The webinar will start at 10.02am

If you have any issues please email us directly at demandflexibility@nationalgrideso.com

Demand Flexibility Service

Overview of Winter 23/24 and What's Next

Friday 22nd March

Agenda

- Overview of Winter 23/24 and Headline Statistics
- Overview and Feedback
- What's Next for DFS

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Overview of Winter 23/24

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Demand Flexibility Service

Headline Statistics

2 Live events

Over 3.6 GWh delivered

Around 2.5 million reach

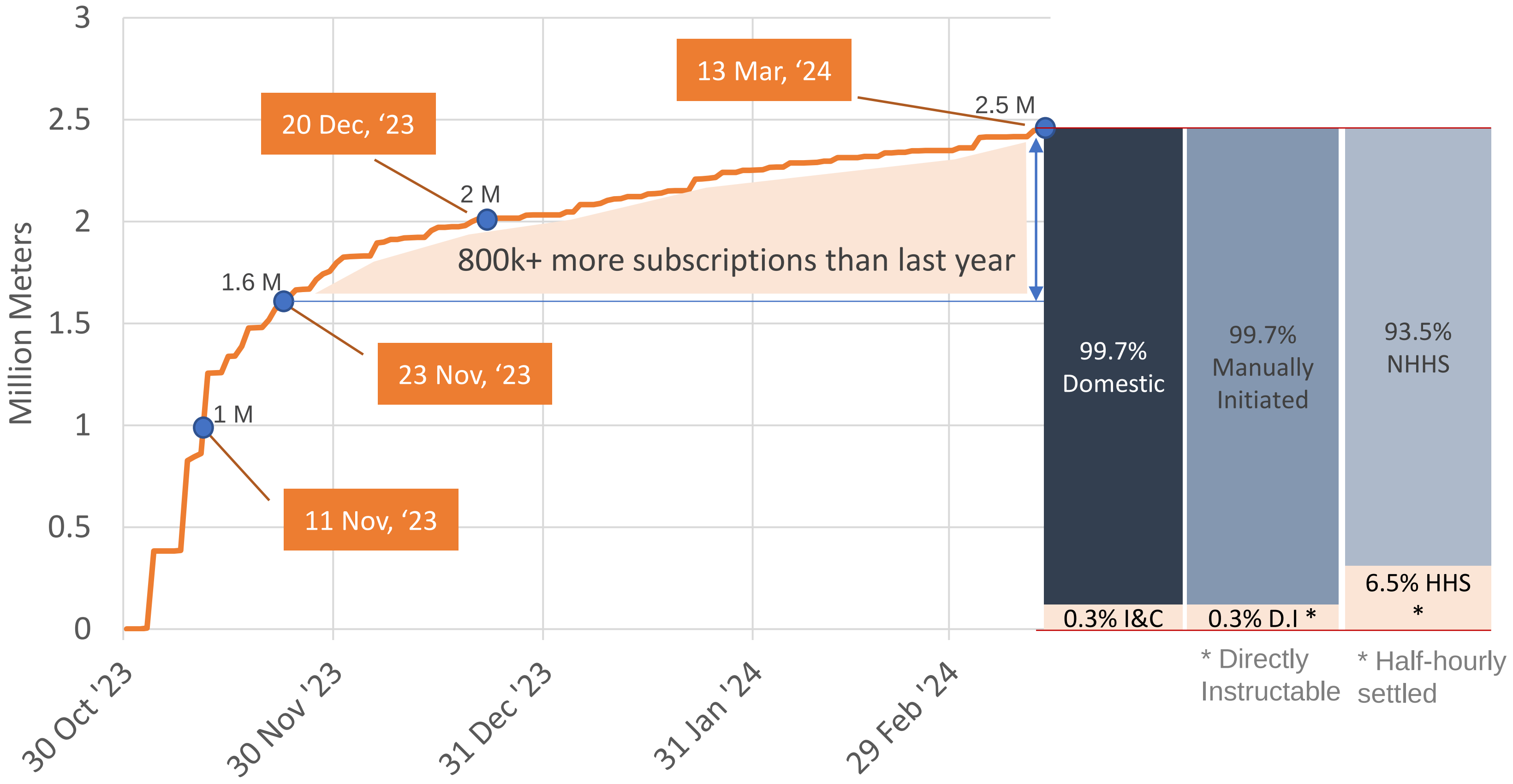
Peak delivery over 400MW

48 Registered Providers

14 Tests Conducted

7 Price Discovery/ Competitive Tests

