Closer to real-time procurement

Initial findings of Auction Trial Phase 2

nationalgridESO

Context

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3. Key Findings from Auction Trial Phase 2
4. Plan for the Next Step

Project Brief

Two year NIA-funded trial to procure a proportion of frequency response via weekly pay-as-clear auctions.

Core ESO Forward Plan deliverable (Role 2) to remove barriers to entry, promote competition and deliver value for end consumers.

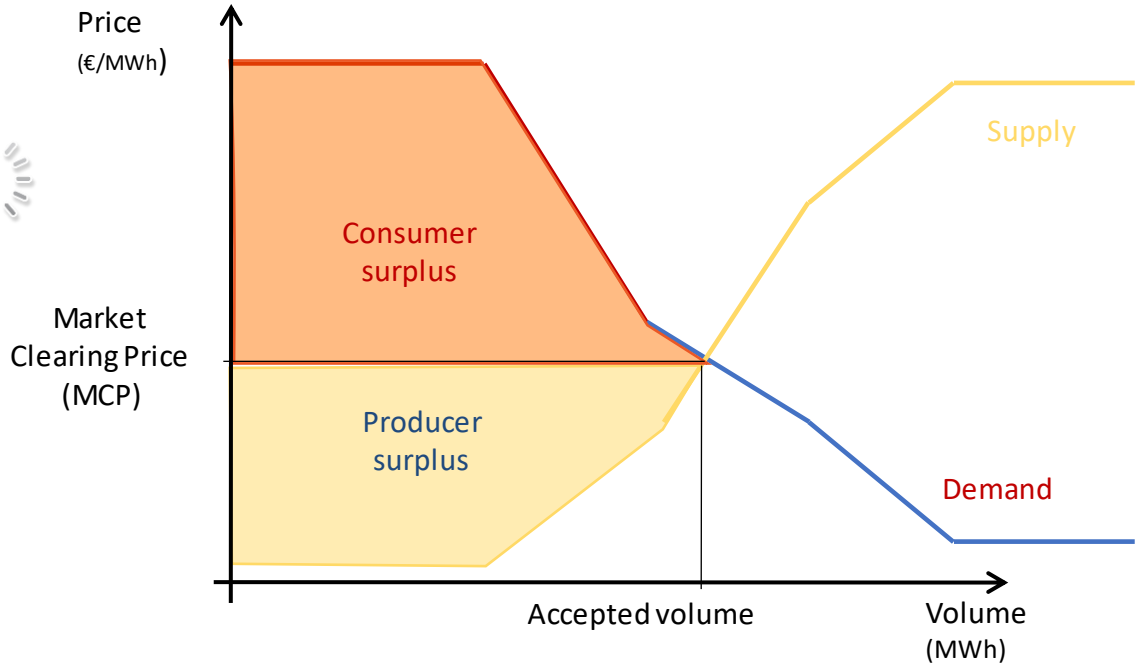
Supports transition towards day-ahead auctions as part of the RIIO2 ambition.

Algorithm

Sell orders are sorted by price from lowest to highest.

