We will start the session at 10:05

DFS Deep Dives

3) Process and Operational Delivery

Thu 27th April 10:00 – 12:00

ESO

Introduction

Stages of service development

Initiation	Development	Creation	Consultation	Onboarding	Go-live
• Review of DFS for winter 2022-23 • Kick-off session (Feb ‘23)	• Industry webinar (Mar ‘23) • Call for input • ESO review • Deep dive sessions	• ESO review deep dive outcomes and create service terms for consultation	• Industry consultation • ESO review and update • Ofgem review and approval process	• Provider onboarding	• Service go-live
Complete	Current stage	April / May ‘23	3-4 months	1-2 months	Aiming for end of October ‘23

Deep-dive sessions

1) Call for input and role of DFS

Tue 09:00 to 11:00

This session will be focused on where we are in the process of service development, playing back the feedback we received in the call for input, how we will be positioning DFS for winter 2023-24, what we'll cover in the other sessions, and a Q&A session at the end.

2) Commercials

Tue 14:00 to 16:00

This will be an interactive session focused on the commercial elements of DFS, including: procurement process & timing; tests, including role, mechanisms, number and GAP, and; bid structure, price discovery & payment.

3) Process & operational delivery

Thu 10:00 to 12:00

This will be an interactive session focused on the process and operational elements of DFS, including: baselines, metering, MPANs, and automation.

Call for input

Call for input

About

The call for input was set up to help understand the industry views on the next steps for demand flexibility following the closure of the initial ESO Demand Flexibility Service Winter 22/23

The insights gained from this call for input have been used to develop the demand flexibility deep dive workshops.

A total of 48 responses were collated, mainly via an online form, as well as several offline submissions sent directly.

The main categories of respondents were suppliers, technology companies and aggregators.

Responses were also received from wider market influencers such as the regulator, government bodies, trade and consumer bodies, academia, network operators and generators.

Priorities

You rated the following topics most highly:

- **Baseline methodology**
- Driving consumer participation and exploring consumer incentives
- Alignment with Balancing Mechanism & Ancillary Services
- Guaranteed Acceptance Price (GAP) & price discovery
- **Event opt-in**
- Bidding process & mechanism
- Closer to real-time procurement/dispatch
- **MPAN process/duplication resolution**
- **Process improvements & automation**

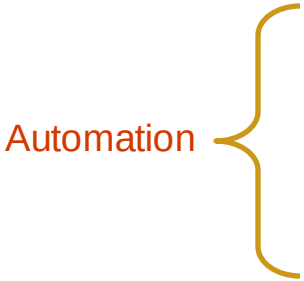
Call for input summary:

https://www.nationalgrideso.com/document/279191/download

Process and operational delivery feedback

MPAN duplication

Process and operational delivery feedback



Process & operational delivery proposals

Interaction

Interactive element

We are using Mural for interactivity during today's Deep Dive session.

The Mural link can be found in the Meeting Information within the Teams meeting: https://app.mural.co/t/nationalgridgrp0642/m/nationalgridgrp0642/1682435674679/9747a23c87f8fbf186f3833218f1359f92fe1999?sender=2678ee30-d5c9-4e2a-9a6e-aed149c0df40

bit.ly/3VcUpHV

Please include your name and company name when you add a post-it note to the Mural board.

This section

- We will talk through the proposals for each section:
  - *Baselines*
  - *Metering requirements*
  - *Import/export delivery*
  - *ABSVD & half-hourly settled MPANs*
  - *Eligibility*
  - *MPAN proccesses*
- There will be a few minutes to add any feedback or questions after each section
- We will look to answer any questions for the section before we move onto the next proposal

Interactive Sessions

Mural will be used for the interactives sessions, please use the QR code to the left if you have the app or go to

bit.ly/3VcUpHV

Baselines

What did we want to achieve with the DFS?

We wanted to reduce demand to be below what it would otherwise have been, at certain times when normal commercial actions would not be sufficient to meet our total requirements to cover demand and upwards margin.

