

Hirwaun ExCS Informal Notice - Appendix 1 - Revised

15th April 2019

Our Ref: 2018 – Hirwaun ExCS

This is a revised version of Appendix 1 dated 29th May 2018 and supersedes that document. This Appendix relates to the proposed substitution of NTS Exit Capacity to Hirwaun NTS Exit Point from Dowlais DN (WS) and Tonna (Baglan Bay) DC NTS Exit Points.

1. Recipient selection:

The PARCA application is in respect of Hirwaun power station for Enduring Annual NTS Exit (Flat) Capacity and was received through a PARCA Exit Window, triggered by Ferrybridge D power station. During the PARCA Exit Window, further PARCA applications were received. However, these were not local to Hirwaun.

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, 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:

NTS Exit Point	Type	Obligated Capacity (GWh/d)	Unsold Capacity (at 1/5/18) (GWh/d)
Dowlais	DN	105.97	14.60
Baglan Bay	DC	48.65	21.90
Gilwern	DN	82.68	7.27
Ross SW	DN	4.53	0.50
Ross WM	DN	16.52	6.58
Fiddington	DN	25.95	4.65

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

<i>From</i>	<i>To</i>	<i>Pipeline distance (km)</i>
Hirwaun	Dowlais	18.18
	Baglan Bay	15.35
	Gilwern	34.95
	Ross SW	78.75
	Ross WM	77.96
	Fiddington	118.42

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

<i>NTS Point</i>	<i>Type</i>	<i>Recipient / Donor</i>
Hirwaun	DC	Recipient
Dowlais OT	DN	Donor
Tonna (Baglan Bay)	DC	Donor

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 Hirwaun power station in the original request.
- The analysis starting point is our 2020/21 1-in-20 peak day demand network. From this a South West sensitivity network is created, taking the most onerous credible demand levels for power stations (and other DCs), and DN offtakes from sold and forecast levels for the South West zone as detailed in Section 5, and with South West supplies reduced to a credible minimum.
- The substitution network is created from South West sensitivity network, with the potential donor distribution network 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.
- Hirwaun NTS Exit Point was set at the level of prevailing Obligated Exit Capacity from October 2020 (0 kWh/d).

4. Enhanced Network

- System enhancements for the substitution network were required in the form of an additional 3 mcm/d at Milford Haven.

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

- All South West 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 West sensitivity network are the potential donors (DN offtakes) listed above; none of these sites had already been set to their obligated level.
- All other DN 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 5621 GWh/d, which is higher than the 1 in 20 peak demand (including sold capacity levels at DN 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, four different donor sequences were assessed. These are listed, with their respective exchange rates, in the following tables:

Sequence 1 (selected)

Recipient NTS Point	Donor NTS Exit Points	Capacity Donated (kWh/d)	Capacity Received (kWh/d)	Exchange Rate (Donor: Recipient)	Total Exchange Rate (Donor: Recipient)
Hirwaun	Dowlais	14,608,249	13,518,646	1.0806 : 1	1.1133 : 1
	Tonna (Baglan Bay)	14,115,000	12,281,354	1.1493 : 1	

Sequence 2

Recipient NTS Point	Donor NTS Exit Points	Capacity Donated (kWh/d)	Capacity Received (kWh/d)	Exchange Rate (Donor: Recipient)	Total Exchange Rate (Donor: Recipient)
Hirwaun	Baglan Bay	21,900,000	18,980,759	1.1538 : 1	1.1692 : 1
	Gilwern	7,275,846	6,108,510	1.1911 : 1	
	Ross WM	990,000	710,731	1.3929 : 1	

Sequence 3

Recipient NTS Point	Donor NTS Exit Points	Capacity Donated (kWh/d)	Capacity Received (kWh/d)	Exchange Rate (Donor: Recipient)	Total Exchange Rate (Donor: Recipient)
Hirwaun	Tonna (Baglan Bay)	21,900,000	18,980,759	1.1538 : 1	1.1349 : 1
	Dowlais	7,380,000	6,819,241	1.0822 : 1	

Sequence 4

Recipient NTS Point	Donor NTS Exit Points	Capacity Donated (kWh/d)	Capacity Received (kWh/d)	Exchange Rate (Donor: Recipient)	Total Exchange Rate (Donor: Recipient)
Hirwaun	Dowlais	14,608,249	13,518,646	1.0806 : 1	1.1815 : 1
	Gilwern	7,275,846	6,221,330	1.1695 : 1	
	Ross WM	6,582,296	4,823,608	1.3646 : 1	
	Ross SW	506,643	371,221	1.3648 : 1	
	Fiddington	1,510,000	865,195	1.7452 : 1	