

# Market design & renewables IEA ELECTRICITY SECURITY ADVISORY PANEL



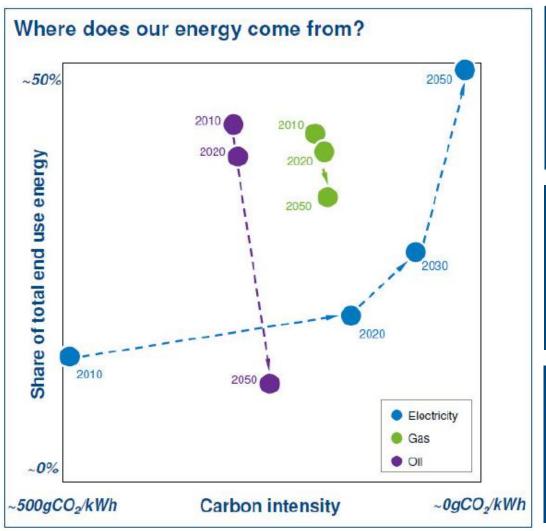




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## nationalgrid

### The changing energy landscape







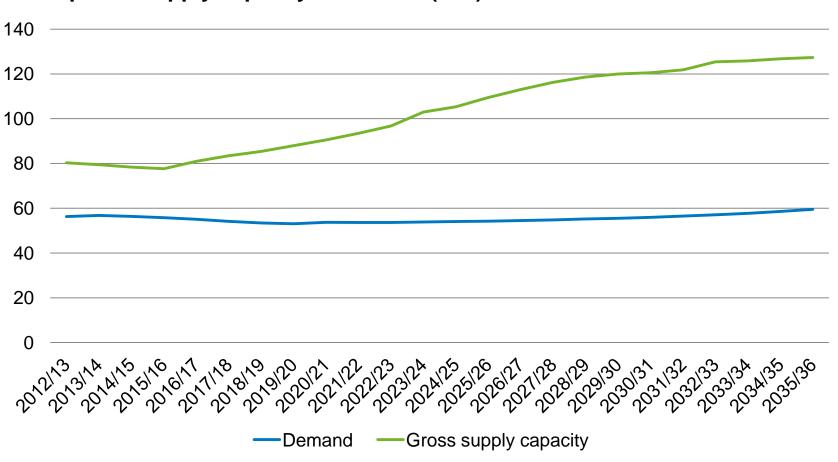






# Conventional metrics no longer provide appropriate investment signals

#### **Gross power supply capacity & demand (GW)**





# **Electricity Market Reform measures bring forward Investment**

A package of measures to.....



Incentivise low carbon investment



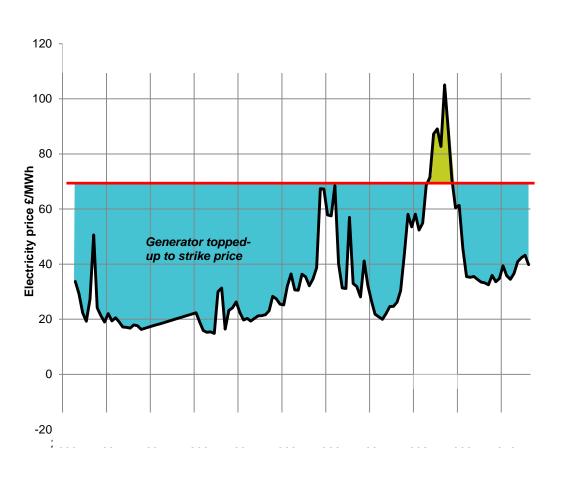
Manage emissions



Provide reliable and flexible security of supply

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#### **Contract for difference framework**

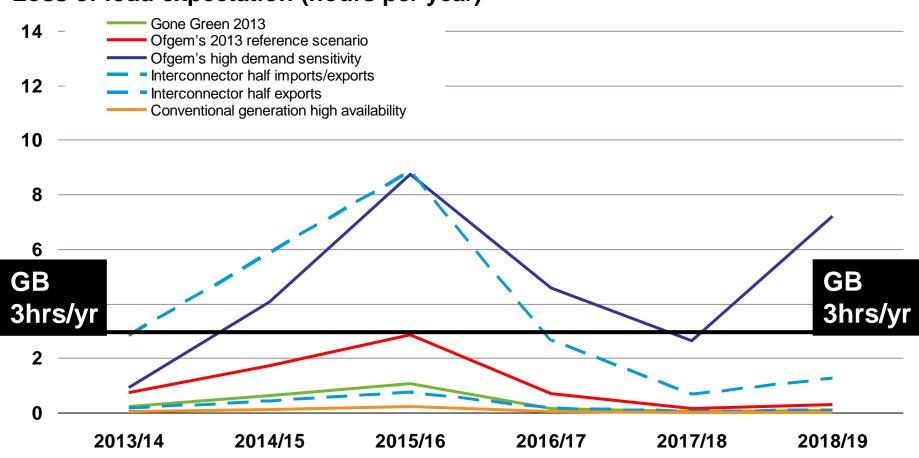


- Eligibility
  - Planning permission
  - Grid Connection agreement
- Allocation
  - Levy Control Framework availability
  - First come, first served
  - Allocation rounds
- Industry Concerns
  - Levy Control Framework Budget
  - Strike price degradation
  - Contract length
  - Project phasing



### **Capacity mechanism**

#### Loss of load expectation (hours per year)



- We aim to make our UK Future **Energy Scenarios evidence-based** & shaped by stakeholder feedback
- Two key feedback themes emerged through our 2013/14 stakeholder engagement process:
  - the need for a broader scenario range than in 2013 to capture the wide bandwidth of uncertainty
  - we should explore scenarios based around the 'trilema'
- In response to this feedback we have developed four scenarios based around 'affordability' & 'sustainability' as key variables
- Our scenarios are designed to be holistic & self consistent across all energy supply & demand

Less emphasis More emphasis **LOW CARBON LIFE GONE GREEN** Economic: growing economy Economic: growing economy Political: short term volatility but long term Political: European harmonisation, long consensus around decarbonisation term certainty Technological: renewable generation at Technological: high renewable generation, local level, high innovation high innovation Social: high uptake of electric vehicles, low **Social:** society engaged, high energy energy efficiency, 'going green' not a efficiency, high uptake of electric vehicles & conscious decision heat pumps Environmental: carbon targets likely to be Environmental: all targets hit, including hit, no new targets introduced new European targets post 2020 **NO PROGRESSION SLOW PROGRESSION Economic:** slower economic recovery **Economic:** slower economic recovery Political: political will, but financial Political: inconsistent statements & investor uncertainty constraints prevent delivery Technological: gas over renewable Technological: low carbon generation over renewables, low innovation generation, low innovation Social: low energy efficiency, low uptake of **Social:** society engaged, high energy electric vehicles & heat pumps efficiency, low uptake of electric vehicles & heat pumps Environmental: targets likely to be missed, Environmental: renewables target missed. no new targets introduced new European targets introduced SUSTAINABILITY