

BG Group Proposal - Alternative to proposed Capacity Payments Market

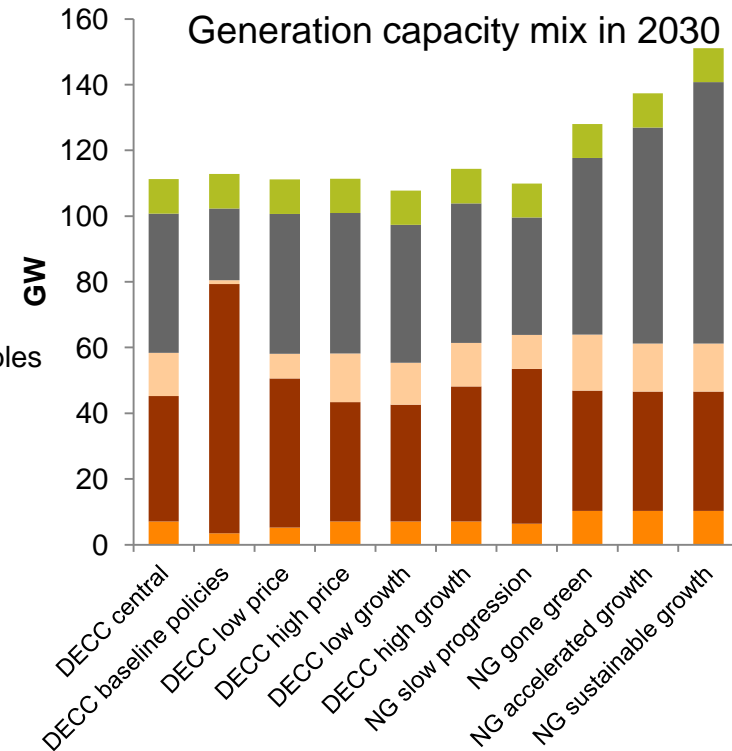
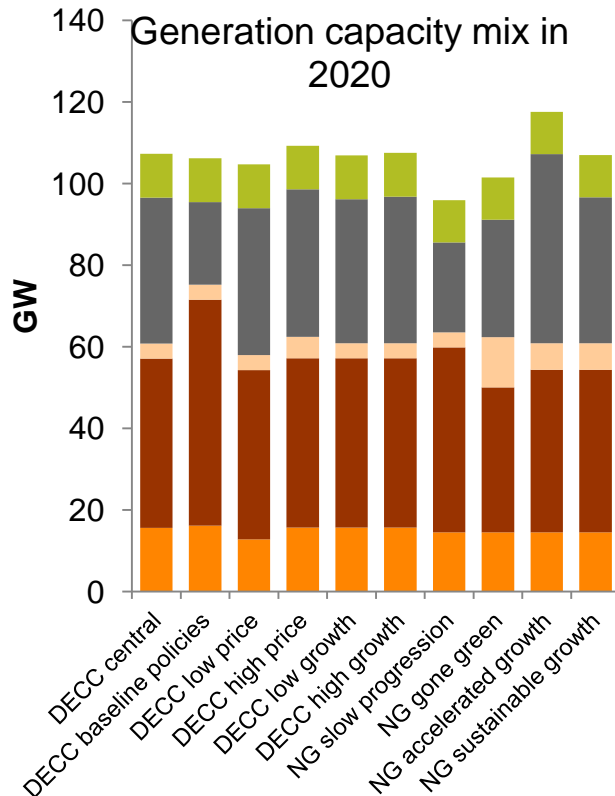


26 June 2012

DECC Gas Generation Strategy submission



Increasing role of renewables in energy mix

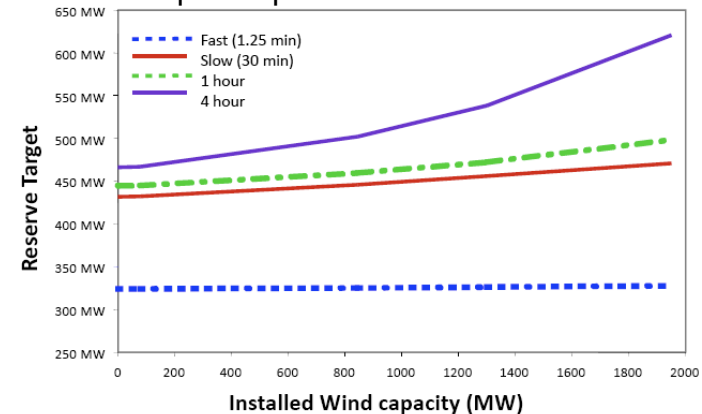


Sources: DECC 2011. Energy and Emissions Projections, and National Grid 2011: Future Energy Scenarios.