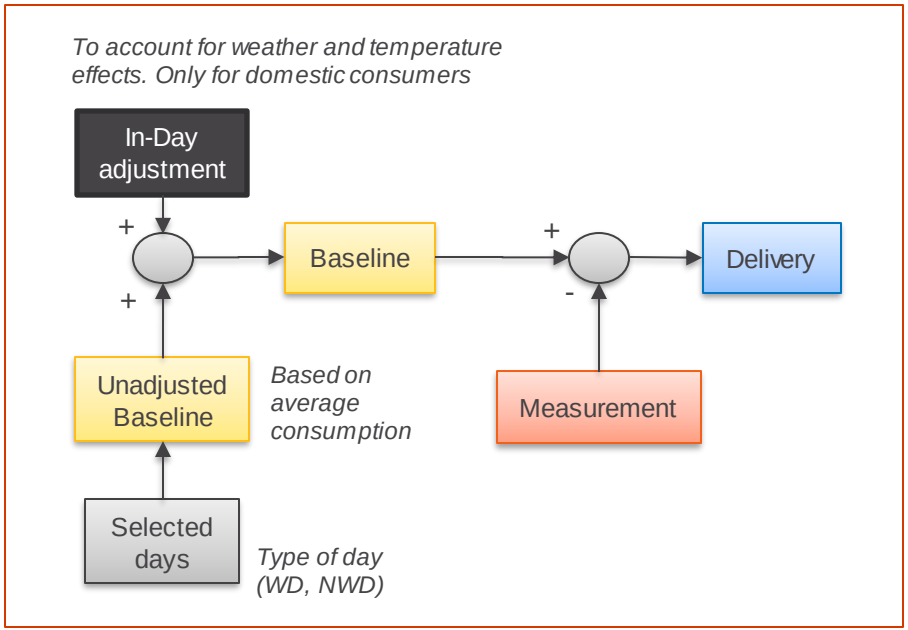
This is most likely to be over the darkness peak (DP) in the early evening on weekdays, typically between 5-6pm.

What is the purpose of the baselines?

To provide a reasonable estimation of the typical MPAN consumption in days and times similar to that of the flexibility event.

How was the reduction in demand determined in the DFS?

Simplified diagram of P376 Baseline Methodology



Baselines

How was the reduction in demand determined in the DFS?

The end consumer's actual demand is measured relative to a baseline, with the difference between the baseline and actual being credited as their delivery.

According to P376, the baseline is calculated as the end consumer's average usage over the previous 10 working days (or 4 weekend days, as applicable).

For domestic consumers, an adjustment is made to the baseline to account for the effects that things like changes in weather have on their demand from day-to-day. This within-day adjustment is based on the the three hour period up until one hour ahead of the event window.

What are the issues with this approach?

Providers have highlighted that the current baseline methodology, combined with some other key factors, creates some perverse incentives for end consumer behaviour, or other ways that the service is ineffective. The other factors include:

a. The time at which the DFS is needed is quite easy to predict

b. The unit rate for non-HH settled end consumers, which make up most of the volume, does not vary based on the time of day

What did we hear from the call for input?

There is a general consensus for removing the within day adjustment for consumers to avoid potential for negative behaviours, customer confusion and onerous data provision.

Another potential option is to change the adjustment period to before consumers are notified of an event or use a longer baseline assessment period.

Baselines: options

Option 1: no change

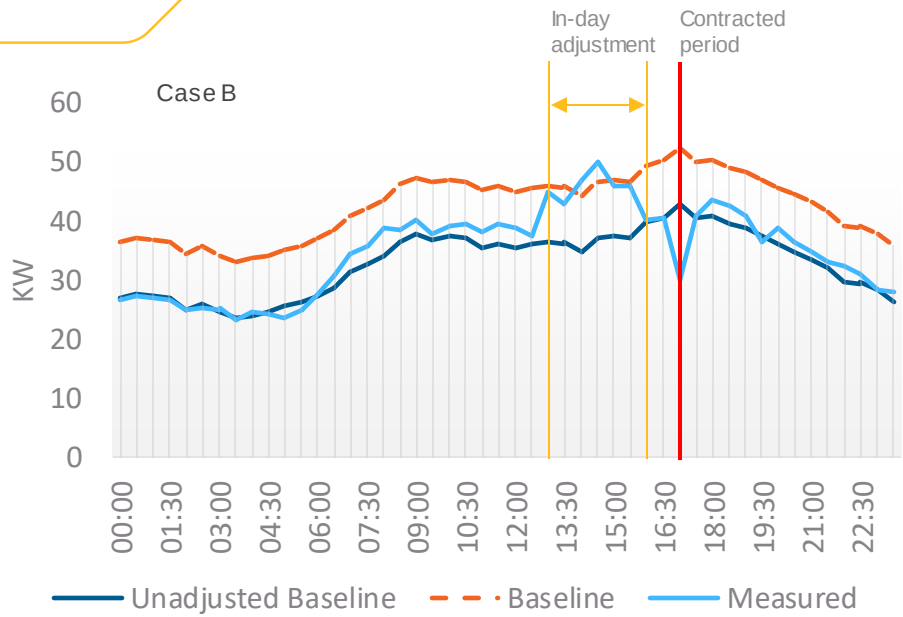
Keep the current implementation based on the P376 Baselining Methodology.