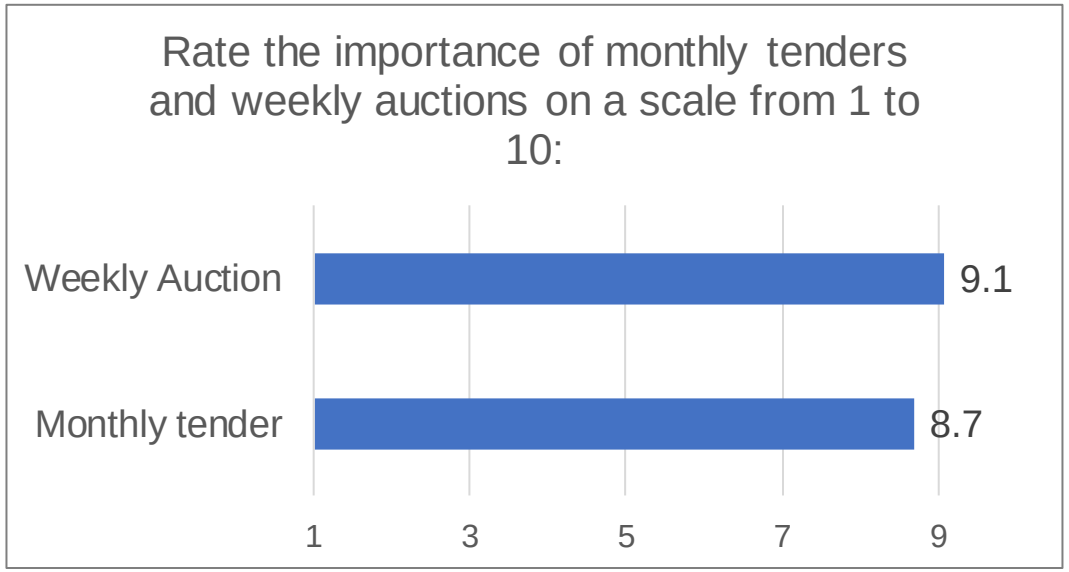
The algorithm aims to find a solution which maximizes the overall market welfare* with all constraints are satisfied via the “branch-and-bound” matching process.

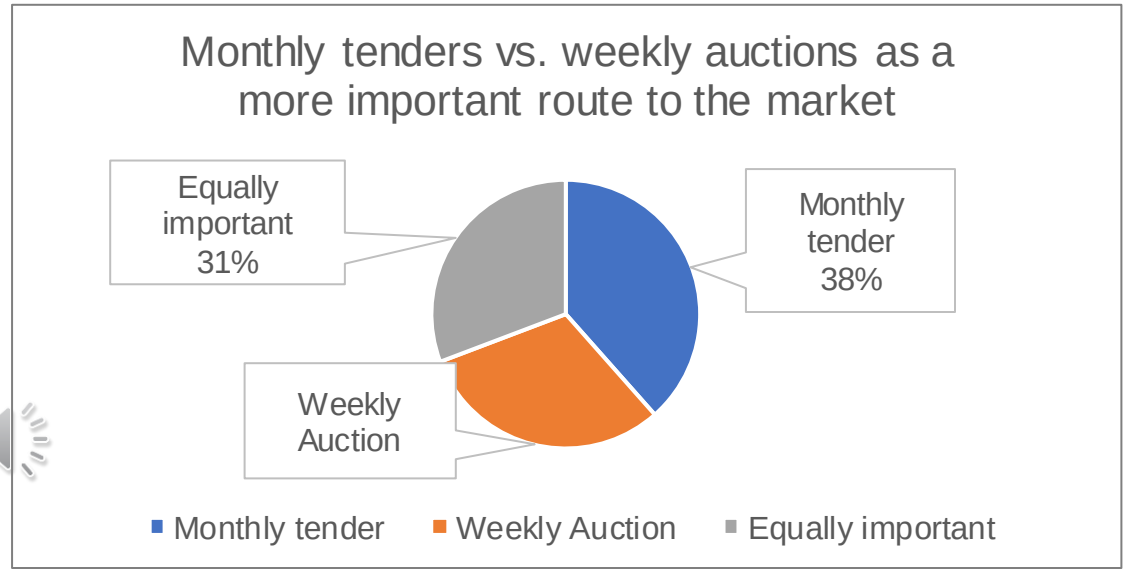
The last step is to minimize market price



*Market Welfare= Consumer (ESO) Surplus + All Suppliers Surplus (across 42 EFA blocks)

