

Substitution - Prioritising Disconnected Sites

Assumptions
Looked at 'Live' PARCAs (Terminated PARCAs ignored) and Exit substitution only, since January 2018 as to what difference would change of Methodology to prioritise disconnected sites have made.
Considered Barking, Enron Billingham, and Thornton Curtis Killingholme disconnected sites only, as large capacity values.
Assumed exactly 3:1 exchange rate from Barking to Peterborough Eye and Staythorpe; and Thornton Cur implication from previous analysis, as actual exchange rate not available.
PARCA timeline followed previous timeline for receiving and completing PARCAs.

Option 1. Within zone. Exchange Rate < 3:1

Barking (SE)

	Recipient	Capacity Signal Received	Actual Donated	From (donor)
25/05/2018	Tilbury Marshes	17,301,946	17,300,000	Tatsfield
30/03/2020	Grain North	5,981,040	2,763,893	Shorne
			4,160,000	Stanford Le Hope (Coryton)
	Total	23,282,986	24,223,893	

Remaining unsold

Enron Billingham (NO)

	Recipient	Capacity Signal Received	Actual Donated	From (donor)
07/11/2018	Saltholme	7,310,160	3,237,148	Billingham ICI (Terra Billingham)
			4,860,000	Enron Billingham
	TOTAL	7,310,160	8,097,148	

	Rawcliffe	2,201,700	250,000	Cowpen Bewley
			1,800,000	Enron Billingham DC
	TOTAL	2,201,700	2,050,000	

	<i>Total Saltholme+Rawcliffe</i>	<i>9,511,860</i>	<i>10,147,148</i>	
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Remaining unsold

	Recipient	Capacity Signal Received	Actual Donated	
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Option 1 Total	4 PARCAs	32,794,846	34,371,041	
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Option 3. Within zone. Regardless of Exchange Rate

Barking (SE)

	Recipient	Capacity Signal Received	Actual Donated	From (donor)
25/05/2018	Tilbury Marshes	17,301,946	17,300,000	Tatsfield
	TOTAL	17,301,946	17,300,000	
25/05/2018	Peterborough Eye	1,812,621	3,004,782	Mappowder
	TOTAL	1,812,621	3,004,782	
08/11/2018	Staythorpe	82,000,000	1,070,148	Silk Willoughby
			20,480,000	Peterborough Power St
			7,826,972	Tatsfield
			37,509,029	Farningham B
			48,496,593	Farningham
			4,710,000	Shorne
	TOTAL	82,000,000	120,092,742	

TOTAL PARCAs (SE)	101,114,567	140,397,524
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Remaining unsold

Enron Billingham (NO)

	Recipient	Capacity Signal Received	Actual Donated	From (donor)
07/11/2018	Saltholme	7,310,160	3,237,148	Billingham ICI (Terra Bill
			4,860,000	Enron Billingham
	TOTAL	7,310,160	8,097,148	
25/10/2019	Rawcliffe	2,201,700	250,000	Cowpen Bewley
			1,800,000	Enron Billingham DC
	TOTAL	2,201,700	2,050,000	

TOTAL PARCAS (NO)	9,511,860	10,147,148
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Remaining unsold

Thornton Curtis (Killinglome) (NE)

07/11/2018	Recipient	Capacity Signal Received	Actual Donated	From (donor)
	Drax	1,846,952	1,816,952	BPHP Saltend
			44,105	Rawcliffe
	N.B.	(64,953,048)	Incremental Obligated	
	TOTAL	1,846,952	1,861,057	

Remaining unsold

Option 3 Total		112,473,379	152,405,729	
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Exchange rate		Disconnected Prioritised Donated	From	Exchange rate
0.9999:1		19,060,000	Barking	1.1018:1
1.0549 : 1		7,780,000	Barking	1.3008:1
1.2388 : 1				DIFFERENCE
		26,840,000		2,616,107

*Exchange rates (notes)
From latest analysis Tilbury
PARCA 31/3/20*

From actual analysis

31,750,000 Barking

Exchange rate		Disconnected Prioritised Donated	From	Exchange rate
1.1086 : 1		8,099,657	Enron Billingham	1.1080:1
1.070 : 1				DIFFERENCE
		8,099,657		2,509