DFS Sign-up Stats

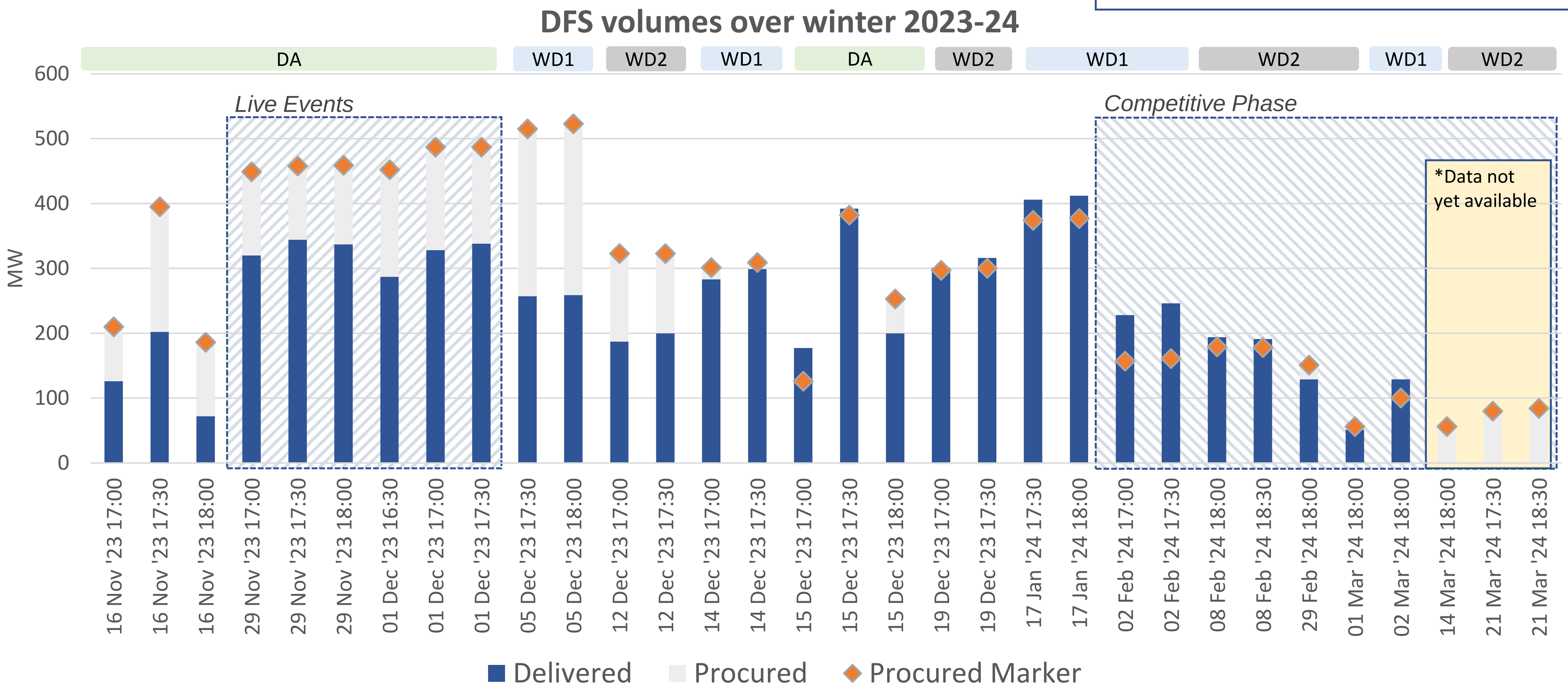


- Surpassed 1 million meters within ten days of launching the service.
- Surpassed the maximum participation of last years' service (1.6 million) on 23rd Nov, 23.
- Crossed the 2 million threshold on 20th Dec, 23.
- More than 2.4 million households and businesses have signed up to DFS. This represents an increase of 50% compared to the previous winter.

https://www.nationalgrideso.com/industry-information/balancing-services/demand-flexibility-service-dfs

DFS Delivery

DA	*Day-ahead procurement.*
WD1	*Procurement at around 09:00 for same day delivery.*
WD2	*Procurement at around 12:00 for same day delivery.*