The baseline is calculated as the end consumer's average usage over at least the previous 10 working days (or at least 4 weekend days, as applicable).

For domestic consumers, an adjustment is made to the baseline to account for the effects that things like changes in weather have on their demand from day-to-day. This **within-day adjustment** is based on the difference between their usage in the period from 4 hours to 1 hour before the delivery period, and the average usage over that same period on the previous 10 working days.

Example

Case	Unadjusted Baseline (kWh)	In-Day adjustment (kWh)	Baseline (kWh)	Measured (kWh)	Delivery (kWh)
A	21.5	0.8	22.2	15	7.2
B	21.5	4.8	26.2	15	11.2

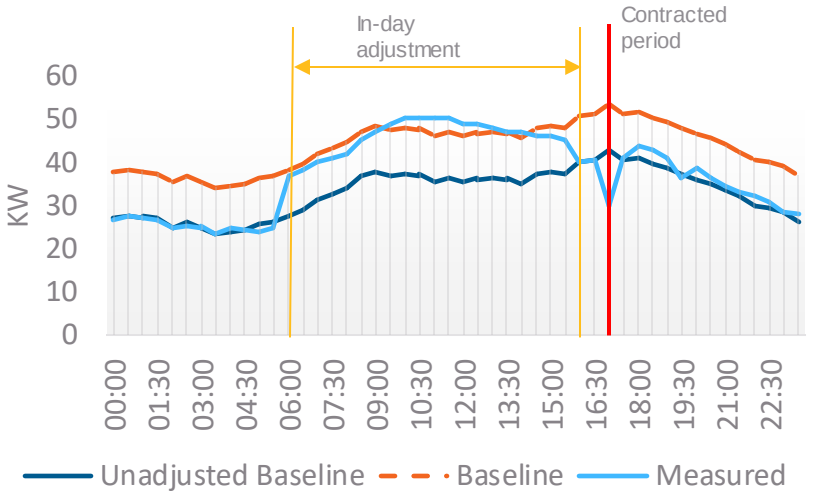


Baselines: options

Option 2: longer adjustment period

Change the within-day adjustment period to make it longer, e.g. 10 hours.

This would make it less attractive for end-consumers to engage in negative behaviour, as they would need to spend more money on the adjustment than what they would stand to gain by artificially increasing their consumption.



Example

In 2022-23 the typical retail energy price was around 34p/kWh, whereas the DFS GAP was £3.00/kWh. This means that it would cost £1.02/kWh (3 x 34p) for an end consumer to increase their baseline, for a net reward of £1.98/kWh (£3.00 - £1.02) over a 1hr delivery period.

If the within-day adjustment period was longer (and/or if competition made DFS prices lower, e.g. £1/kWh), this would remove the perverse incentive: 10hrs x 34p/kWh = £3.40/kWh baseline change vs. £1.00/kWh reward, which would represent a loss.

