



BSC OPERATIONS HEADLINE REPORT

1 In this report you will find commentary on BSC market operation, identification of key events and reporting of key data.

2 The [Trading Operation Report](#) publishes key market data graphically, giving a performance indicator for the Balancing and Settlement arrangements.

3 Trading Operations Report [Data](#). The graphs and backing data are available in Excel format on the ELEXON website.

SYSTEM PRICES

Monthly average System Sell Prices (SSP) increased and System Buy Prices (SBP) decreased in November¹ compared to October. Note that data from 5 November 2015 has the same value for both SSP and SBP.

Average peak SBP was 15.7% greater than the monthly average, and average peak SSP exceeded the monthly average by 13.7%.

The SBP exceeded £100/MWh 81 times, with a maximum of £415.42MWh for Settlement Period 31 on 4 November. There were five negative SSP's within this reporting period, occurring on 12 and 24 November, with a low of -£60.63MWh on Settlement Period 48 on 24 November.

Period	Average (£/MWh)		Average (£/MWh) Peak 07:00-19:00	
	SBP	SSP	SBP	SSP
Nov 15	44.44	41.24	51.43	46.87
Oct 15	47.43	35.99	54.51	39.32
Sep 15	46.65	37.34	48.24	37.91
Autumn 15	47.16	37.69	49.36	38.71
Summer 15	47.60	36.76	50.45	38.15
Spring 15	45.34	35.51	46.81	36.52
Winter 14/15	48.36	37.36	54.72	41.39
Autumn 14	52.39	39.86	59.48	43.31
Nov 14	53.26	40.57	59.70	43.67

ENERGY BALANCING VOLUMES

The total volume of balancing actions was 1,096 GWh in October 2015², a 75.56 GWh increase from the total volume of balancing actions in September.

Total accepted **Offers** by volume increased by 15.3% to 484.9GWh in October. Gas delivered 69.3% of the accepted Offers by volume, while Coal delivered 22.8% of accepted Offers. Accepted Offer volumes from Pumped Storage increase from last month by 13.5 GWh to account for 32.62 GWh (6.7% of total accepted offer volume delivered).

Total accepted **Bids** by volume increased from 599.71 GW in September to 611.10 GW in October; a 1.90% decrease. There were lower volumes of accepted Bids from gas (down 30% from September volumes); but higher ones of wind with an increase of 49.12 GWh.

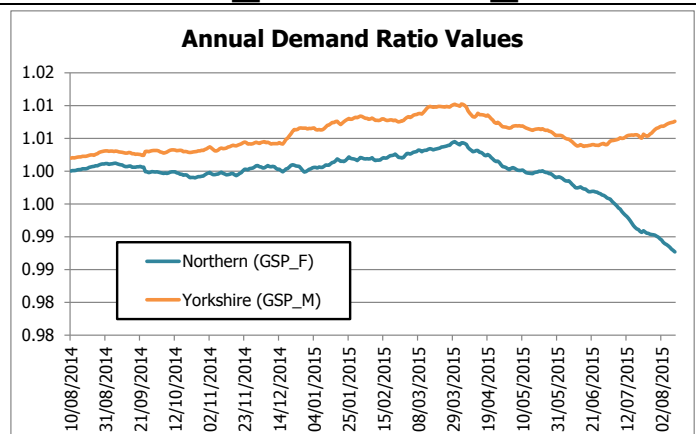
Fuel Type	Bid Volume (MWh)		Offer Volume (MWh)	
	Oct-15	Sep-15	Oct-15	Sep-15
Coal	-268,597	-204,716	110,360	83,417
Gas	-262,706	-373,866	336,261	315,911
Hydro	-4,919	-4,440	5,114	1,792
OCGT	0	0	250	471
Oil	0	0	0	0
Pumped storage	-18,164	-8,499	32,623	19,088
Wind	-54,164	-5,037	256	45
Biomass	-2,553	-3,160	33	0
Total	-611,103	-599,717	484,898	420,724

REGISTRATION ERROR IDENTIFIED IN GSP_F AND GSP_M

Ferrybridge B GSP is a 'complex' GSP as it sits on the boundary between the Northeast and Yorkshire GSP groups. An aggregation rule is used to allocated volumes between the two different GSPs. The Licenced Distribution Operator (LDSO) identified an issue in the allocation methodology for these volumes dating back to June 2015.

