Tilbury Marshes Power Station ExCS Informal Notice - Appendix 1

31st March 2020
Our Ref: 2020 – Tilbury Marshes ExCS

This Appendix relates to the proposed substitution of ***Non-incremental Obligated Capacity*** to Tilbury Marshes Power Station from Stanford Le Hope (Coryton) DC exit point.

1. Recipient selection:

The PARCA application is in respect of Tilbury Marshes Power Station for **Enduring Annual NTS Exit (Flat) Capacity**. The request triggered the opening of a PARCA Exit Window. A further PARCA application was received in this area for Grain Power, and both applications were considered together.

2. Donor selection:

Substitution from individual donor NTS exit points were assessed by reducing the capacity at the most favourable NTS exit points that had Substitutable Capacity. The most favourable donor NTS exit points will normally be the furthest downstream NTS exit points from the recipient NTS exit point, as measured by pipeline distance.

For the purposes of the NTS Exit Capacity Substitution analysis, three donor sequences of NTS exit points were analysed to determine the best exchange rate.

The exit points identified as potential donor sites were as follows:

NTS exit Point	Type	Obligated Capacity (GWh/d)	Unsold Capacity (GWh/d)
Shorne	DN	22.59	2.76
Stanford Le Hope (Coryton)	DC	38.6	38.6
Barking (Horndon)	DC	58.59	58.59
Horndon	DN	46.41	13.1
Luxborough Lane	DN	165.3	89.15
Matching Green	DN	92.34	41.87
Epping Green	DC	19.6	10.4

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The pipeline distances to the potential donor NTS exit points are:

From	To	Pipeline distance (km)
Tilbury Marshes	Shorne	6.29
	Stanford Le Hope (Coryton)	8.23
	Barking (Horndon)	12.29
	Horndon	12.29
	Luxborough Lane	39.63
	Matching Green	51.8
	Epping Green	65.48

As a result of these analyses, the final NTS exit points selected were as follows;

NTS Exit Point	Type	Recipient / Donor
Tilbury Marshes	DC	Recipient
Stanford Le Hope (Coryton)	DC	Donor

3. Network analysis: Supply & demand scenario

- Substitution analysis was conducted for the Gas Year 2022/23 as the first year the capacity will be required by Tilbury Marshes.
- The analysis starting point is our 2022/23 1-in-20 peak day demand network. From this a South East sensitivity network is created, taking the most onerous credible demand levels for power stations (and other DCs), and GDN offtakes from sold and forecast levels for the South East zone as detailed in Section 5, and with South East supplies reduced to a credible minimum.
- The substitution network is created from the South East sensitivity network, with the potential GDN NTS exit points in the area increased to obligation in accordance with the Methodology, as these were deemed to have a reasonable probability of being donors.
- Tilbury Marshes Power Station was set at the level of prevailing Obligated Exit Capacity in 2022/23 (21,146,822 kWh/d).

4. Enhanced Network

- 35 MW new unit at Huntingdon compressor.
- Flow mod at Cambridge compressor for 60 mcm\d flow.
- 14.55km*882.64mm Chelmsford to Billericay

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- 14.95km*882.64mm Billericay to Horndon
- 27.53km*736.60mm Farningham to Tatsfield

5. Exit points set at obligated, sold or otherwise:

   - All South East DC sites are set at obligated level, with the remaining DCs being scaled back from the forecast so that the aggregate total matches the forecast total.
   - Sites increased to their obligated level as part of the South East sensitivity network are the potential donors (GDN offtakes) listed above; none of these sites had already been set to their obligated level.
   - All other GDN NTS exit points were at Sold level as booked through the annual NTS Exit (Flat) Capacity application processes.

6. Flow adjustments:

   - Flow adjustments were made in accordance with Paragraph 45 of the Methodology.
   - Flow adjustments are detailed in Section 3 above, the substitution network demand is 5752 GWh/d, which is higher than the 1 in 20 peak demand (including sold capacity levels at GDN NTS Exit Points).

7. Summary of network analysis key parameter changes:

   - No significant parameter changes were required between substitution networks.

8. Exchange Rate Validation

To validate that the above donor list and the sequence of substitution provides the best exchange rate, three different donor sequences were assessed. These are listed, with their respective exchange rates, in the following tables:

Sequence 1 (selected)

Donor NTS Exit Points	Capacity Donated (kWh/d)	Capacity Received (kWh/d)	Exchange Rate (Donor: Recipient)
Stanford Le Hope (Coryton)	22,340,000	21,146,822	1.0564:1

Sequence 2

Donor NTS Exit Points	Capacity Donated (kWh/d)	Capacity Received (kWh/d)	Exchange Rate (Donor: Recipient)
Barking (Horndon)	23,300,000	21,146,822	1.1018:1

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Sequence 3

Donor NTS Exit Points	Capacity Donated (kWh/d)	Capacity Received (kWh/d)	Exchange Rate (Donor: Recipient)
Luxborough Lane	30,160,000	21,146,822	1.4262:1