Barrier to entry





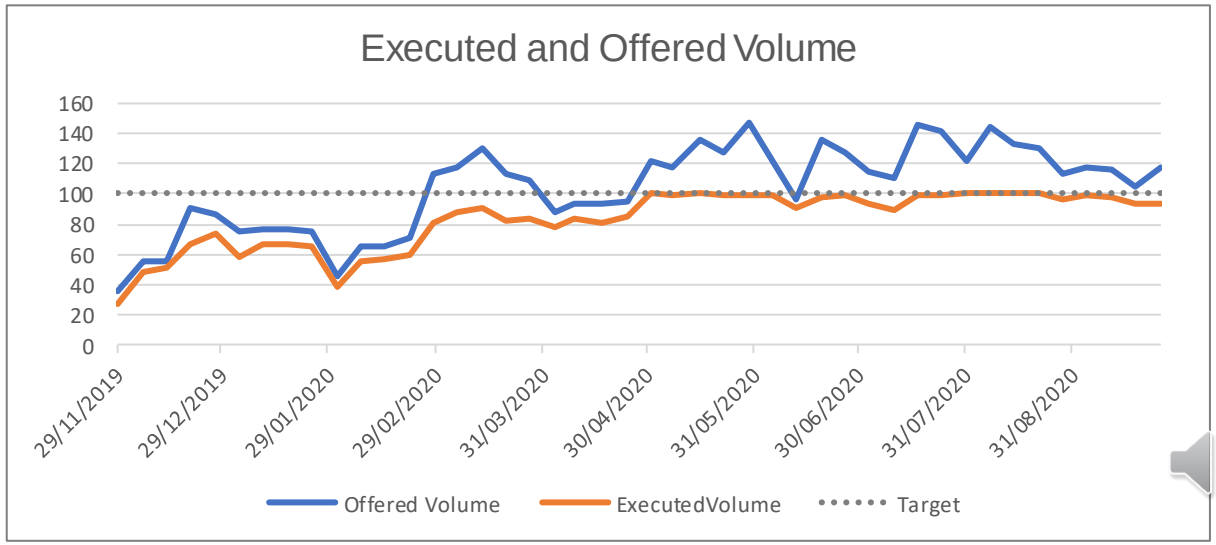
Extremely high scores were received from participants who cannot or have barriers to join the monthly tenders, we did lower the barrier for them.

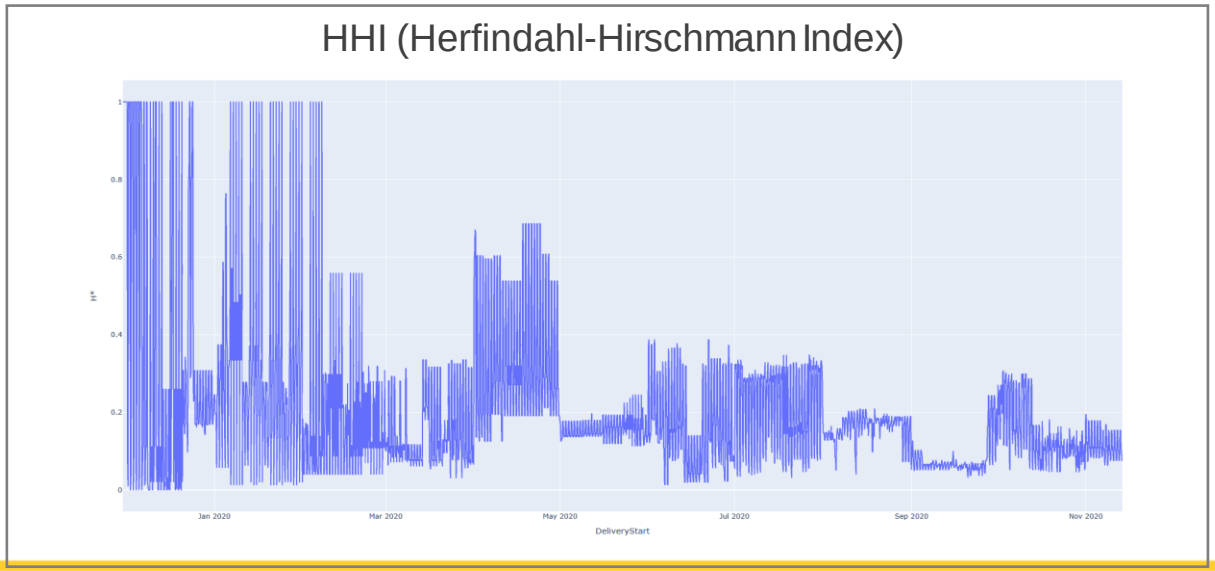
Positive feedback received from DSR participants :

"Weekly auctions allow for the dynamic nature of some DSR sites, where operational patterns cannot be planned a month in advance."

