

SUMMARY AND KEY POINTS

POST IMPLEMENTATION REVIEW OF P305

BSC Modification P305 was implemented on 5 November 2015, and introduced a number of changes to the calculation of the cash-out price. It was raised to progress the conclusions to Ofgem's Electricity Balancing Significant Code Review (EBSCR), which looked at addressing the Authority's concerns with the electricity balancing arrangements.

This 12 month review of P305 is provided by ELEXON to contribute to all interested parties' understanding of the BSC Modification. The review presents factual information rather than an assessment of the success of the Modification.

Questions and comments are welcome via market.analysis@elexon.co.uk

Market context

Metered output data from generating BMUs (non BMU-registered embedded generation is therefore not captured) has been used to determine the fuel mix between December 2014 and November 2016. Between December 2015 and November 2016 Gas made up 43% of the fuel mix. For the same period in 2014/15 it was 29%. The increase in Gas generation has coincided with a decrease in Coal generation from 25% of the Fuel Mix in 2014/15 to 11% in 2015/16.

Following the implementation of P305, average wholesale prices fell initially. However, that trend changed in June 2016 when the prices started to increase and continued to do so until peaking in October and November. The market conditions have impacted the pricing of the underlying balancing actions (such as Bids and Offers in the Balancing Mechanism) used to set the System Price.

The average price of accepted Offers from Gas, Hydro and Coal BMUs has increased in 2016. Coal has had the greatest increase, between April 2016 and November 2016, the average accepted Offer Price rose by £126/MWh. There has been little change since January 2014 in the average price of accepted Bids. Wind generators typically submit negatively priced bids to offset the cost of the Renewable Obligation Certificates that they will not receive if they are not generating.

Balancing Behaviour

The system has been long more frequently in 2015/16. The net imbalance on the system was long in 69% of Settlement Periods from December 2015 to November 2016, compared to 57% in the same period for the preceding year. In 2013/14 65% of Settlement Periods were long and in 2012/13 62%.

Between December 2015 and November 2016, Parties long imbalances were 33% greater and short imbalances 10% greater compared to the same period from the previous year.

Since the introduction of a single cash out price as part of P305, any opposing Energy Account imbalances have the same price, so can be offset. This has removed the incentive for vertically integrated and non-physical trading Parties to balance their Consumption and Production Accounts separately, while continuing to manage their net Energy Imbalance position.

Pricing Trends

Since the introduction of BSC Modification P305, the monthly average System Price had been between £35/MWh and £40/MWh. However, the monthly average System Price increased steeply after September 2016, reaching £66/MWh in November due to sharp rises in short System Prices.

Between December 2015 and November 2016 the average System Price was lower than in the four previous years. The range of prices has been greater in 2015/16 at £1,629/MWh, compared to £289/MWh in 2014/15.

POST IMPLEMENTATION REVIEW OF P305

The number of prices greater than £100/MWh has increased in 2015/16. There were 751 Settlement Periods with prices over £100/MWh in 2015/16 compared to 48 in 2014/15. 2015/16 has also seen six System Prices over £1,000/MWh in November 2016. There were no prices over £1,000/MWh in the previous four years. These high prices have been set by high priced accepted Offers during periods of scarcity and Reserve Scarcity Price (RSP) repriced Short Term Operating Reserve (STOR) actions.

There has also been an increase in negative prices, with 177 System Prices less than £0/MWh in 2015/16 compared to 10 in 2014/15. The lowest price in the assessed period was -£100/MWh, this occurred on 19 May 2016 Settlement Period 22. The price was set by -£100/MWh priced Bids from one CCGT Balancing Mechanism Unit.

Comparison to P217 Calculation

System Prices between December 2015 and November 2016 were recalculated using the pre-P305, P217 pricing scenario. The majority (83%) of System Prices were lower in the P305 scenario when the System was long. When the system was short 56% of live System Prices were higher than P217 Prices. The change in Price Average Reference (PAR) value to 50MWh is largely responsible for this as prices have become more marginal.

Comparison to P305-November 2018 Calculation

The System Prices have also been recalculated with pricing changes that will come into effect in November 2018. Prices are always lower when the system is long under the November 2018 scenario and higher when the system is short. The average difference in prices when the system was long was £1.38/MWh lower and when the system was short was £3.73/MWh higher.

Parties Trading Charges

Net Energy Imbalance charges have reduced since the implementation of P305, despite increases in Energy Imbalance Volumes. There has been a higher percentage of long Settlement Periods, and the average System Price has decreased. These factors have contributed to the decrease in net Energy Imbalance charges.

Energy Imbalance and Residual Cashflow Reallocation Cashflow (RCRC) were recalculated with pre-P305 (P217) and post November 2018 System Prices. The net charges incurred were found to be greater, on average, for all Party types under the pre-P305 pricing scenario. Charges calculated under the November 2018 scenario were found to be greater, on average, for Suppliers and Non-Physical Traders, but lower for Vertically Integrated, Independent Generators and Renewable Generators.

Parameter Analysis

The review looked at the implications of changing the parameters that feed into the System Price calculation.

Price Average Reference (PAR)

BSC Modification P305 has reduced the Price Average Reference (PAR) from 500MWh to 50MWh. In November 2018 PAR will reduce further to 1MWh. For this review Prices between December 2015 and November 2016 were recalculated with the PAR set to 500MWh and 1MWh. In the PAR 1 scenario an average of 11% of the accepted actions taken remain in the price calculation after PAR tagging. There are on average 19% less actions in the PAR50 scenario compared to the PAR500 and 6% less actions in the PAR1 scenario than the PAR50 scenario.

Replacement Price Average Reference (RPAR)

The other parameter that reduced under BSC Modification P305 was the Replacement Price Average Reference (RPAR) from 100MWh to 1MWh. When the system is short, the Replacement Price tends to re-price flagged actions downwards; actions were priced by an average of £67.43/MWh under RPAR100, and by £76.26/MWh under RPAR1. When the system was long under RPAR100, the initial price of actions were re-priced upwards to an average of £25.84/MWh; under RPAR1 actions were re-priced upwards to an average of £23.59/MWh.

POST IMPLEMENTATION REVIEW OF P305

Reserve Scarcity Price (RSP)

BSC Modification P305 introduced the Reserve Scarcity Price (RSP) which uplifts the prices of STOR balancing capacity when it is higher than the capacity's original Utilisation Price. Since its introduction 130 actions were repriced with the RSP, with an average increase in the imbalance price due to RSP repricing of £221.51/MWh.

The De-Rated Margin (DRM) and Loss of Load Probability (LoLP) were also introduced, both to set the RSP and act as an informational tool. The lowest DRM since its introduction was 387MW, seen on 31 October 2016 during Settlement Period 36, which corresponded to a LoLP of 29%. Where margins were less than 2,000MW at the 8 Hour Submission, the 1 Hour Submission was higher 91% of the time, suggesting that Parties make more generation available when the DRM signals a tight system.

Short Term Operating Reserve (STOR)

Short Term Operating Reserve (STOR) actions taken outside of the Balancing Mechanism are now included in the System Price calculation as a result of this Modification. Including non-BM STOR introduced a total of 34GWh to the System Price Calculation between December 2015 and November 2016. These volumes changed the System direction in 195 Settlement Periods; the system would have been long under P217 but was short under P305.

Non-Balancing Mechanism STOR availability costs were previously reflected in the Buy Price Price Adjuster (BPA). These are now reflected in Sell actions, and this has led to an average reduction in the BPA of £2.15/MWh.