Baselines: options

Option 3: adjustment period before the service notification

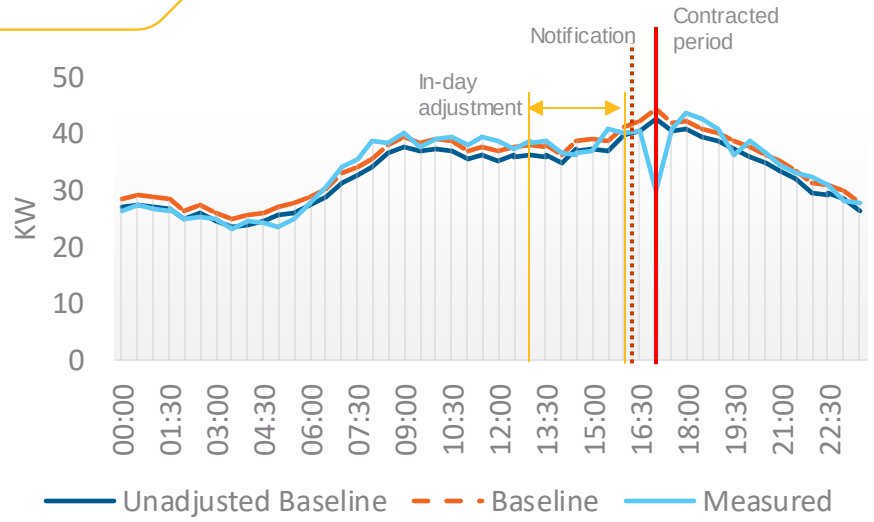
In-day adjustments could be maintained if the end consumer is notified of the event window after the in-day adjustment period, thereby minimising their chance to to engage in negative behaviour.

Also, instead of being always the three hour period up until one hour ahead of the event window, the in-day adjustment period could be variable and notified by the ESO on each event. This will also make it harder for end consumers to engage in negative behaviours at the expense of increasing process complexity.

Example

If there is an event at 17:00 the in-day adjustment period goes from 13:00 to 16:00. Therefore, if the end consumers are notified after 16:00 they would have no way to change their behaviour to affect the baseline.

However, by giving consumers such short notice, their capacity to deliver DFS would be affected, and based on other feedback this is likely to be too short a leadtime for Winter 23/24.



Baselines: options

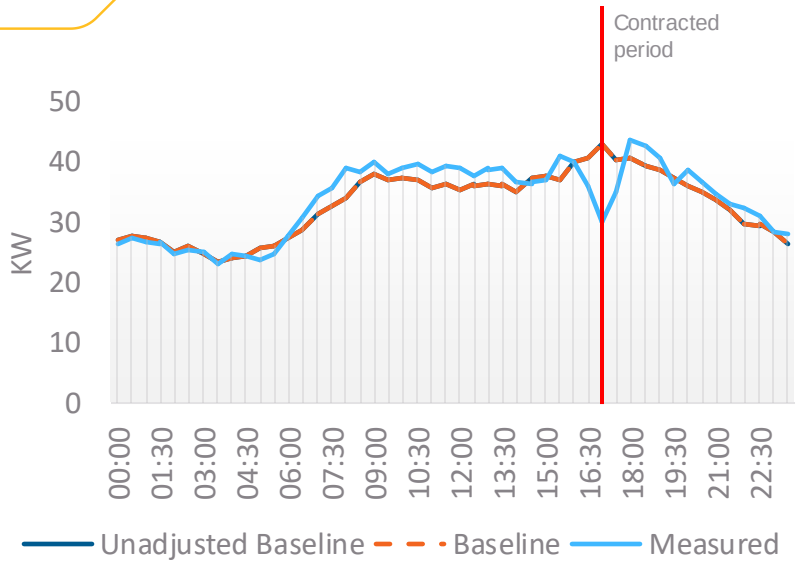
Option 4: remove in-day adjustment (ESO preferred option)

Keep P376 Baseline methodology, but remove the in-day adjustment.

This is because the in-day adjustment has the potential to incentivise negative behaviour by the end consumers. If end consumers know an event is scheduled well in advance, then they can increase their consumption in the adjustment period (three hours before the event). This would raise their baseline and consequently, increase their delivery (and revenue) for the same measurement. Simplified approach.

Example

Case	Unadjusted Baseline (kWh)	In-Day adjustment (kWh)	Baseline (kWh)	Measured (kWh)	Delivery (kWh)
A	21.5	0.8	22.2	15	7.2
B (no in-day adjustment)	21.5	0	26.2	15	6.4



Metering

Metering DFS 2022-23

1. Ability to access Half-Hourly (HH) Metered data.
2. Boundary Meters.
3. ESO paid for demand reduction (including moving from import to export or increasing generation).
4. Applicable Balancing Services Volume Data (ABSVD) process apply to Half-hourly Settled volume.