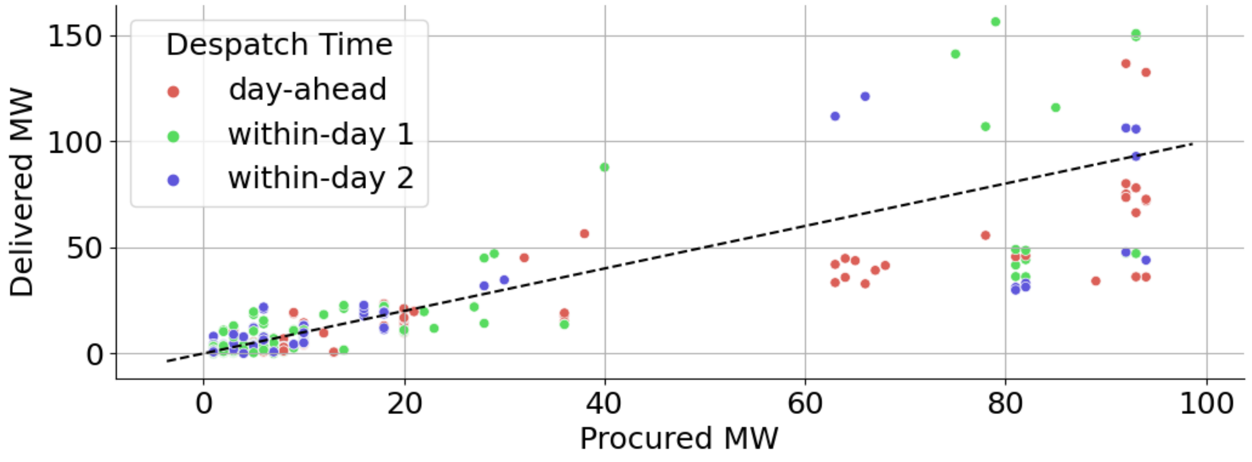


Delivered vs Procured

DFS Units cluster in two groups, i.e., less than 40 MW and over 60 MW.

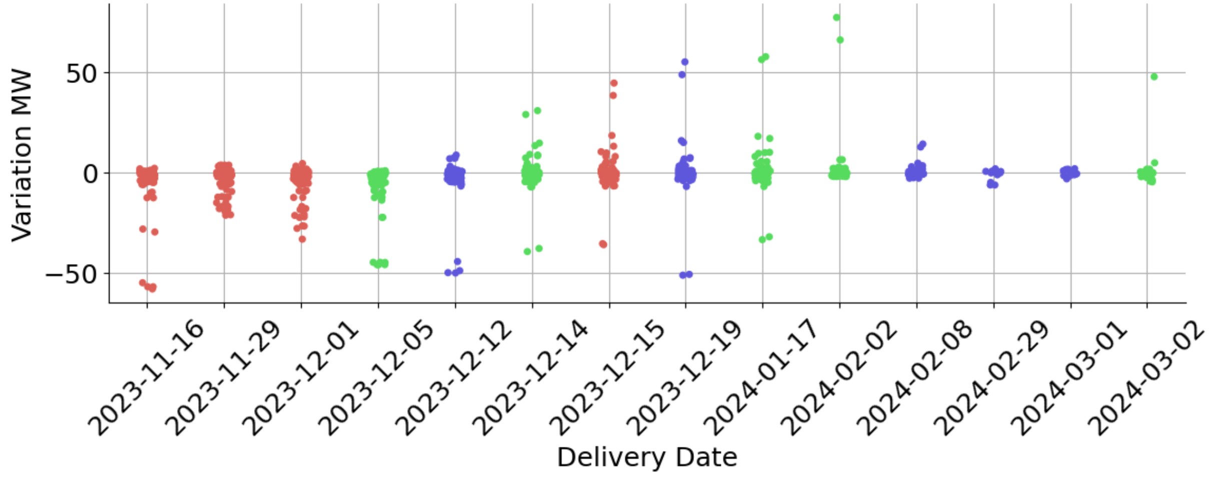
In general, delivery from larger DFS Units tends to be less consistent than from the smaller units, regardless of the **despatch time**.

DFS Units offering less than 40 MW, on average, tend to deliver closer to their procured quantities than larger units.



The **variation** (difference in MW between delivered and procured from each unit) for each event is shown as a point in the figure on the bottom right.

Overall, most units tend to exhibit small variations. However, there are cases where the variation was about -50 MW and +50 MW.



