

## Tilbury Marshes Power Station ExCS Informal Notice - Appendix 1

29<sup>nd</sup> May 2018

Our Ref: 2018 – Tilbury Marshes Power Station ExCS

This Appendix relates to the proposed substitution of NTS Exit Capacity to Tilbury Marshes NTS Exit Point from Tatsfield GDN (SE) NTS Exit Point.

### 1. Recipient selection:

The PARCA application in respect of Tilbury Marshes power station for Enduring Annual NTS Exit (Flat) Capacity was received through a PARCA Exit Window triggered by Ferrybridge D power station. Also during that Window, further PARCA applications was received. However, these were not local to Tilbury Marshes.

### 2. Donor selection:

Substitution from individual donor NTS Exit Points was 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, four (4) 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:

<b>NTS Exit Point</b>	<b>Type</b>	<b>Obligated Capacity (GWh/d)</b>	<b>Unsold Capacity (at 1/05/18 (GWh/d))</b>
Stanford Le Hope (Coryton)	DC	38.6	38.6
Farningham	GDN (SE)	135.12	48.5
Horndon	GDN (NT)	46.41	13.10
Shorne	GDN (SE)	67.06	18.78
Tatsfield	GDN (SE)	221.74	28.97

The pipeline distances to the potential donor NTS Exit Points are:

<b>From</b>	<b>To</b>	<b>Pipeline distance (km)</b>
Tilbury Marshes	Stanford Le Hope (Coryton)	5.45
	Farningham	18.05
	Horndon	9.51
	Shorne	3.53
	Tatsfield	43.08

As a result of these analyses, the final NTS Exit Points selected were as follows;

<b>NTS Point</b>	<b>Type</b>	<b>Recipient / Donor</b>	<b>Current Baseline (kWh/d)</b>	<b>Proposed Baseline (kWh/d)</b>	<b>Remaining unsold capacity (kWh/d)</b>
Tilbury Marshes	DC	Recipient	0	21,146,822	0
Tatsfield	DN	Donor	221,742,083	200,601,605	7,826,972

In accordance with paragraph 62 of the methodology the individual donor NTS Exit Point to recipient NTS Exit Point exchange rate was determined and is as follows:

<b>Donor NTS Exit Points</b>	<b>Exchange Rate ( Donor : Recipient)</b>
Tatsfield	0.9997 : 1

### 3. Network analysis: Supply & demand scenario

- Substitution analysis was conducted for the Gas Year 2020/21 as the first year the capacity will be required by Tilbury Marshes power station.
- The analysis starting point is our 2020/21 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 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 NTS Exit Point was set at the level of prevailing Obligated Exit Capacity in 2020 (0 kWh/d).

### 4. Enhanced Network

- Reinforcement of feeder 5 from Bacton to Tatsfield was required to facilitate flow of potential donors at baseline levels.

### 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 5512 GWh/d, which is higher than the 1 in 20 peak demand (including sold capacity levels at GDN NTS Exit Points).

7. Remaining unsold NTS Exit (Flat) Capacity at the donor NTS Exit Points:

If substitution is effected as stated in this notice, the remaining unsold Annual NTS Exit (Flat) Capacity at the donor exit points is shown in the following table.

<i>NTS Point</i>	<i>Type</i>	<i>Remaining unsold capacity (kWh/d)</i>
Tilbury Marshes	DC	0
Tatsfield	GDN (SE)	7,826,972

8. Summary of network analysis key parameter changes:

- No significant parameter changes were required between substitution networks.

9. Exchange Rate Validation

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

Sequence 1

<i>Donor NTS Exit Points</i>	<i>Capacity Donated (kWh/d)</i>	<i>Capacity Received (kWh/d)</i>	<i>Exchange Rate (Donor : Recipient)</i>
Stanford Le Hope (Coryton)	22,490,000	21,146,822	1.0635 :1

Sequence 2

<i>Donor NTS Exit Points</i>	<i>Capacity Donated (kWh/d)</i>	<i>Capacity Received (kWh/d)</i>	<i>Exchange Rate (Donor : Recipient)</i>
Farningham	21,150,000	21,146,822	1.0002 : 1

Sequence 3

<i>Donor NTS Exit Points</i>	<i>Capacity Donated (kWh/d)</i>	<i>Capacity Received (kWh/d)</i>	<i>Exchange Rate (Donor : Recipient)</i>	<i>Total Exchange Rate (Donor : Recipient)</i>
Shorne	1,733,538	1,730,000	1.002 : 1	1.0017 : 1
Farningham	19,450,000	19,416,822	1.0017 : 1	

Sequence 4 (selected)

<i>Donor NTS Exit Points</i>	<i>Capacity Donated (kWh/d)</i>	<i>Capacity Received (kWh/d)</i>	<i>Exchange Rate ( Donor : Recipient)</i>
Tatsfield	21,140,478	21,146,822	0.9997 : 1