Carbon costing update - Methodology / Assumptions for Creating Background Generation

- SYS data taken from the TEC Register between 2008/9 to 2014/15.
- Consideration of LCPD plants factored in by removing from the background generation at 2015. No consideration taken into the capacity of LCPD affected plants between 2008/09 and 2015.
- Assume all Nuclear AGR Stations are granted 5 year life extensions.
- Assume all Nuclear Plant removed from background generation at end of their lifetime (after including additional 5 years for AGR stations).
- Background developed with assumption that plant ending in a certain year will not contribute capacity in the following year; i.e. plant ending in 2015 will not contribute capacity in the year 2016/17.
- Data split into SYS study zones.
- Data in each SYS study zone categorised by generation type
- Generation merit order per SYS study zone established by ranking plant according to generation fuel, using the merit order established in the GBSQSS Consultation Document (Review for Onshore Intermittent Generation).
- Additional assumptions on the merit order;
    - CHP and Thermal categorised with base gas
    - CCGT plant split between base gas and marginal gas based on the year of plant commission (i.e. any plant commissioned after mid-1997 assumed to be base gas)
- Capacity extrapolated from 2014/15 to 2020 (using trends between 2008 and 2015) by pro-rating wind only.
- All other generation types assumed to maintain the same capacity between 2014/15 and 2020 (after consideration of LCPD and Nuclear drop-outs).
- Propose to implement multiple drop out rates per zone. This allows us to avoid publishing specific drop out assumptions on individual projects. The drop out rather will be wind and non wind. For wind initial thoughts are 20%. For non wind assuming only a third of new plant goes ahead. This needs to be done to ensure a credible plant margin. Can we objectively justify 20% or any other number? – note it is iterative with the amendment so can not look at historic drop out rates.
- Propose to implement a closure rate for non-wind; initially this will be set at 0. This will allow more extreme scenarios to be modelled. Need to be careful doe not double count with the specific closures above.
- Generator pricing, stay at current levels
- Generator volumes are to be established using probabilistic analysis techniques as described in the SQSS consultation.
- Model - Use the SQSS Constraint model, see annex 5 of ‘GBSQSS Consultation Document (Review for Onshore Intermittent Generation)’. Analysis is on six boundaries B2, B6, B8, B9, B15, +B1 / B7.
- Boundary capabilities: 'authorised' increases from current 2008 up to 2012 from SYS. Beyond 2014 will get tricky, establish pseudo reinforcements to maintain a near compliant system for the given background
- Demand: as per SYS