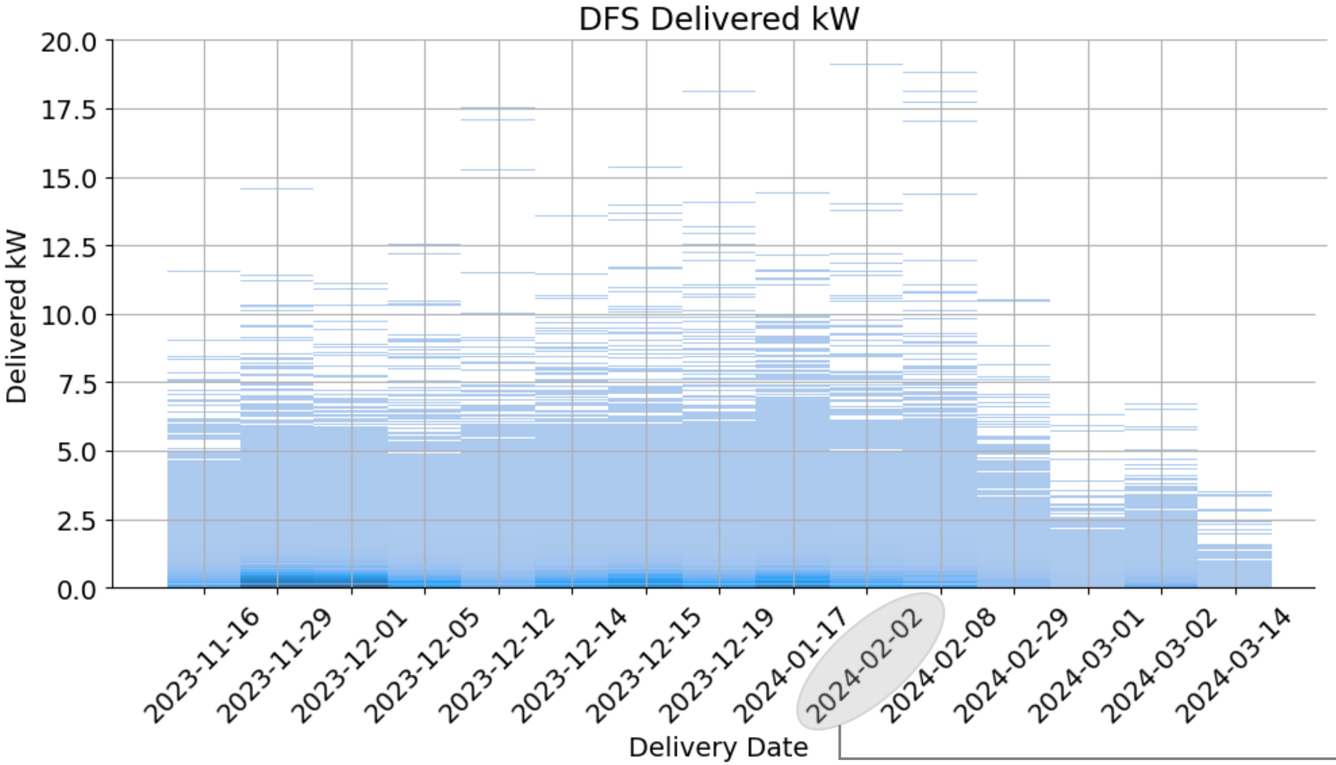
Delivery Breakdown – Domestic

The chart below shows delivery breakdown, in kW, from **Domestic** end consumers for each DFS event this winter.

Darker colours indicate more end consumers delivered in that range.

As expected, delivery from this segment mainly derives from a large number of relatively small reductions.

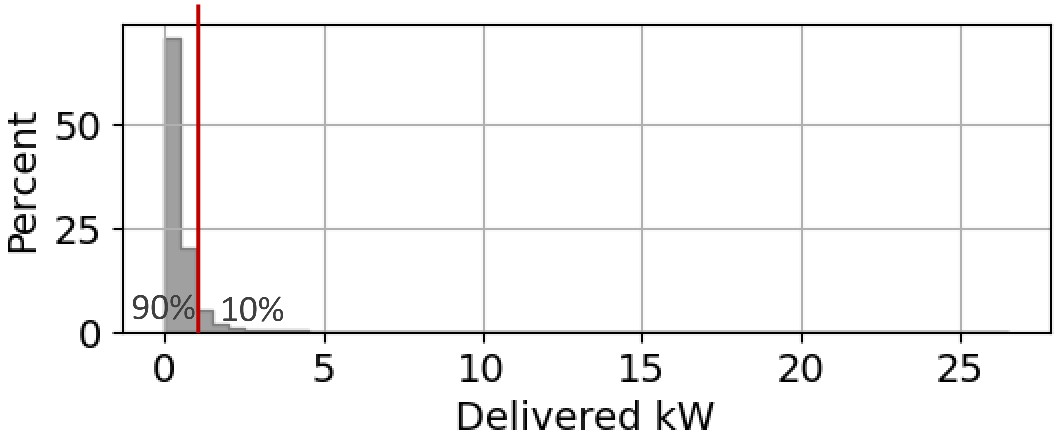
Below is an example for a specific test in February. Here, about **90% of the Domestic reduction comes from customers reducing 1 kW or less.** Peak delivery from this segment approaches 20 kW.



