Main imbalance price based on ex-post unconstrained schedule

Introduction

Ofgem's review of the electricity cash out arrangements was launched in February 2007, and one of their key target areas are the rules for removing system actions from electricity imbalance prices (the "tagging" mechanism). Currently system actions are not always removed from the "main" imbalance price. This has the effect of increasing System Buy Price (SBP) when the market is short and decreasing System Sell Price (SSP) when the market is long.

The following describes the proposed method for removing system actions from imbalance prices.

Proposed calculation of the main imbalance price

Under the current rules, the main imbalance price (subject to the tagging rules) is based on actions that the System Operator (SO) actually utilised. The proposal is to use the least expensive Bids or Offers that were available to the SO to resolve the Net Imbalance Volume (NIV)[1]. This would be known as the ex-post unconstrained schedule (EPUS).

When the market is short (NIV>0):

1. Deemed Available Offer Volume ("DAOV") for a BM unit would be calculated as the difference between time weighted FPN and time weighted MEL. Dynamic parameters would not be considered when deriving the DAOV.
2. DAOV (by Bid/Offer pair) would then be stacked in price order starting with the lowest priced DAOV first.
3. Energy BSAD would be added to the stack in price order to form the EPUS.
4. The NIV would be resolved using the lowest priced DAOV and Energy BSAD from the EPUS.
5. If there is sufficient DAOV to resolve the NIV that is priced lower than the Energy BSAD, then the Energy BSAD would not be used to resolve the NIV.
6. If the NIV is greater than 500 MWh, then the lowest priced volume above this threshold will be removed from the price calculation via PAR Tagging, and SBP will be calculated as a volume weighted average of the remaining 500 MWh of DAOV and Energy BSAD (if applicable) in the EPUS.
7. If the NIV is less than or equal to 500 MWh then SBP will be calculated as a volume weighted average of all the DAOV and Energy BSAD (if applicable) in the EPUS.
8. Any option fees would then be added to the SBP via the Buy Price Adjuster (BPA).

When the market is long (NIV<0):

1. Deemed Available Bid Volume ("DABV") for a BM unit would be calculated as the difference between time weighted FPN and time weighted MIL[2]. Dynamic parameters (apart from SEL) would not be considered when deriving the DABV.
2. DABV (by Bid/Offer pair) would then be stacked in price order starting with the highest priced DABV first.
3. Energy BSAD would be added to the stack in price order to form the EPUS.
4. The NIV would be resolved using the highest priced DABV and Energy BSAD.
5. If there is sufficient DABV to resolve the NIV that is priced higher than the Energy BSAD, then the Energy BSAD would not be used to resolve the NIV.
6. If the NIV is greater than 500 MWh, then the highest priced volume above this threshold will be removed from the price calculation via PAR Tagging, and SSP will

[1] As defined in Section T 4.4.4A.
[2] The rationale for using MIL in a long market is that generators will offer feasible DABV to SEL, and then much lower prices below this if they don't want the unit to be de-synchronised (i.e. taken off). If SEL is used as the absolute parameter in a long market then this may exclude higher priced volume in the EPUS where it would have been cheaper to de-synchronise a unit.

be calculated as a volume weighted average of the remaining 500 MWh of DABV and Energy BSAD (if applicable) in the EPUS.

7. If the NIV is less than or equal to 500 MWh then the main price will be calculated as a volume weighted average of all the DABV and Energy BSAD (if applicable) in the EPUS.
8. Any option fees would then be added to the SSP via the Sell Price Adjuster (SPA).

The proposal will not affect:

- The calculation of the reverse market price;
- The current level of PAR (500 MWh);
- The existing calculation of NIV to derive the market imbalance.

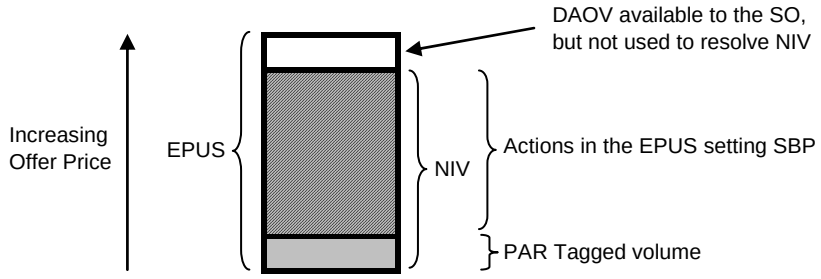
Other considerations for the modification group

- **Removal of de-minimis[3]/CADL/Arbitrage/NIV Tagging from the BSC** – the EPUS would not require these processes so the group should consider if these should be removed from the BSC text completely.
- **Use of operational parameters like MEL and MIL in the BSC** – Ofgem noted some concerns in the P167 decision letter regarding use of operational parameters as trading parameters in the BSC so it would be worth considering if these concerns still exist.
- **Use of metered volumes to enforce FPN** – the group may want to consider using metered volumes later on in the settlements process to ensure that market participants are not gaming FPN (i.e. time weighted FPN would only be used to create indicative cash out prices and metered volumes would be used to calculate final prices).
- **Defaulting rules** – changes to the BSC text may be required to ensure that these relate to the new pricing calculation.

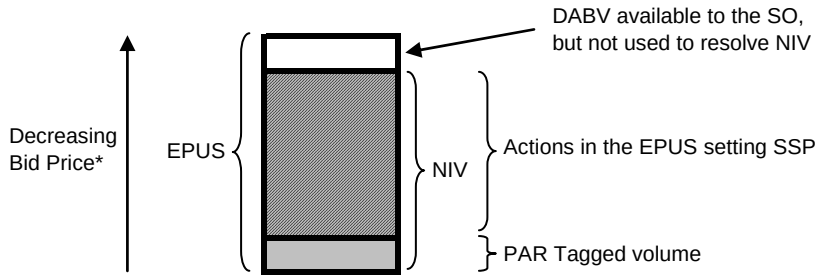
[3] Removal of de-minimis tagging will have a small effect on the NIV in some settlement periods as these volumes are currently excluded from this calculation.

Diagrams showing the proposed calculation of the main imbalance price under both short and long market conditions

Short market (NIV>0):



Long market (NIV<0):



*Less positive or more negative

Diagram showing the calculation of Deemed Available Bid – Offer Volume for a generation BM Unit