

## **Teesbay: Connect & Manage Derogation Report**

This report considers the incremental impact of a temporary derogation against requirements contained within the NETS Security and Quality of Supply Standards (NETS SQSS) as a consequence of the connection of the above named generation project to the National Electricity Transmission System, under the Connect & Manage Arrangements, in advance of Wider Transmission Reinforcement Works being completed.

### **Note on assessment of incremental constraint costs:**

The assessment of incremental constraint costs contained in this derogation report is based upon the contracted connection background at the time the assessment was undertaken. The contracted background will change to the extent that new projects apply for connection or existing contracted projects delay, revise their Transmission Entry Capacity or terminate. Changes to the contracted background may change the level of incremental constraint costs from that assessment contained within this and other derogation reports. Once issued, the derogation reports will not be updated to reflect changes in the contracted connection background used in the calculations.

For updated information on the aggregated costs and benefits of the Connect and Manage regime, please see the latest quarterly Connect and Manage report on the National Grid website.

<http://www.nationalgrid.com/uk/Electricity/Codes/gbsqsscode/ConnectManageDocs/>

### **Seven Year Statement boundary information:**

- An overview of the Seven Year Statement boundaries and study zones that may be referred to in derogation reports can be found in SYS Appendix A, Fig. A.1.5 (on a geographical basis) and Fig. A.4.4 (on a schematic basis):

<http://www.nationalgrid.com/NR/rdonlyres/FA14F11A-3A49-4C98-9661-A0BCC85FA56E/41468/NETSSYS2010AppendixA.pdf>

### **Carbon benefit assumptions:**

The carbon benefit assessment contained in this derogation report is based on the following assumptions:

- Load factors assumed: offshore wind = 35%; onshore wind = 30%
- DECC medium-term advice for carbon price (table 3) and emissions factors (table 1) applied (positive marginal carbon impact by displacing gas generation) = 0.39 T\_CO2/MWh

[http://www.decc.gov.uk/assets/decc/Statistics/analysis\\_group/81-iag-toolkit-tables-1-29.xls](http://www.decc.gov.uk/assets/decc/Statistics/analysis_group/81-iag-toolkit-tables-1-29.xls)

## Part 1: Technical Description of Non Compliance

Relevant Paragraph(s) of NETS Security and Quality of Supply Standard	Cause	Part of System Affected	Initial Conditions		Interim Operation al Solution	Long Term Solution, to include brief description of access requirements.	Derogation Expiry Date
			System Intact	Circuit Outage			
NETS SQSS Chapter 2- Generation connection criteria - 2.10.8, and;  NETS SQSS Chapter 4- Design of the Main Interconnected Transmission System- 4.6	Thermal	Lackenby – Saltholme – Hartlepool local group	Double circuit loss of Lackenby – Thornton circuits;	N/A	Output restriction	Completion of replacement of the Tees crossing, reconductoring of the Lackenby – Tod Point – Hartlepool, Lackenby – Brine Field and Brine Field – Norton circuits, due to complete on 31 October 2014.	This derogation will apply for the period between connection of the Teesbay embedded windfarm (31 October 2011) and the completion of the reconductoring works (31 October 2014).

Teesbay is a 62MW generator, which has applied to connect embedded into the Lackenby 132kV group. Reinforcement works on the wider transmission system have been identified via the Statement of Works and project progression processes. The generator is seeking a connection date of 31 October 2011, in advance of the necessary reinforcement works, under the Connect and Manage arrangements.

Connection of this additional generation, against the contracted background of new and existing generation in the area, gives rise to thermal issues. The system is not compliant with the NETS SQSS until the completion of the Tees crossing replacement and reconductoring works between Lackenby and Hartlepool by 2014.

## Part 2: Expected Consequence of Non-Compliance

Value of Carbon Benefit (£k)	2011/12: 370.68 2012/13: 889.63 2013/14: 953.18 2014/15: 556.02 <b>Total: 2,769.50</b>
Summary of proposed System Operator actions to manage non-compliance	<p>To manage the local constraint, generation at Teesside or at Teesbay must be restricted. Restricting the output of Teesside has been assumed; the power station is of sufficient size to reduce output by 62MW without desynchronising a gas or steam turbine (assuming the station is generating at a level high enough for the constraint to become active).</p>
Estimated range of costs to manage non compliance (£k)	<b>Central Case (£k):</b> 2011/12: 95.79 2012/13: 236.79 2013/14: 243.9 2014/15: 146.54 <b>Total: 723.02</b>
Description of risk due to network non compliance	