This error is reflected in the Annual Demand Ratios (ADRs) for the Northeast and Yorkshire GSP groups from June 2015.

Trading Dispute DA759 has been raised to correct the issue.



¹ System prices are based on the previous month's Interim Information (II) run data.

² Balancing volumes appear as per the latest month with Initial Settlement (SF) run data available.

TRADING CHARGES

Gross imbalance cash flows have increased from £47.6m in September 2015 to £62.6m in October 2015³. Credits for being long and debits for being short both increased.

The higher cash flows in October compared to September were driven by higher imbalance volumes (Long Imbalance volumes increased 131.34GWh and Short Imbalance Volumes increased by 178.22GWh), as well as higher monthly average SBPs and SSPs.

The Offer cash flow increased from £28.5m in September to £33.31m in October due to higher volumes of accepted Offers this month (see page 1).

Net Bid cash flow increased (in absolute terms) from -£18.2m in September to -£16.07m. Cash flows associated with negative Bids increased from £0.55m in September to £4.18m.

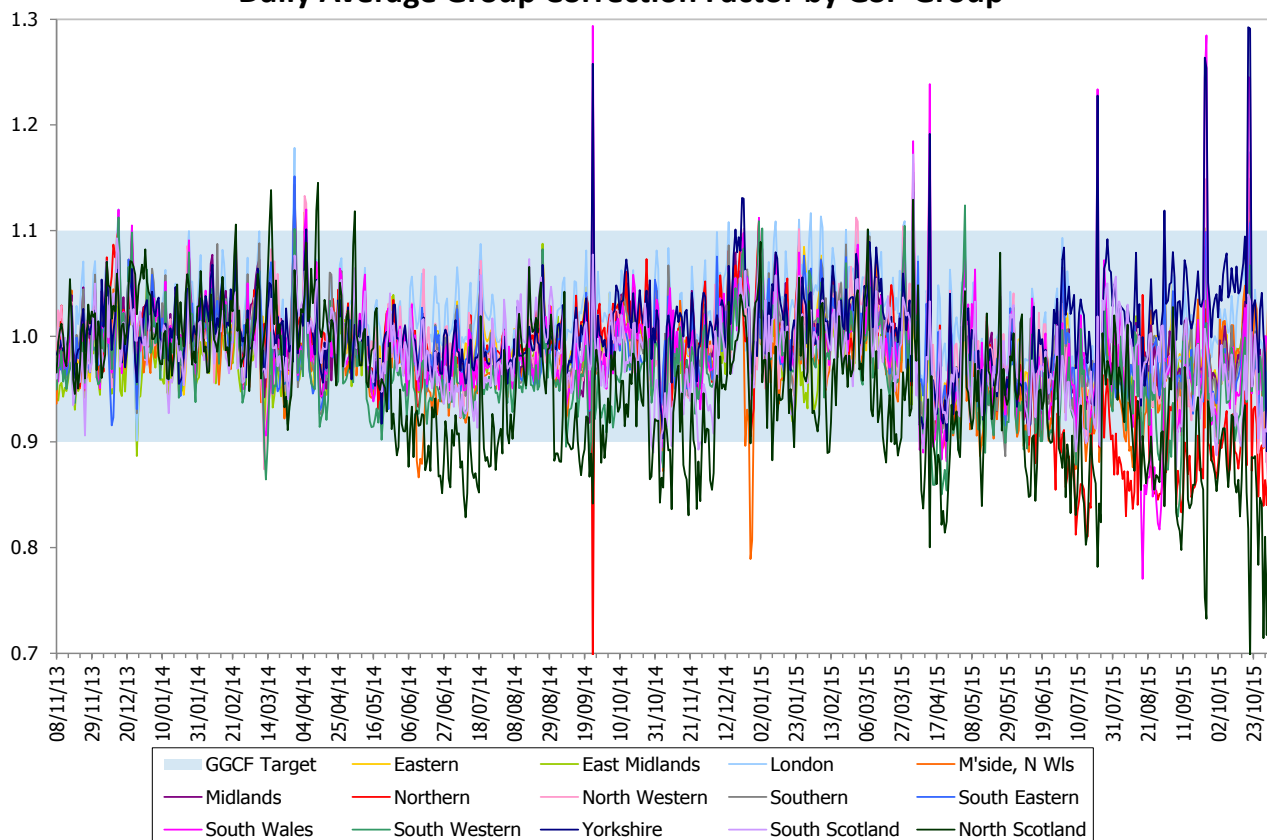
Total Cash Flow (£m)	Oct-15	Sep-15	Aug-15	Jul-15
Long Imbalance Charge (Credit)	-27.13	-22.89	-22.74	-23.26
Short Imbalance Charge (Debit)	35.50	24.75	32.02	29.21
RCRC Credit	15.39	9.71	14.77	12.49
RCRC Debit	-7.03	-7.85	-5.49	-6.54
Offer Cash Flow	33.31	28.50	48.32	37.93
Bid Cash Flow (Positive Bids)	-16.07	-18.75	-19.20	-17.10
Bid Cash Flow (Negative Bids)	4.18	0.55	5.61	4.87

