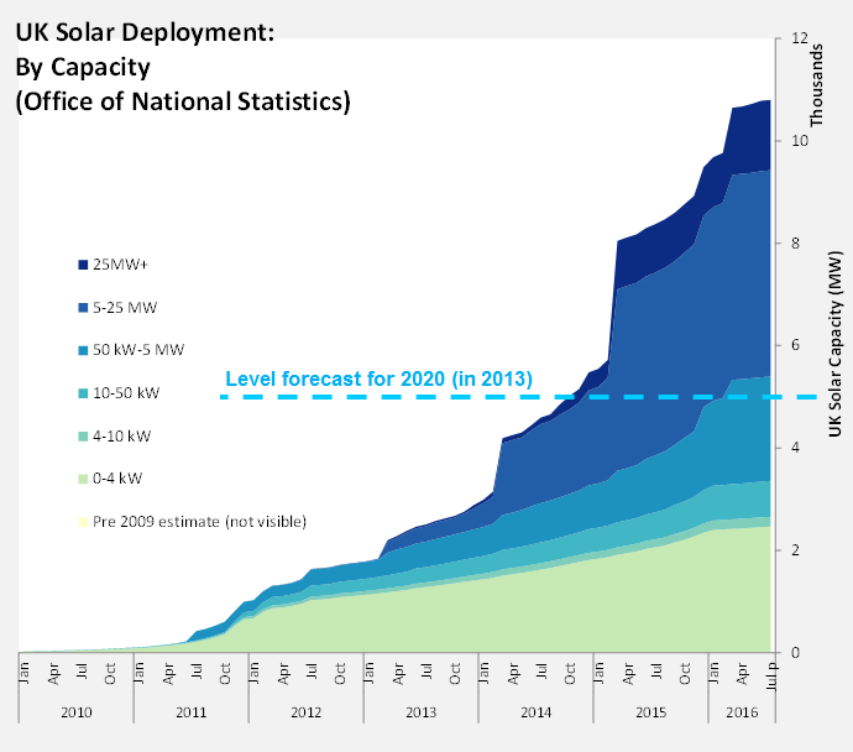
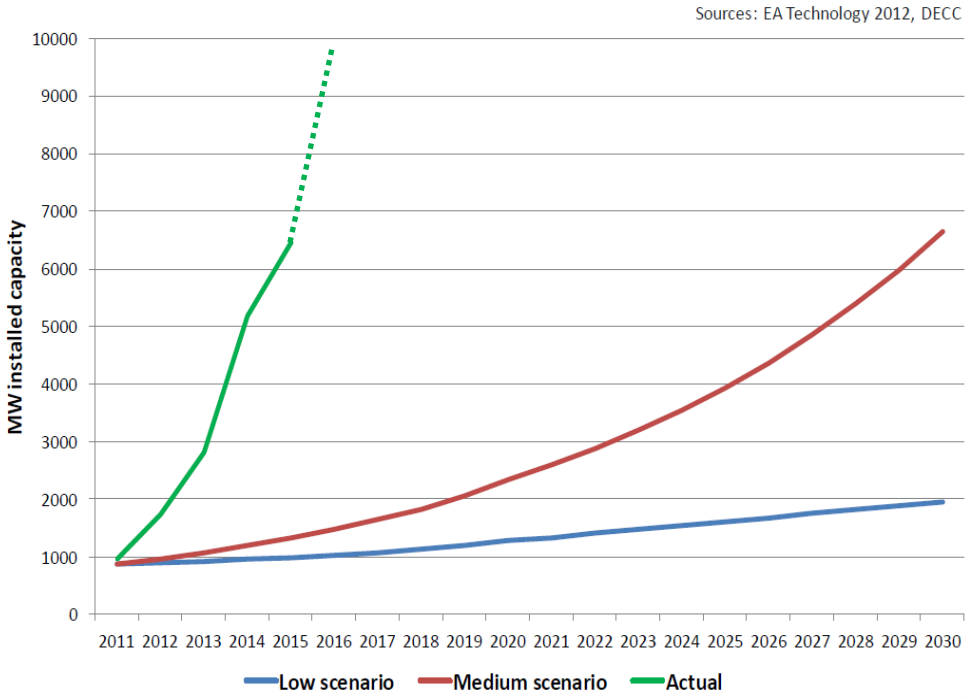
Forecasting is challenging