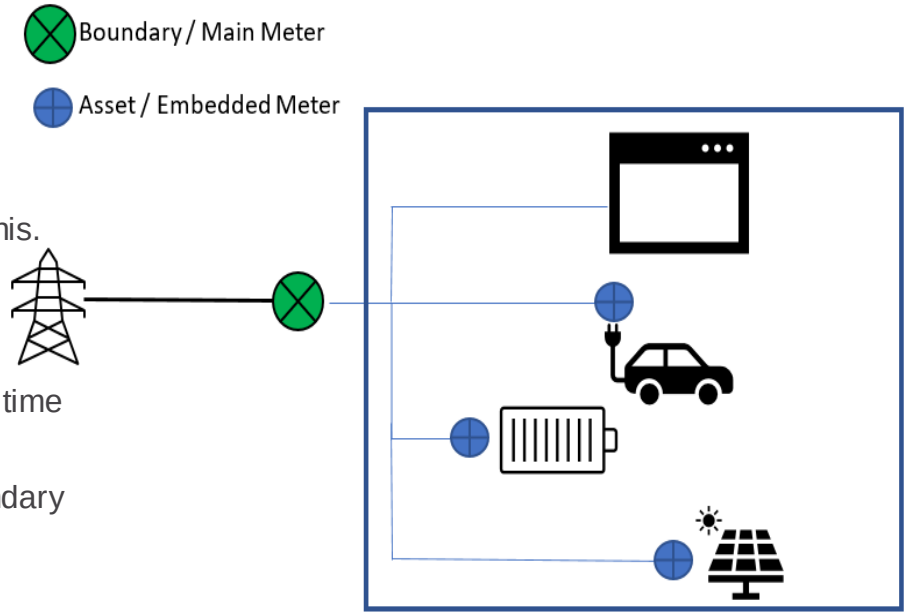
Metering

Proposal for winter 2023-24

All assets require half-hourly metering, either half-hourly settled or non-half-hourly settled.

Only Boundary meter

No change from winter 22/23.



Our reasoning

- Measurable demand flexibility at the **time** that we request this.
- Data at a half-hour resolution via **granular** metering.
- **Accurate** remuneration of flexibility delivered.
- **Realistic and ambitious** metering solutions within time frames.
- **Minimise risk** of double counting if asset meters and boundary meters are both allowed.
- Reflects true net demand reduction.
- Support flexibility through **digitalisation.**

Metering – Type of delivery

	Pros	Cons
Option 1 Demand reduction capped at zero for everyone	• Enables a level playing field. • Encourage providers with export to enter other suitable markets.	• Less volume
Option 2 (ESO preferred) Demand reduction capped at zero for I&C and allow export domestics **Change from DFS 22/23**	• Support domestics due to less mature markets for domestic export and capture volume. • Encourages larger export providers into the other markets.	• Unequal treatment
Option 3 (DFS Winter 22/23) Allow export for all	• Enables a level playing field • More volume for security of supply.	• Does not provide the right signal to encourage providers into other markets.