HH DATA AGGREGATOR ERRORS DRIVE GGCF ERRORS

On Thursday 12 November 2015, ELEXON noticed large volume movements across all Settlement Runs. The subsequent investigation highlighted that a single Half Hourly (HH) Data Aggregator (DA) had submitted erroneous D0298 files with significantly understated consumption values. HH consumption was understated by approximately 340 GWh for seven Settlement Days (across multiple Settlement Run Types) and this erroneous volume was spread around to other Non-Half Hourly (NHH) Suppliers through the effect of Grid Supply Point (GSP) Group Correction Factor.

An Extra Settlement Determination (ESD) was performed to minimise the financial impacts on Parties and the erroneous Settlement data will be corrected in the next Settlement Run for the relevant dates.

Daily Average Group Correction Factor by GSP Group



³ Trading charges appear as per the latest month with Initial Settlement (SF) run data available.

SYSTEM PRICES ON 4 NOVEMBER 2015 — SF RUN DATA

Now that SF data is available, we take a closer look at the impact of the NISM on 4 November 2015. In particular we highlight the impact of 'NIV tagging'.

On 4 November, a **Notice of Insufficient Margin (NISM)** was issued at 13:31 for Settlement Periods (SPs) 34 to 38. It was subsequently cancelled at 17:29 (end of SP36). The system was short for SPs 34 and 35, then long until SP 41.

This Settlement Day occurred **before Modifications P305 and P323** were implemented. This had two key implications for prices: (i) dual cash-out was still in place, with a Main Price based on the SO's balancing actions, and a Reverse Price based on the Market Price calculation; and (ii) although **DSBR was dispatched** for the first time during periods 35 and 36, the volumes or the price of these actions were not reflected in the cash-out price.

Additional Balancing Service Adjustment Action (BSAAs) data were submitted by the SO after the indicative BMRS calculations, which had implications for prices in the SF run. These volumes were the SO-SO trades taken on the East-West Interconnector, priced at £290/MWh between SPs 32 and 40, as well as other non-BM balancing actions. In the SF run they caused the overall Net Imbalance Volume (NIV) to materially change in 10 Settlement Periods, and caused the NIV to 'flip' from long to short in SPs 34 and 35. This had implications for prices in these SPs:

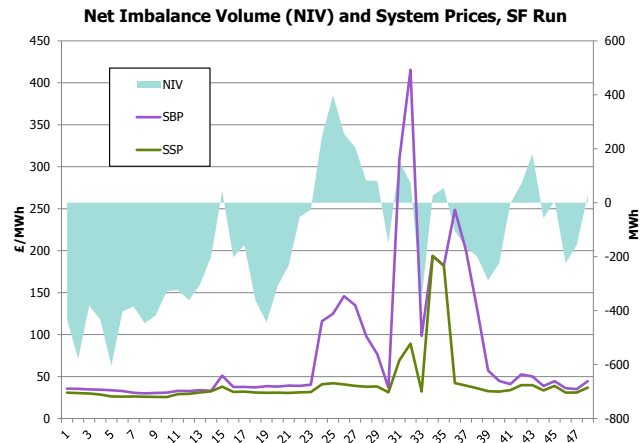
- **System Sell Prices (SSPs) increased** in both SPs (by £157.89 and £137.68 respectively). This is because the system had been long in the BM Run, and SSP was the Main Price, based on the price of National Grid's sell actions. When the system flipped, SSP became the Reverse Price, and the Market Price was used to set the price. The Market Price was particularly high in this Settlement Periods (£193.72 and £259.20 respectively), reflecting the prices of intraday trades.
- **System Buy Price (SBP) decreased** in SP 35¹. This was despite a number of high priced actions accepted to balance the system in this period (eg actions priced at £2,500/MWh). In the BM run, the System was long so SBP was the Reverse Price, and therefore set by the Market Price. When the system flipped, the price was derived from National Grid's buy actions.