Delivery Date: 2 Feb, 2024

Delivery Period: 17:00 to 17:30

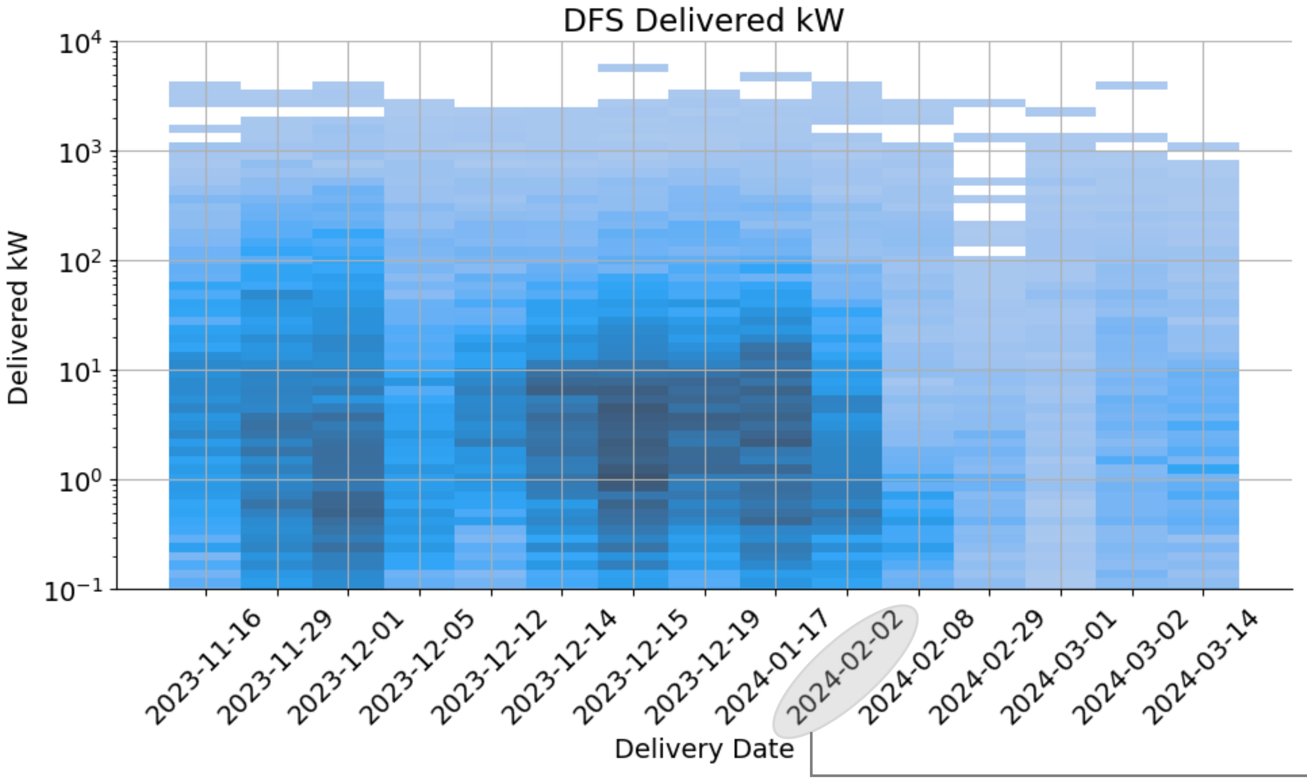
Dispatch Time: Within-day 1 (AM)



Delivery Breakdown – I&C

The chart below shows delivery breakdown, in kW, from **I&C** end consumers for each DFS event this winter.

Darker colours indicate more end consumers delivered in that range.



I&C typical reductions are generally larger than Domestic. Below is an example for a specific test in February.

The majority of the reduction achieved on that period was from end-consumers doing less than 1 kW. A third of the delivery came from end users doing between 1 and 10 kW.

I&C end users reducing demand by more than 10 kW on that period accounted around 22%. The maximum demand reduction achieved was 3.6 MW.