"The shorter timescales make it easier to manage participants in an aggregated unit. Getting people to commit to a schedule for a week is easier than for a month."

Market liquidity



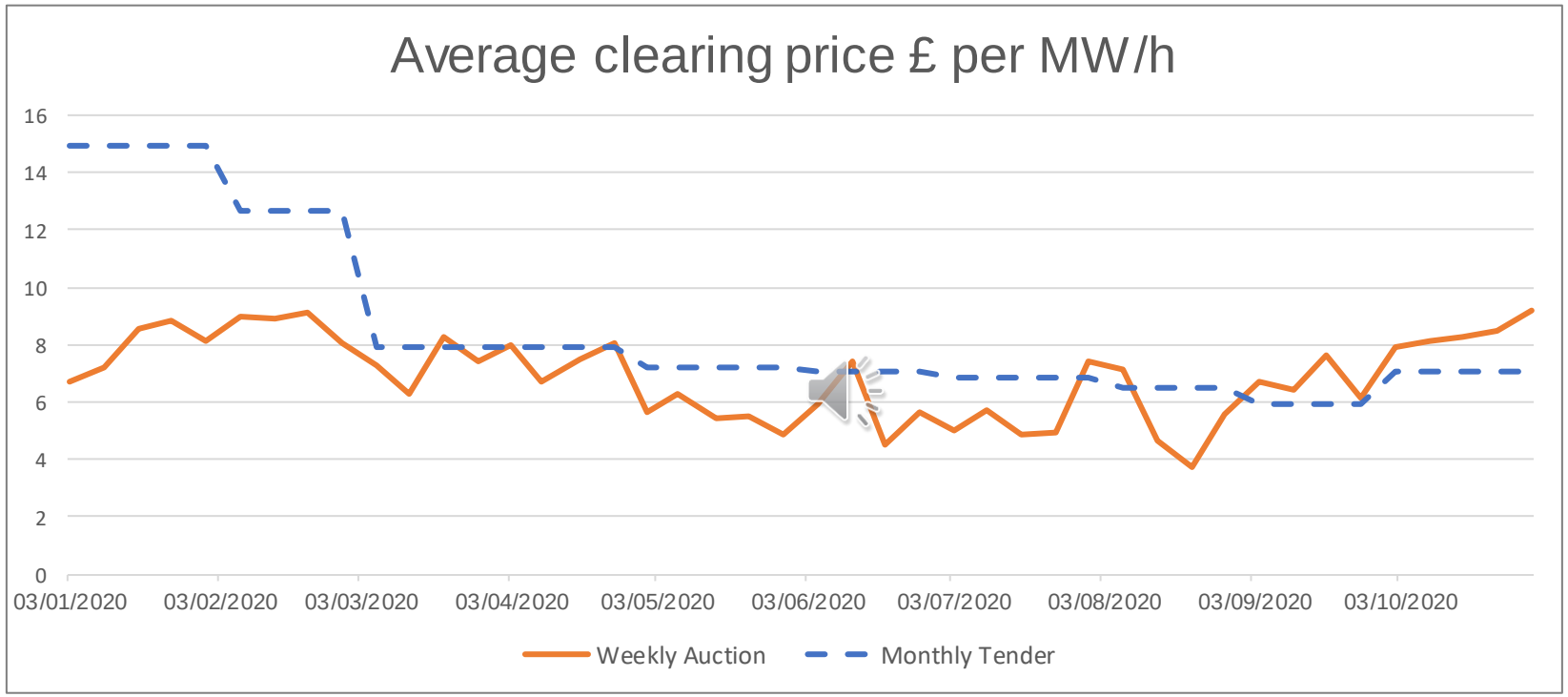


Till 30/10/2020, 49 auctions have been held with 94 units participating from 19 providers. Technology type includes battery and DSR.