The fact that the SBP decreased when the System became shorter was driven by two key factors: (i) the Reverse Price being set by a high Market Price, reflecting the prices of trades at the intra-day stage, and (ii) the process of 'NIV tagging' in the price calculation.

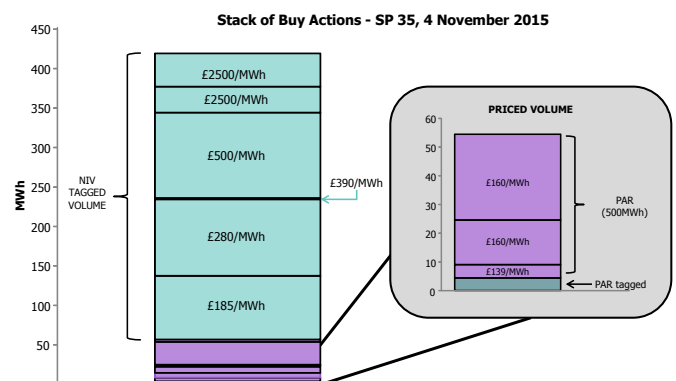
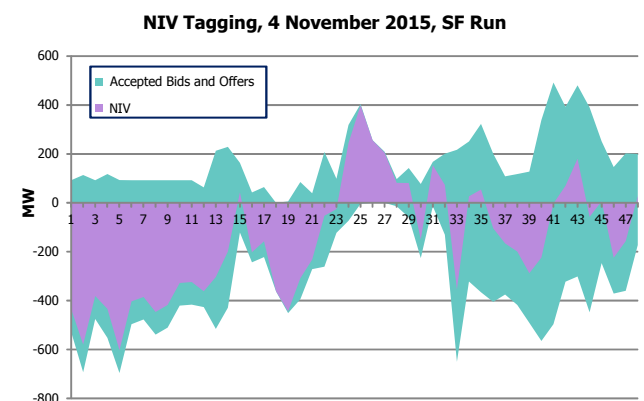
Post-P305 the Market Price will play a smaller role in price-setting, but **NIV tagging** will continue to play an important part in the price calculation. NIV tagging is the process which subtracts the smaller stack of balancing actions from the larger one to determine the overall imbalance on the system. **The most expensive actions are NIV tagged first.** This means NIV tagging can have a dampening effect on prices when there are actions in both directions.

This can be seen on 4 November by looking at the total volume of accepted Bids and Offers (in green in the graph in the graph above). The NIV (shown in purple) represents the volume of actions that fed through to the next price calculation step. The more actions taken in the opposite direction to the overall imbalance, the smaller the NIV, and therefore the greater volume of actions excluded from the price calculation (starting with the most expensive).

The impact of NIV tagging can be seen in greater detail by looking at SP35 in isolation. Although Offers priced at £2,500/MWh were taken to balance the system, the outturn System Price was £182.18. This is because 268.55MW of buy actions were NIV tagged (in green). The volume of actions left after NIV tagging (in purple) includes lower priced Offers. It is this volume that PAR tagging is applied to, taking the volume weighted average of the most expensive 500MWh to set the price; resulting in a System Price of £182.18. From 05 November prices will be set using the most expensive 50MWh.



	System Sell Price (£/MWh)		System Buy Price (£MWh/h)	
	BMRS calc (Main Price)	SF Run (Reverse Price)	BMRS calc (Reverse Price)	SF Run (Main Price)
SP 34	35.82	193.73	193.73	193.73
SP 35	44.50	182.18	259.20	182.18



¹ SBP did not change in SP 34 because of the impact of the default rule which set the SBP to equal the SSP if the System is short and the SSP is higher than the SBP (eg due to high Market Price).