National Grid ESO
Faraday House, Gallows Hill
Warwick CV34 6DA

John Twomey
Senior Manager Market Development
National Grid Electricity System Operator
www.nationalgrideso.com

29 July 2021

Update on STOR Day Ahead Auctions

Dear industry colleagues,

As you know, in line with the requirements of Article 6(9) of Regulation (EU) 2019/943 (Clean Energy Package), NGESO implemented the new STOR day ahead procurement auction on 1 April 2021. This allowed registered providers with assets prequalified for the STOR service to bid these assets into a daily auction via our Salesforce auction platform.

In accordance with Article 18 of COMMISSION REGULATION (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (EBGL), NGESO consulted the industry on the proposed introduction of the STOR day ahead procurement and changes to the STOR service terms which included the Auction Rules and Assessment Principals, which set out the principles for the auction assessment.

The auction assessment is based on the principle of allowing curtailable bids and no overholding against the daily requirement, with the auction algorithm allowing paradoxically rejected bids (units that are below the clearing price but that are rejected), mitigated with the addition of the curtailable bidding where the marginal unit could be curtailed to fit into the remaining requirement.

Following go live we have been monitoring the results of each auction and listening to feedback from across the industry, and whilst this is a liquid, competitive, daily market (approx. 220 individual STOR units with over 6.5GW of capacity onboarded) feedback from some providers has suggested there are both technical and commercial blockers that prevent them from making a curtailable offering. As a consequence, we have seen a low number of curtailable bids, which consequently have led to a higher number of auctions seeing paradoxically rejected bids than was originally expected.

With this new information, it is prudent that we make some changes to the auction algorithm. The changes we intend to make are set out in more detail below but will incorporate additional assessment steps to compare the curtailable result against overholding or underholding to ensure we always select the lowest total cost.

These changes will be fully automated and will have no impact on the existing daily auction timings or publishing of results.

Outline proposed changes to the STOR auction algorithm

We intend to introduce additional assessment steps whereby we will compare the curtailable result against overholding or underholding to ensure we always select the lowest total cost. This would use the existing (curtailable) approach to determine a result, and then compare with a result whereby the unit originally rejected due to overholding was accepted and whichever result was least cost would be the final result of the auction.

Based on market observations to date and assuming a continued trend of low take up of curtailed bids in the market, a change of the algorithm would result in savings as the algorithm will compare whether it is cheaper to overhold or underhold and then select the lowest total cost.

These individual assessment steps are sets out as follows;

1. Curtailable cost - use the current algorithm to work out the stack and clearing price

$$Total\ curtailable\ cost = total\ MW\ (curtailable) * clearing\ price\ (curtailable) * hrs$$

2. Overholding cost - using the same stack order, instead of rejecting the first unit that crosses the max MW threshold, accept this unit and calculate the new total MW and new clearing price. The economic impact of overbuying is included by the larger number of MWs procured.

$$Total\ Overholding\ cost = total\ MW\ (overholding) * clearing\ price\ (overholding) * hr$$

3. Underholding cost - using the same stack order, reject the first unit that crosses the max MW threshold, and then calculate the new total MW and new clearing price

$$Total\ underholding\ cost = cost\ of\ underholding + missed\ opportunity\ cost$$

$$cost\ of\ underholding = total\ MW\ (underholding) * clearing\ price\ (underholding) * hrs$$

$$Missed\ opportunity\ cost = Max\ MW\ (from\ buy\ order) - total\ MW\ (underholding) * Price\ (from\ buy\ order\ that\ corresponds\ with\ Max\ MW) * hrs$$

We would then compare the three costs and select the lowest total cost.

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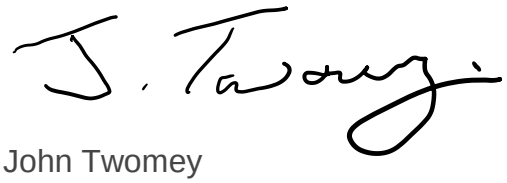
This decision does not impact or influence our algorithm design for response products or our enduring approach to auctions. We believe for STOR this is the right decision for consumers based on observations of the market and feedback from participants.

We will be holding an industry webinar on 11 August 2021 to walk through the proposed changes in more detail and intend to run the formal Article 18 consultation with industry from around 12 August, and then look to implement, subject to final approval and lead-time for the required system changes, within 2-3 months.

We would welcome any initial feedback on this proposed change to the auction algorithm, please direct these to Commercial.Operation@nationalgrideso.com or to your account manager.

Thank you for your continued support.

Yours sincerely,



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