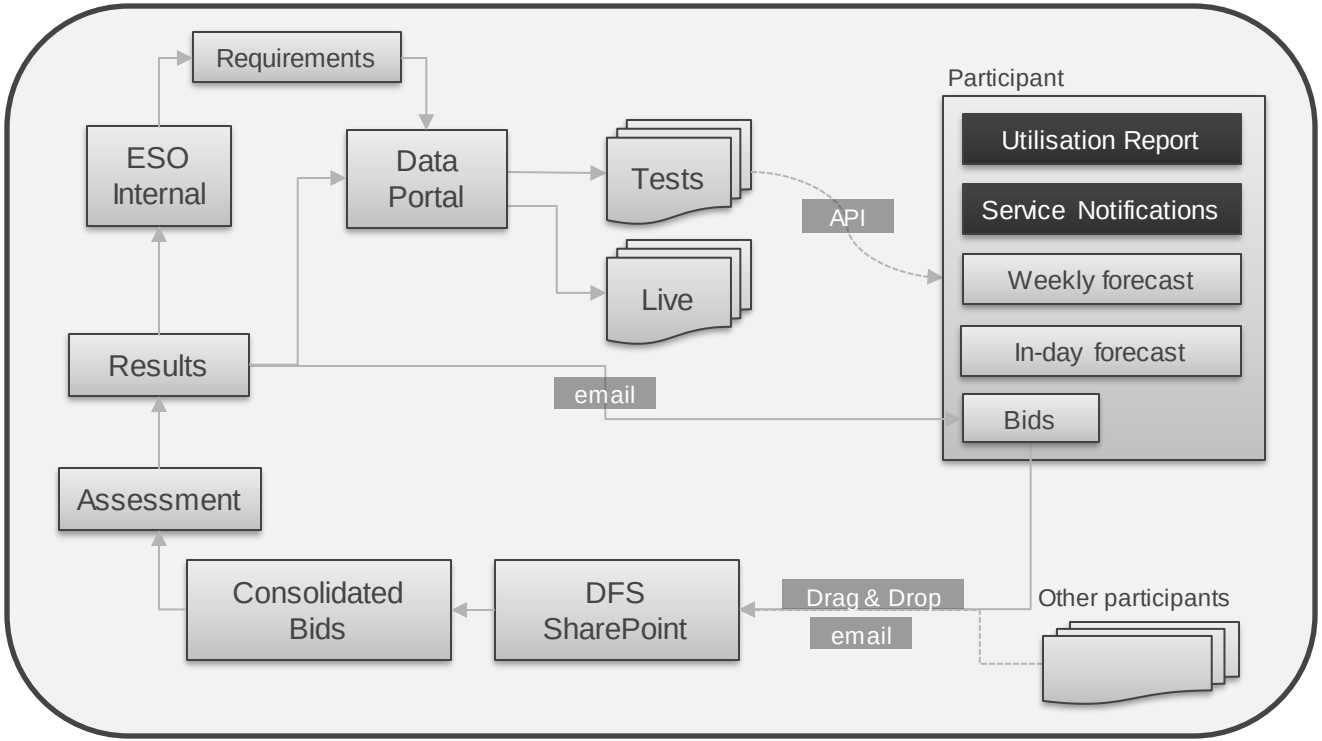
Metering – ABSVD

	Allocation of Imbalance	Level of difficulty	Level playing field	Challenges/Considerations
Option 1 Apply ABSVD process to all volume (HH Settled and non HH Settled)	All	High	Yes	No clear processes set out
Option 2 (DFS 22/23) Apply ABSVD process to only HH Settled volume.	Partial	Medium	No	Data availability
Option 3 Apply ABSVD process to only Industrial and Commercial (I&C) HH Settled volume	Partial	Medium	No	Future increase Domestic HH Settled volume Data availability
Option 4 (ESO Preferred) Apply ABSVD process to HH Settled volume covering • Industrial and Commercial (I&C) • Domestic if MPANs signed up to provide DFS with supplier with potential changes to process to minimise or overcome market data availability limitations. **Change from DFS 22/23**	Partial	Medium	Yes (data) No (imbalance)	Data availability
Option 5 Not to apply ABSVD .	None	Low	Yes	Large unallocated imbalance position

Eligibility

DFS winter 22/23	DFS winter 23/24
All assets require half-hourly metering, either half-hourly settled or non-half-hourly settled.	No change
Only boundary meters can participate.	No change
MPANs cannot be allocated to more than one provider.	No change
All assets must be able to respond for a minimum of 30 minutes.	No change
1 MW min unit size/100 MW max unit size. Parties can register multiple units.	No change
Providers must provide relevant HH metering and baselining data to demonstrate delivery of demand reduction.	No change
Cannot form part of a BM Unit except a Supplier Base BM Unit.	No change
Cannot be providing any other ESO Balancing Service (including having a Capacity Market Agreement), or any similar service to any third party (for example, DNOs).	No change
Be able to respond to an instruction for day-ahead delivery.	Addition of within-day instructions.
DFS units can be aggregated on a national basis.	No change