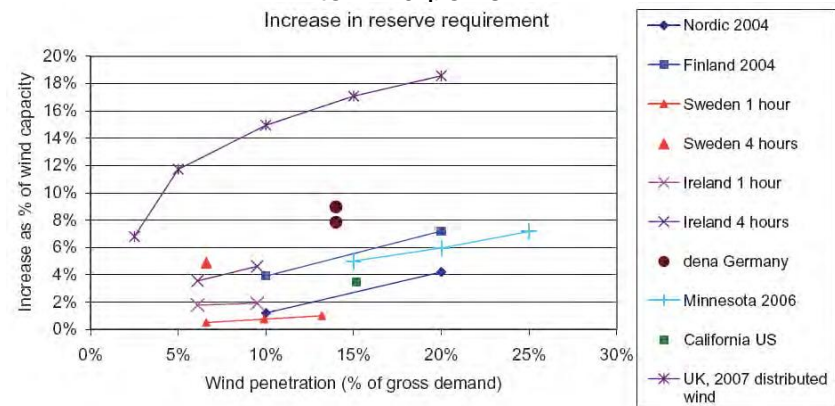
Intermittency of renewable generation

- Requirement of reserves is strongly related to the growth of the error in the wind forecast with the distance to the real time
- Leading to increased requirements for reserve

Operating reserve requirements as a function of wind power penetration – Ireland



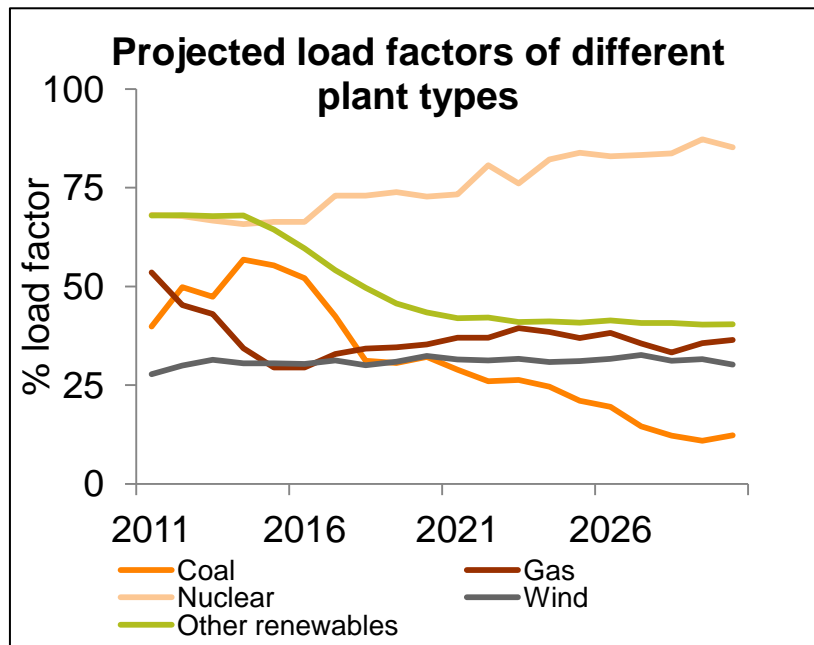
Results for the increase in reserve requirement due to wind power



Source: MIT 2011 Wind Week. Presentation by Mark O'Malley. <http://web.mit.edu/windenergy/windweek/Workshop2011.html>. Holttinen, Meibom, et al. (2011). Impacts of Large Amounts of Wind Power on Design and Operation of Power Systems: Results of IEA Collaboration.

Outlook for availability of flexible capacity

- Increasing penetration of renewables expected to lead to lower LF for flexible plant



Source: Calculated from DECC 2011. Central case scenario, Energy and Emissions Projections.

- Expectation that future earnings from energy sales will not be high to make plant economically viable
- Leading to mothballing of technically fit plant, reducing stock of plant able to offer reserve
 - Increase in balancing costs
 - Reduction in system security
- Situation likely to worsen as this feeds through into investment decisions for new plant

Build year	Plant mothballed in 2011/12	Owner	MW
2000	Fife	SSE	123
2005	Peterhead units 2, 3 & 4	SSE	810
1997	King's Lynn	Centrica	340
1993	Peterborough	Centrica	405
1993	Teesside Units 1 & 2	GDF Suez	1800 (but now running at 200MW)
1995	Keadby & Medway	SSE	1358
TOTAL mothballed			4636

Proposal

- Enable National Grid to offer long term ancillary services contracts for reserve with peaking plant
- Payment mechanism consistent with existing ancillary services framework
 - Annual capacity/availability payments would be made and adjusted according to the achieved availability of the plant
 - Participants would place offers into the Balancing Mechanism to cover variable costs of delivering such flexibility
- Options for cost recovery
 - Ancillary services component of settlement prices
 - Balancing Services Use of System (BSUoS) Charges

Pros

- Would not require primary legislation - could be achieved through a variation to National Grid's System Operator Incentives
 - Modification to the Special Conditions of NG's Transmission Licence
 - Modification to the existing Balancing and Settlement Code

- Tailored

The amount of capacity required to be contracted under these arrangements could be calculated on the basis of system needs, such as:

- Anticipated cumulative periods of stress caused by peaks
 - Historical utilisation
 - Anticipated changes to forecast error across the system as a whole, as a result of changes in the generation mix
- Open and transparent
 - The methodology would be set out in National Grid's Procurement Guidelines (which are subject to annual review and industry consultation)

Pros (2)

- Economically efficient
 - Provides access to additional reserve capacity at a lower cost to the system
 - More targeted payments than capacity market approach – does not offer additional rewards to plant that would have been available anyway
- System security
 - Line of sight over ancillary services revenues would leading to a reduction in mothballing of ‘marginal’ plant
 - Portfolio generators more willing to invest in new generation, if revenue stability of existing fleet improves
 - Doesn’t ‘sterilise’ capacity
 - May choose offer some units as reserve and sell others into the wholesale market
 - Plant may be offered into the wholesale market closer to real time as NG reserve requirements decline