A clear upward trend is shown in both volume we were offered and volume being executed.

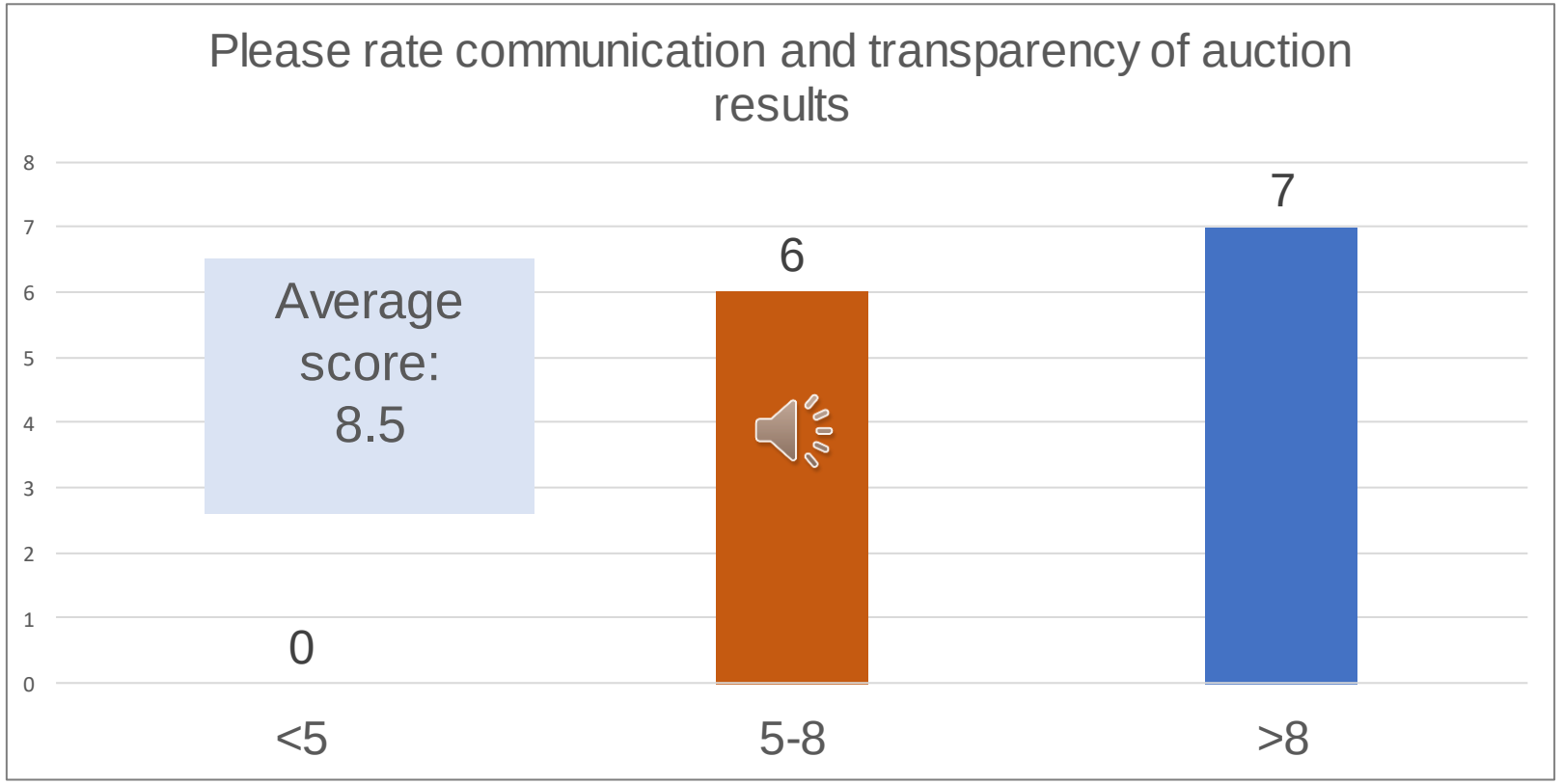
HHI index shows market shares are evenly split among suppliers