- 10GW of PV now connected – over 6GW in last 2 years

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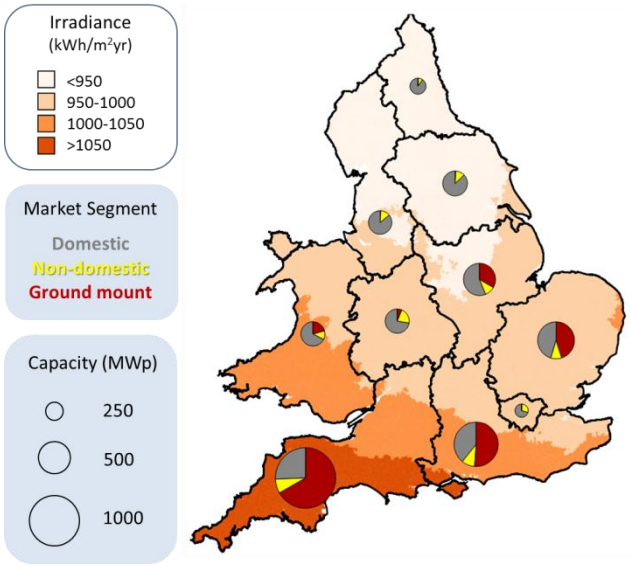
With growth comes system issues



Connections to Distribution network in South West

	Total MW - connected, accepted and offered
Biomass and energy crops (not CHP)	111,050
CHP	68,648
Offshore wind	181,351
Onshore wind	202,433
Photovoltaic	2,593,920
Waste incineration	115,765
Other generation	649,522
Total	3,922,689
Winter Maximum Demand	2,530,000
Summer Minimum Demand	980,000

- Fundamental changes to flows of energy– regions built to handle demand now net export
- Network capacity exhausted - Grid constraints are becoming more severe
- DG can reduce demand on the network (ie.excess generation at times of low demand). Challenge to keep system voltages within limits - resulting in restrictions on transmission-connected generation and what the DNO can connect

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…. and customer service challenges

- 5 years ago, generators had a lengthy list of complaints
  - Application process was long winded
  - Little information available up front to inform connection choice
  - Customer service was patchy
  - Hard to know what you were paying for
  - Different arrangements in different DNO regions
  - No innovation or desire to find ways around a problem
  - At times, far too expensive
  - At times, far too long to connect
- Ofgem-led DG Forum events and RIIO-ED1 **Incentive on Connections Engagement (ICE)** introduced to focus DNOs on customer needs – or face financial penalties
- Progress has been made