Delivery Date: 2 Feb, 2024

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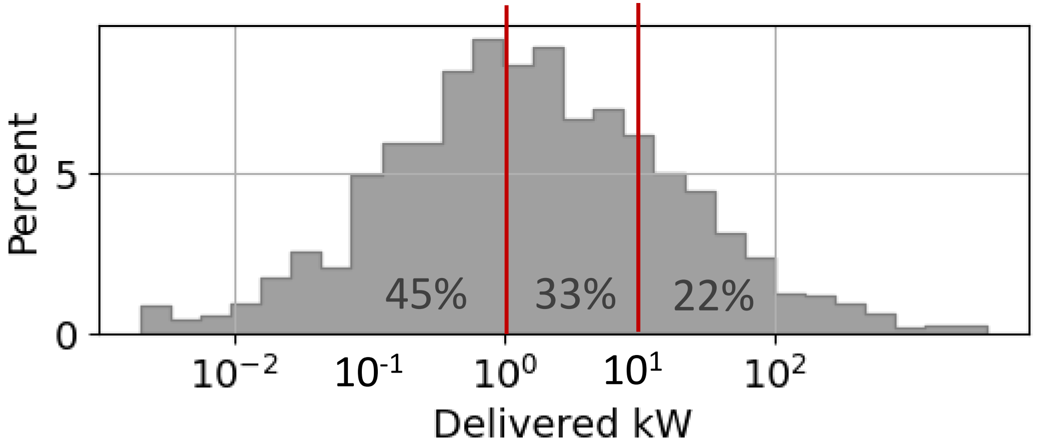
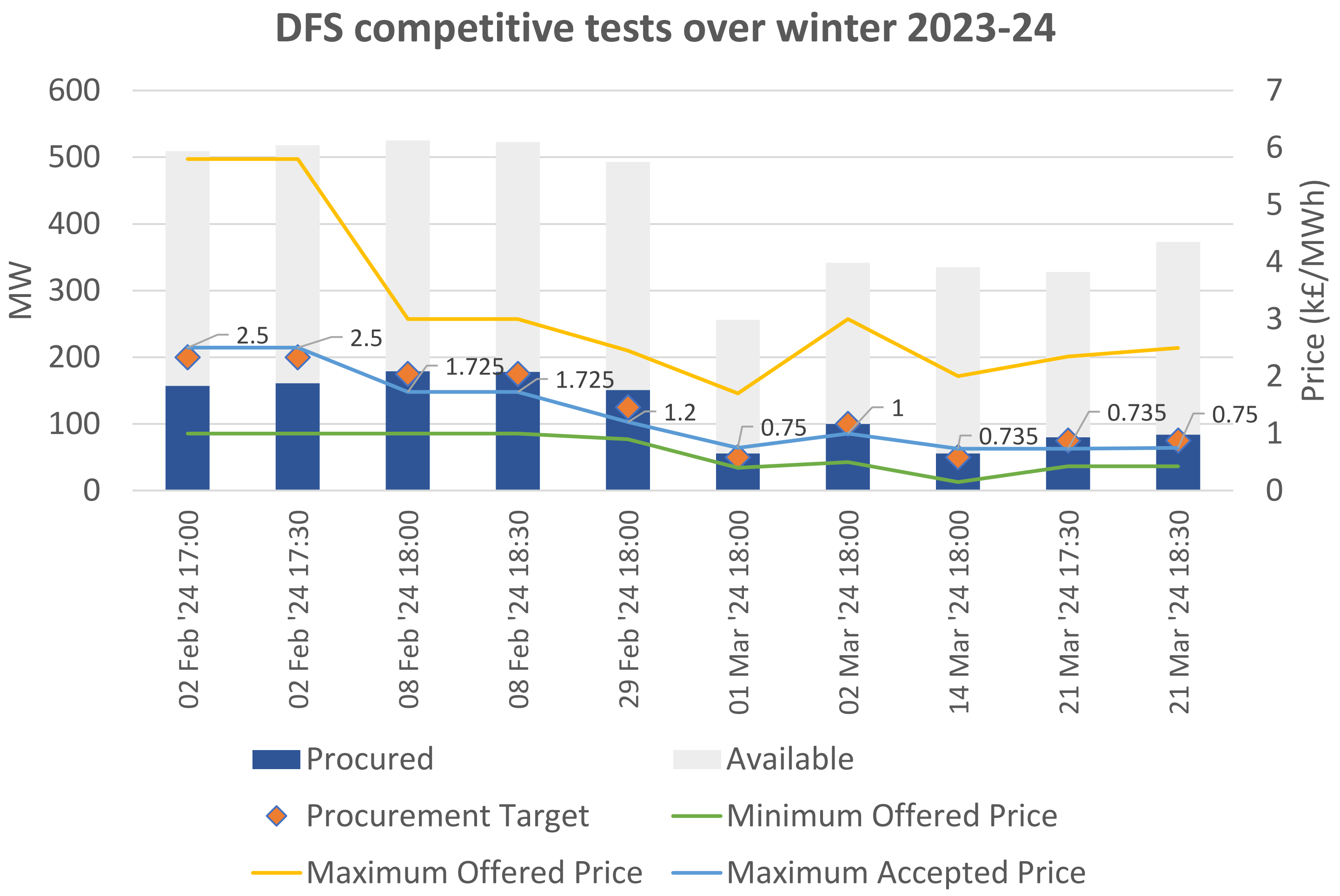


Competitive Tests

- To better understand at what prices consumers and service participants are willing to reduce demand, we introduced the concept of **competitive tests** i.e. tests where the GAP = 0£/MWh.
- To encourage competition, the procurement target for these tests was set lower than the total market capacity.
- To date we have carried out 7 competitive tests looking at various facets of the service, such as capacity available and price spread as shown on the graph.

We targeted lower volumes to simulate competition and lower prices.

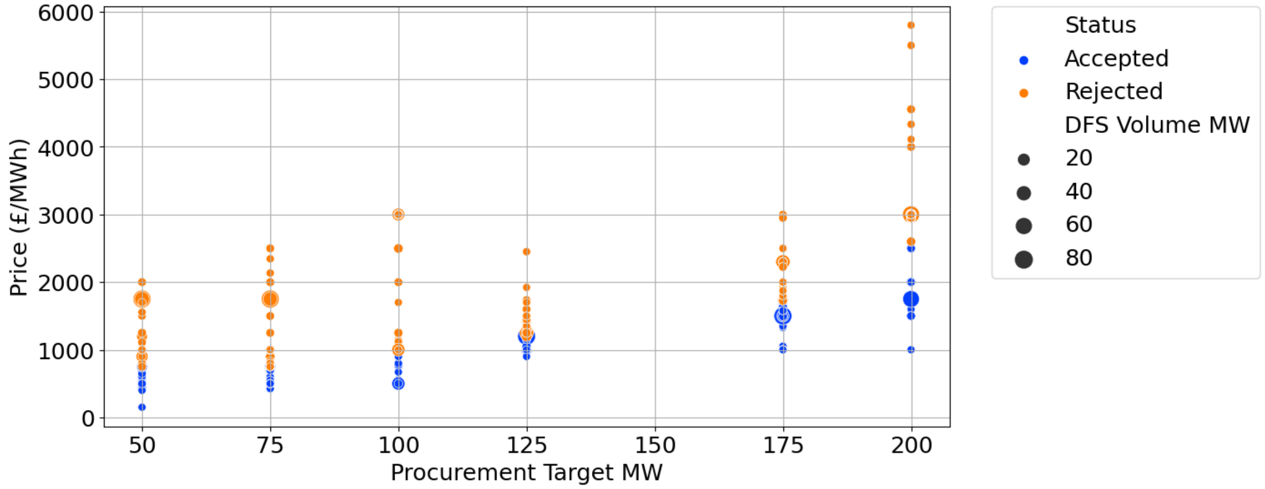
This meant fewer providers were successful in winning contracts which limited our evidence to show that consumers needed higher prices to respond effectively.