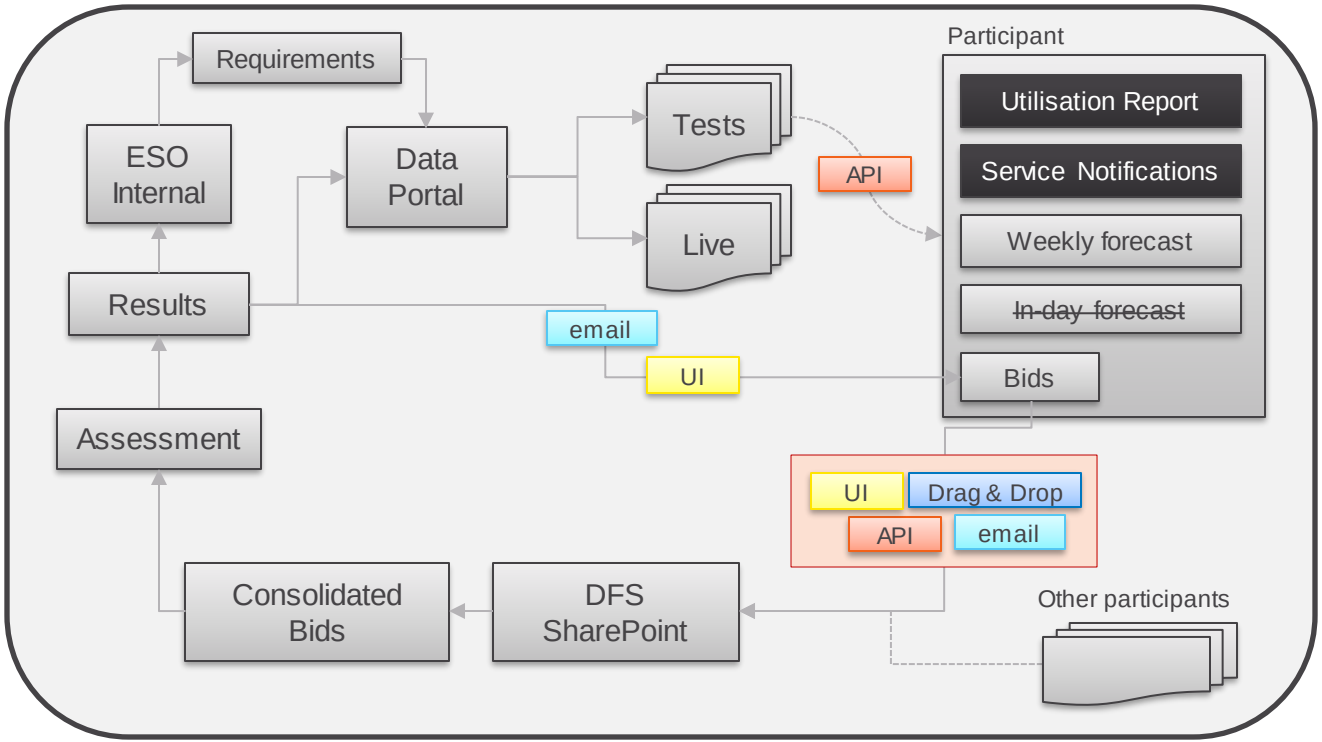
Process - Winter 22/23



Winter 22/23

Participants had the option of saving their files to their dedicated SharePoint site or sending them by email to our DFS box.

Process - Winter 23/24



Winter 23/24

We are exploring the feasibility of enabling additional routes for participants to share the various files required to run the DFS.

For instance, we are looking at the implications for setting up an API to allow participants direct bid submission.

The benefits of these inclusions will be assessed against their implementation costs and the expected lifetime of the service.

