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OESC Edinburgh 2015 - Panel Session “Ten Years to Prepare”

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How much offshore wind (and system storage) will there be in 2050?

- It all depends!



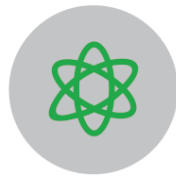
Key technology priorities include



Bioenergy



Carbon
Capture and
Storage



New Nuclear



Offshore
Wind



Gaseous
systems



Efficiency
of vehicles



Heat
provision for
buildings



ETI's Clockwork and Patchwork Scenarios



are representative of the challenges the UK faces in a move to low carbon – displaying the scale of the challenge



Clockwork

- Well coordinated, long term investments allow energy infrastructure to be installed “like clockwork”
- Large scale use of district heating
- Vehicles and transport; similar to now, though with improved efficiency
- Large scale investment in CCS & New Nuclear
- Growth in renewables continues to 2020s, moves to replacing old renewables capacity
- Hydrogen used for peaking generation plant, produced from bioenergy with CCS

- 2050 electricity capacity ~ 130GW
 - Of which
 - ~20 GW Offshore Wind
 - ~15 GW Onshore Wind
 - ~10GW of other renewables



Patchwork

- Central government takes less of a lead role
- Patchwork of distinct regional energy strategies
- Society gets involved; partly by choice and partly in response to rising energy costs
- Limited role for offsetting, so extensive decarbonisation needed across all sectors.
- Over time, patchwork solutions integrate into a national solution
- Government backs large scale projects (eg Offshore Wind)
- Local authorities and communities support CHP, onshore wind and solar
- Initially, lower investor appetite for CCS and Nuclear
- Limited use of Bioenergy; about ½ that of 'clockwork'.
 - the negative emissions shortfall has to be filled by next-lowest cost low carbon solutions (i.e. a lot of OSW).
- Improved energy efficiency in housing
- Cities set aggressive vehicle efficiency targets
- 2050 electricity capacity ~190GW
 - Offshore wind ~55GW, Onshore wind ~20GW
 - Other renewables ~45GW



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ETI have created two scenarios for 2050

- They are scenarios that are plausible and affordable
 - They are not predictions or forecasts of most probable outcomes
 - Help illustrate key lessons
 - Identify technologies likely to be important to cost effective low carbon energy system for the UK
 - And some that are more expensive, but have popular support
- Both scenarios deliver an affordable transition to low carbon energy in the next 35 years
 - Abatement costs in range 1 to 2% of GDP
- For more information on the scenarios, go to <http://www.eti.co.uk/options-choices-actions-uk-scenarios-for-a-low-carbon-energy-system/>



ETI's Scenarios demonstrate the importance of CCS and Bioenergy

Including them in the energy system halves the cost of meeting UK climate change targets