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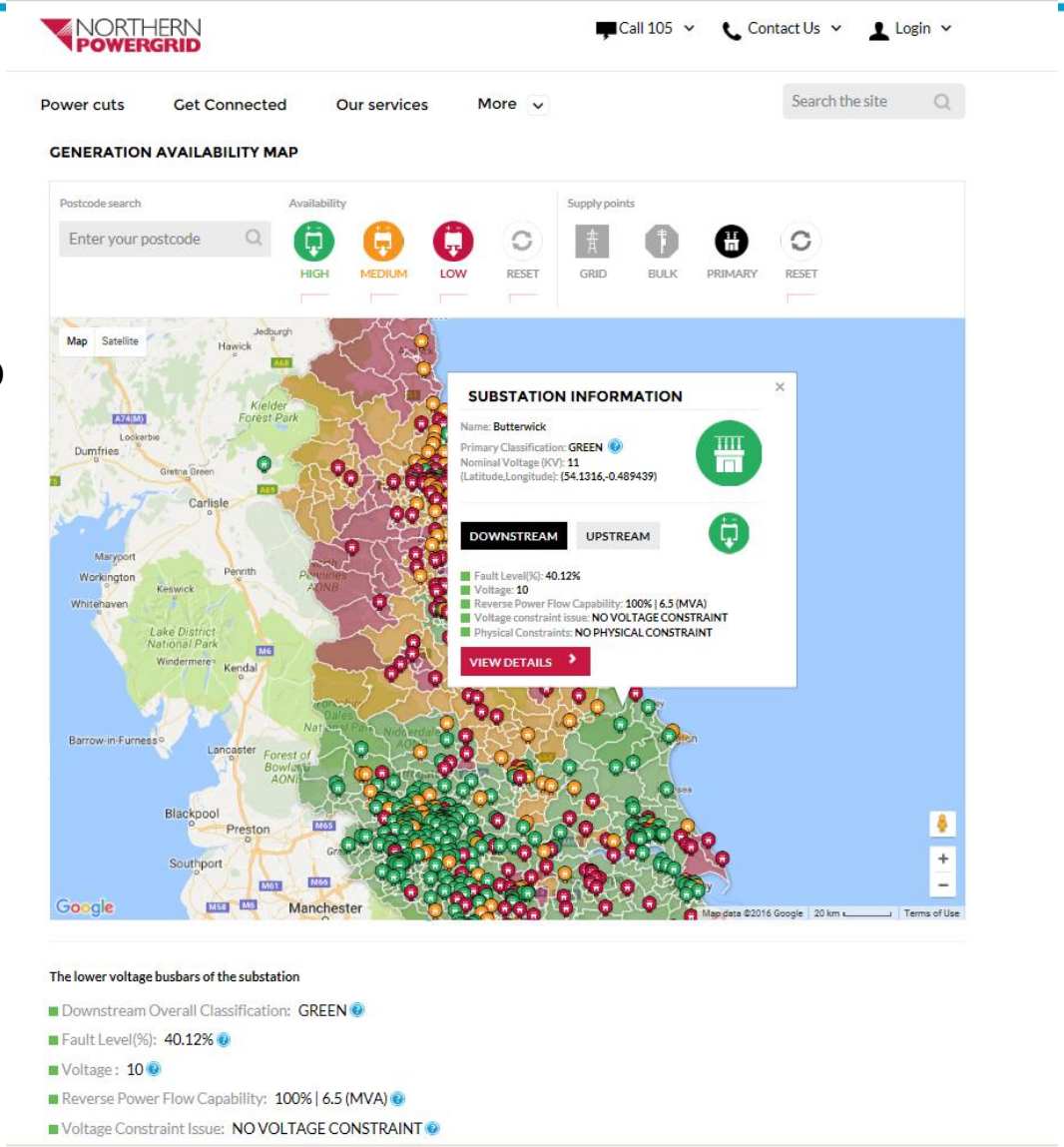
DNOs have responded

- Online application and access to data
- DG surgeries
- Connection guides
- Consortium arrangements to share cost
- Heat maps
- DG-DNO steering group established
- Transmission-Distribution Steering Group established



Innovation has enabled smarter approaches

- We've invested nearly £100m of customer money funding innovative projects to release capacity/improve connections for DG

Flexible Plug and Play (UKPN)

Low carbon hub (WPD)

Active Network Management (SSE)

Real time thermal ratings (NPG)

Kent Area System Management (UKPN)

Accelerating Renewable Connections (ARC) (SP)

FlexDGrid (WPD)

Capacity to Customers (ENWL)

Low Voltage Network Templates (WPD)

Network Equilibrium (WPD)

- These are now becoming business as usual. Customers should have a choice between firm and a viable non-firm offer – or an explanation why not.