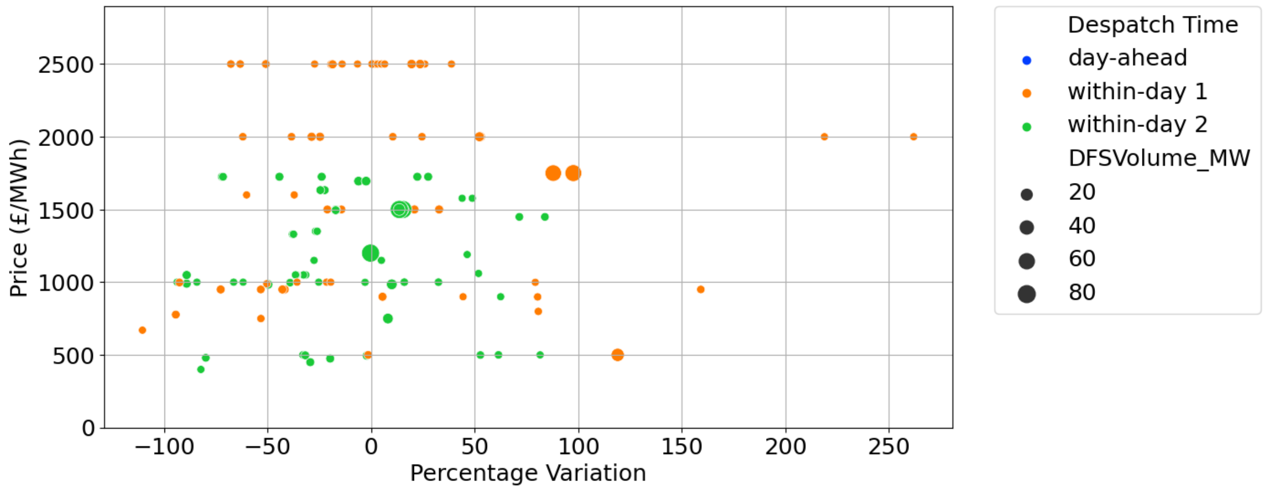
Competitive Tests

We have observed a link between the spread of submitted prices and the procurement target.

In general, **lower targets tend to correlate with lower spread of prices**. The figure on the top right shows that maximum and minimum offered prices reduce as procurement target is reduced.



The figure on the bottom right shows the accepted price vs the percentage variation. The fact we cannot discern a pattern is encouraging as it indicates **same quality of delivery regardless of accepted price**.



Overview & Feedback

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Demand Flexibility Service Overview

- **Forecast Improvements**

  Within Day - new lead time so initial forecasts were an unknown, has improved as tests have been carried out

  Difference between within day AM and PM is decreasing

  Stabilised at around 450MW for day ahead and circa 350MW for within day despatch

- **Competitive Testing & Price Discovery**

  So far, we have carried out 7 test events without a GAP
  Accepted prices have ranged from £150/MWh to £ 2500/MWh
  Our first ever weekend test event on a Saturday (within day AM) saw 242MW's bid for a 100MW requirement

- **Reporting and Analysis**

  Via Contracts/Market Monitoring team, we have fed findings back to providers and this has improved forecasts and bid/settlement data.

- **Audits**

  Regular audits have been carried out regarding notifications to end consumers and participation data.

Feedback from suppliers/aggregators

Positive service that has a **low barrier to entry** for everyone to play a part into the **decarbonisation of the grid**.

Engage average ordinary consumers like households and SMEs. The vast majority of MPANs, this is their first participation in flexibility markets, and it's been a resoundingly positive experience

DFS has **helped energy reduction innovations** for businesses.

National coverage.

Has great **media attention** and **good PR**.

Help to **bridge the gap to Market wide Half-Hourly Settlement** by allowing Non-Half hourly settled asset to flex their consumption.

Allowing **stacking would increase volume in ESO and DSO** Markets.

Demand Turn **up** and Turn **down**.

Payment for availability and utilisation.

Baseline methodology needs changing/improvement (from EV chargers).

Data provision and forecasting will need **automating** for DFS evolution.