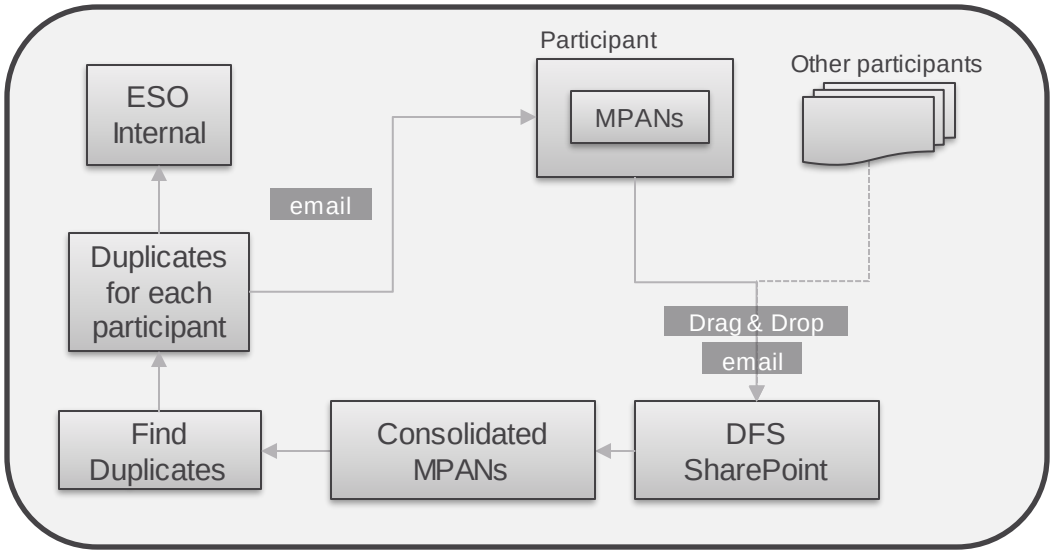
Questions for Mural

If ESO develops an API for direct bid submission, would this cause an impact on your expected process?

Would you actively use it and integrate it in your business?

MPAN Duplication

Winter 22/23



Winter 22/23

Participants submitted their subscribed MPANs on a weekly basis (Fridays).

ESO processes the data and finds instances where the same MPAN appears on multiple providers.

Each provider then received a list of their MPANs which appeared on two or more providers' submissions.

MPANs & Event opt-in

Winter 22/23 – MPAN duplication process

- Weekly MPAN check via submission of an excel document to the DFS sharepoint site
- Duplicates across providers identified and shared
- Providers remove duplicated MPANs from their portfolios
- Providers resolve MPAN duplications between themselves

Winter 22/23 – Event opt-in

- Requirement for MPANs to sign-up to DFS with only one provider
- Requirement for MPANs to actively opt-in to each event

Winter 23/24 – MPAN duplication process

- We are investigating the ability for ESO to offer a daily MPAN check
- Ability for consumers to easily switch between providers – require explicit MPAN leaving process
- Our proposal is to require a timestamp of when an MPAN was signed up by a provider, the owner of any duplicated MPAN(s) will be the latest provider to have signed that MPAN up to the DFS

Winter 23/24 – Event opt-in

- We understand the interactions between performance incentives and event opt-ins
    - Require event opt-in and continue to pay for delivery with the exclusion of MPANs that increase consumption.
    - Require event opt-out and all MPANs (except those opted-out) are included within settlement
- We want to hear your feedback on the impacts of requiring event opt-ins or removing this requirement and instead requiring opt-out.

Deep-dive sessions

Summary of this session

Priorities for developing DFS

You rated the following topics most highly:

- **Baseline methodology**
- Driving consumer participation and exploring consumer incentives
- Alignment with Balancing Mechanism & Ancillary Services
- Guaranteed Acceptance Price (GAP) & price discovery
- **Event opt-in**
- Bidding process & mechanism
- Closer to real-time procurement/dispatch
- **MPAN process/duplication resolution**
- **Process improvements & automation**

Process changes

- We propose to remove the domestic in-day adjustment for the baseline methodology
- We propose to keep the metering requirements of boundary metering and half-hourly metered
- We propose to cap demand reduction at zero for I&C
- We propose to apply ABSVD to HH settled volume (I&C and Domestic MPANs signed up to provide DFS with supplier) but investigating changes we can make to the process
- We are proposing to set the ownership for duplicated MPANs as the latest sign-up

Automation

- We are investigating what is possible for automating elements of provider interactions with the ESO
    - Bid submission process
    - MPAN check process

Next deep-dive session

1) Call for input & role of DFS	2) Commercials	3) Process & operational delivery
Tue 09:00 to 11:00	*Tue 14:00 to 16:00*	*Thu 10:00 to 12:00*
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Next steps

Stages of service development

Initiation	Development	Creation	Consultation	Onboarding	Go-live
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Complete	Current stage	April / May '23	3-4 months	1-2 months	Aiming for end of October '23

Initial next steps

Deep dives

We'll now collate the feedback received as part of the deep dives and feed this in as we refine the service design.

Following further internal investigation we may share and engage on developments around potential automation for the DFS.

Recordings and slides will be shared on the DFS webpage.

Pre-consultation

We will look to run a webinar pre-consultation to share updates we have made to the service design following the deep dive sessions.

EBR Consultation

The EBR regulatory consultation will be launched towards the end of May/beginning of June for industry to provide responses on the updated contract terms and service design.

Contact us

demandflexibility@nationalgrideso.com

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