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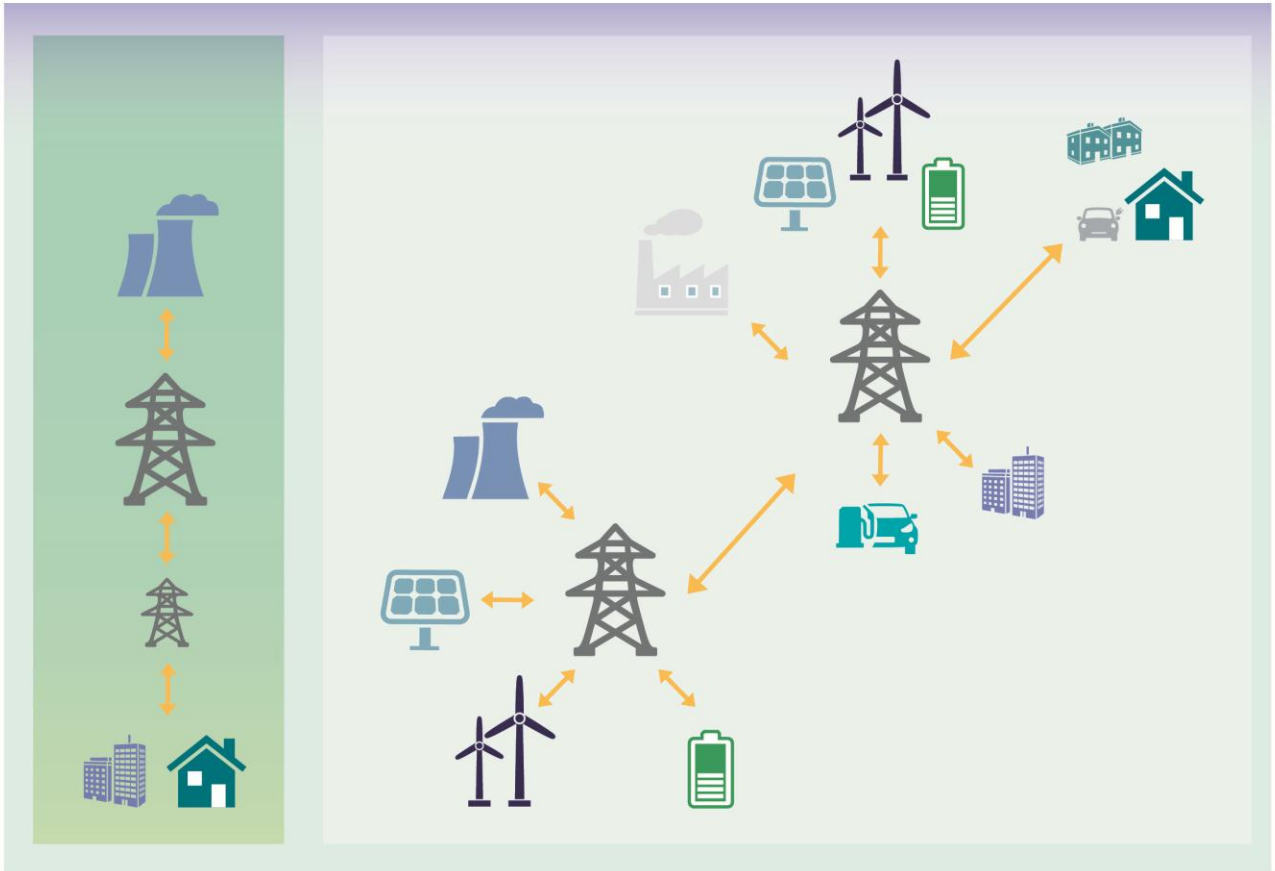
Change and the need for flexibility



We need new forms of flexibility and we want to maintain service and reliability while keeping costs down for consumers

Last year we published a position paper

Making the electricity system more flexible and delivering the benefits for consumers

- Our five priorities:
  - Storage
  - Expanded role for Distribution Network Operators – "DSOs"
  - Role of aggregators
  - Industrial and Commercial consumers' potential to offer flexibility
  - Network charging
- Working with government

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Forthcoming call for evidence structure

1. Removing policy and regulatory barriers
   - Storage
   - Aggregators

2. Providing price signals for flexibility

3. A system for the consumer
   - Smart appliances
   - Electric vehicles
   - Consumer protection

4. The role of different parties in system and network operation
   - The potential move to DSOs and the DSO-TSO relationship

5. Innovation

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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.

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