1.1074 : 1		2,050,000	Enron Billingham	1.1074:1
1.1074 : 1				DIFFERENCE
		2,050,000		0
		10,149,657		2,509

104,700,338 Enron Billingham

		Disconnected Prioritised		DIFFERENCE (kwh/d)
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		36,989,657		2,618,616
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Exchange rate		Disconnected Prioritised Donated	From	Exchange rate
0.9999:1		19,060,000	Barking	1.1018:1
				DIFFERENCE
		19,060,000		1,760,000
1.6577:1		5,440,000	Barking	3:1
				DIFFERENCE
		5,440,000		2,435,218
0.7927 : 1		1,070,148	Silk Willoughby	0.7927 : 1
1.3829 : 1		20,480,000	Peterborough Pow	1.3829 : 1
1.3573 : 1		7,826,972	Tatsfield	1.3573 : 1
1.4886 : 1		37,509,029	Farningham B	1.4886 : 1
1.4779 : 1		34,750,000	Farningham	1.4779 : 1
2.2855 : 1		34,090,000	Barking	3:1
				DIFFERENCE
		135,726,149		15,633,407

*From latest analysis Tilbury
PARCA 31/3/20*

*From Staythorpe analysis and
implication/best estimate
from Shorne exchange rate*

*From Staythorpe analysis and
implication/best estimate
from Shorne exchange rate*

		160,226,149		19,828,625
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0 Barking

Exchange rate		Disconnected Prioritised Donated	From	Exchange rate
1.1086 : 1		8,099,657	Enron Billingham	1.1080:1
1.070 : 1				DIFFERENCE
		8,099,657		2,509

1.1074 : 1		2,050,000	Enron Billingham	1.1074:1
1.1074 : 1				DIFFERENCE
		2,050,000		0

10,149,657

2,509

104,700,338 Enron Billingham

Exchange rate	Disconnected Prioritised Donated	From	Exchange rate
1.1026:1	91,000,000	Thornton Curtis (Killingholme)	3:1
1.0055:1	1,816,952	BPHP Saltend	1.1026:1
	44,105	Rawcliffe	1.0055:1
	(34,605,610)	Incremental Obligated	
	92,861,057		91,000,000

0 Thornton Curtis (Killingholme)

Diff kwh/d

	263,236,863		110,831,134
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Order of PARCAs application (latest to oldest)
Grain Power Station (new site, not existing PS)
Rawcliffe
Saltholme
Drax
Peterborough Eye
Tilbury Marshes

Option 1. Exchange Rate < 3:1 within 'zone' only
'Zone' to mean area of original analysis (in line with sensitivities used for 'challenging' exit scenarios).
Barking would have been used for the Tilbury Marshes and Grain North PARCAs instead of Tatsfield (SGN), Shorne (SGN), and Coryton (DC) (dictated by timings of requests coming in)
+2,600,000 kwh/d would have been donated compared to actual.(actual capacity 'loss' as a result of using worse exchange rate from disconnected site)
32,000,000 kwh/d remaining unsold at Barking, instead of 58,590,000 kwh/d.

Option 3. Regardless of Exchange Rate within 'zone' only

'Zone' to mean area for original analysis.

Barking would have been used for Tilbury Marshes, Peterborough Eye, and Staythorpe PARCAs instead of Tatsfield (SGN), Mappowder (SGN), and Shorne (SGN).

+20,000,000 kwh/d would have been donated using Barking compared to actual.(actual capacity 'loss' as a result of using worse exchange rate from disconnected site)

0 remaining unsold at Barking, instead of 58,590,000 kwh/d.

Thornton Curtis would have been used instead of BPHP Saltend (DC), and Rawcliffe (NGN), and 'Funded Incremental with 0 Revenue Driver' for Drax. (In original analysis for Drax PARCA, we ran out' of unsold capacity, but 'Capability' existed.)

+91,000,000 kwh/d would have been donated using Thornton Curtis compared to actual.

0 remaining unsold at Thornton Curtis.