Procurement costs



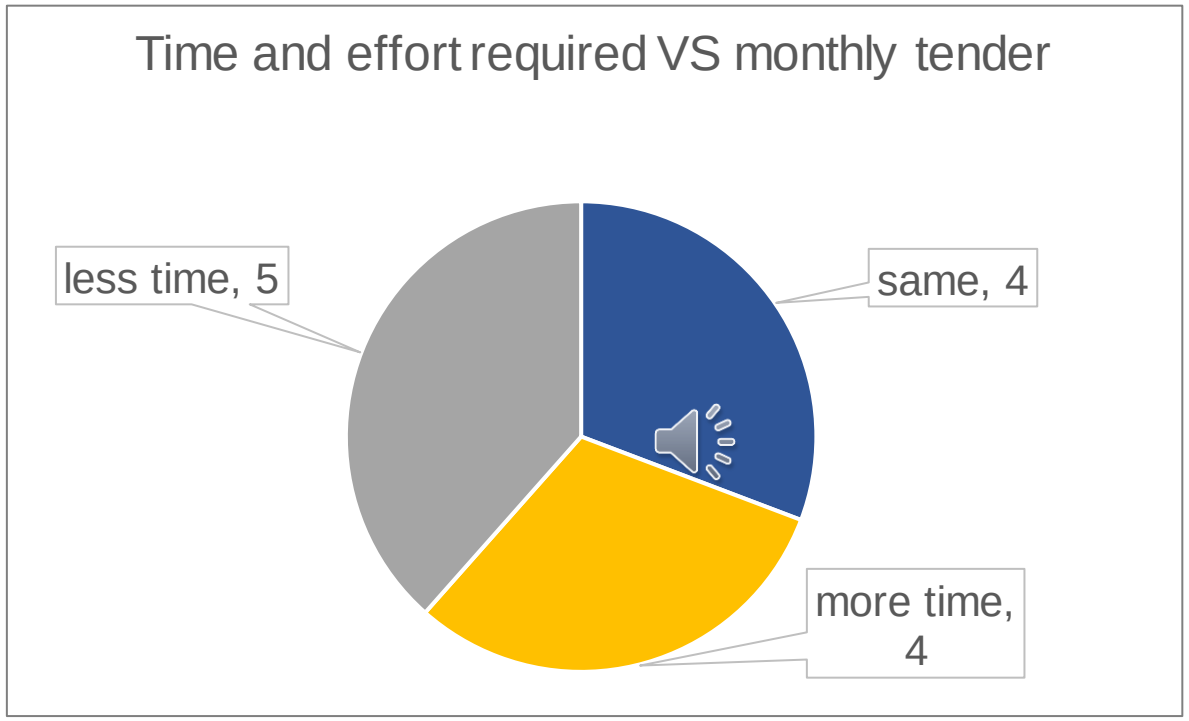
On average, DLH auction price is now lower than the monthly FFR tender price for an equivalent bundle of services

Market Transparency



Participants speak highly about the transparency of the market information as we publish the full market results in stead of only allow participants seeing their own results.

Time/ Efforts saving



Participants generally indicated that it took them less time/ efforts to prepare for a single auction compared with what required for a monthly tender. However, auctions are four or five times a month thus 61.5% participants stated that the overall effort for the auction is equal or grater than the time for monthly tender

Lessons Learnt

An elastic bid curve would simulate the effect of additional competition in EFA periods which have low liquidity

It's important to assess all assessment rules together not individually.

The target quantity of response to be procured in the Auction should be optimised and reviewed regularly instead of a fixed volume each week.

Plan for the next step

Separate LF/HF products procurement with “linking by products”

- Remove barriers to entry for participants whose frequency response capabilities are not symmetric
- Allow the ESO to procure different amounts of HF and LF response according to operational requirements
- Give participants full flexibility to construct sell orders in different ways


Thank you