Relationship of Price and volume during competitive tests.

What’s Next for DFS

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Flexibility is a critical part of the energy market as we move towards a zero-carbon power system

Aims

- Ensure that a route to market exists for volume participating in DFS
- Avoid incentivising a delay to transitioning into enduring markets
- Enduring routes to market must have effective competition

What does this mean?

Encouraging volume to move to enduring markets:

- Capacity Market
- DSO flexibility services
- Balancing Mechanism
- Wholesale Market (e.g. through Virtual Lead Parties)
- Ancillary Services (e.g. Static Firm Frequency Response)
- Supplier-led activities (Time of Use tariffs etc.)

Ensure a service is available for any volume not effectively captured by these markets.

Other Enduring Markets

Local Constraints Market (LCM)

	Sum of tendered (MWh)	Sum of contracted (MWh)
December	2747.81	17.34
January	34.30	14.88
February	3326.78	18.81
March so far	18.10	0

Balancing Mechanism (BM)
300MW Reduced Operational Metering for Small Aggregated Assets

- An exemption is in place for small aggregated assets to participate in the BM with reduced operational metering standards.
- The first 'pure EV' BMU has now gone live.
- Get in touch with the Power Responsive team to participate: power.responsive@nationalgrideso.com

Input Required

We're asking for input to help shape next steps

If there is DFS volume where there is not yet a practical route to market (e.g. domestic manual flex), then we will continue to run a service to allow that volume to participate. However, we expect this to be transient, with Market wide Half-Hourly Settlement for example able to provide an enduring market signal for domestic manual flex.

We need input to help us:

- Establish the type of flex we need to target in the short term
- Justify that other markets are not a viable alternative
- Improve the design of any service going forward

Identified Critical Areas

Enabling stacking is key, especially with DSO flexibility services but also potentially with the Capacity Market

Baselines may require amending if other services are used frequently and pollute historical days

Greater participation of Asset metering

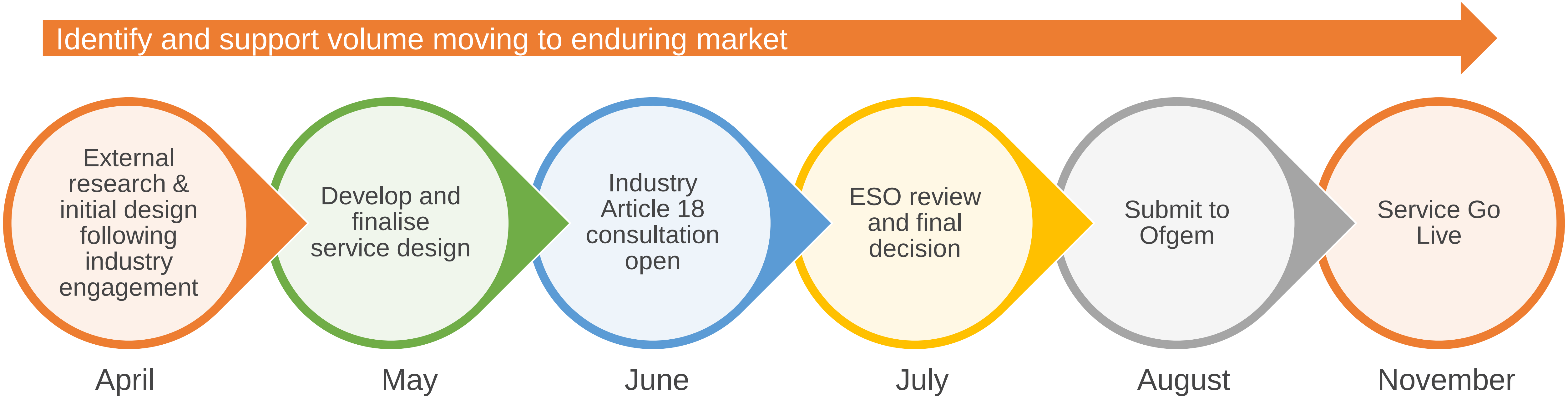
Performance monitoring to monitor and prevent gaming or poor performance by end consumers (e.g. baseline inflation) or by participants (e.g. poor forecasting)

Review of overall revenue proposal – alternative value approaches that do not involve a high or any GAP

Are we missing a **critical** aspect that needs attention?

Following this webinar, we will publish a questionnaire early next week, in Microsoft Forms, in order to obtain further feedback. Please help us to prioritise these areas as part of this.

Next Steps – Indicative Timeline



- Our focus in the next 2 months is to conduct external research and following the engagement with industry, identify routes to market.
- We're developing our first distributed flexibility market strategy and will launch a call for input with industry this spring
- We will also shortly conduct Consumer Evaluation Research in which we would welcome participation as this will feed into development of the DFS
- ESO will develop and finalise the DFS service for next winter with a view to go out for consultation in June.

Q&A

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Any questions & queries or would like to arrange a direct call

demandflexibility@nationalgrideso.com