

**We will start at 09:05**

# DFS Deep Dives

1) Call for input & the role of DFS for winter 2023-24

Tue 25<sup>th</sup> April 2023 09:00-11:00

# Introduction



# Stages of service development



# Deep-dive sessions

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## 1) Call for input & 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

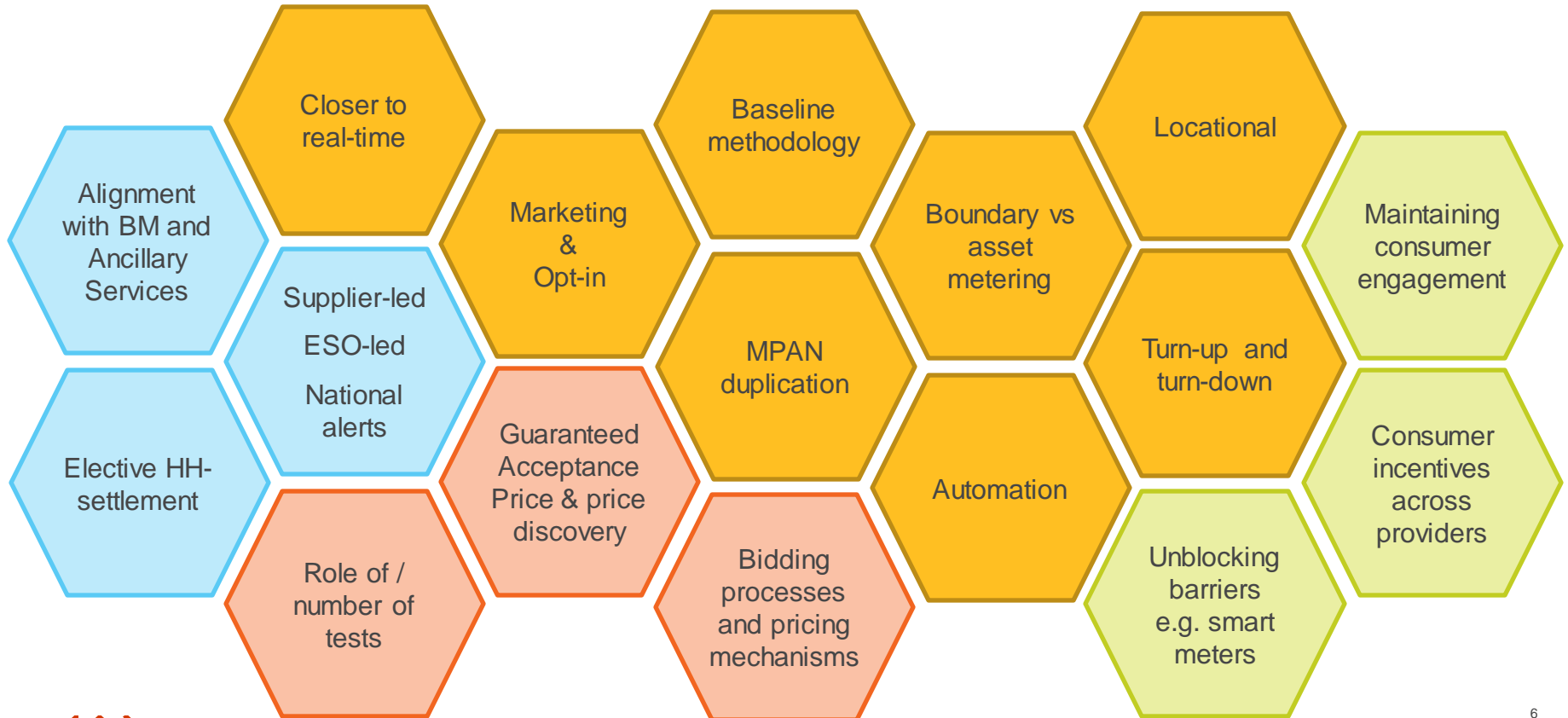
*Thu 10:00 to 12:00*

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

# Industry feedback



# Feedback from Show & Listen + 1:1s



# 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.



## Industry 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>

# Role and commercials

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Role of DFS

- Support for transitional service, keeping as enhanced for this winter and moving to an in merit for future iterations

Guaranteed  
Acceptance Price



# Delivery

## 1. Closer to real time

We wanted to investigate operationally if closer to real time was viable for providers

## 2. Procurement

We wanted to understand the appetite for a more flexible procurement process, for example choosing between Day Ahead and Intra-Day auctions

## Closer to real time

- Overall volumes may be affected, and there may be a difference for I&C vs. domestic
- Effect of opt-in requirement & within-day baseline adjustment
- Possible for most providers
- Customer base preference
- Automation required
- Lead time vs certainty

## Minimum viable lead times

- 4 to 8 hours were suggested as minimum viable times
  - Day-ahead for the following morning
  - Within-day for the evening

# Process

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MPAN duplication



# Rulebook

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## Baseline methodology

- In day adjustment considerations
- Review of other existing baseline process
- Move to 'closer to real time'

## MPAN duplication enhancements

- MPAN database or platform
- Clear set of rules and guidelines for ownership
- Clear customer communications

## Metering

- Domestic suppliers remained neutral generally
- I&C strongest views on asset meters
- Impact of future flexibility for the Measuring Instrument Regulations (MIR)
- Risks of double counting
- Future flexibility through Half-Hourly Settlement is promising but volume could be slow to materialise

# Participation and volume

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Widening scope of  
DFS or access to  
other services



Consumer information



- Suggestions included removing barriers to the Capacity Market (CM), metering, allowing stacking of the DFS with the CM and reducing the minimum requirement threshold.

# Incentives and switching

## Key call outs

- Support offering consumer choice
  - Independent switching service
  - Visibility around process
  - Clarity information
- Understand the drivers of behaviour change
- Reaching disengaged market

## Incentives and messages

- Prize draws
- Financial incentives
- Points
- System resilience
- Carbon reduction

# Wider market

## 1. Ancillary markets

43% thought they would be able to move volume to new markets or were looking into it as a potential

Barriers to the Balancing Mechanism & other ESO ancillary services

- Risk vs. reward
- API integration
- Suitability of services
- Costs

## 2. Understanding ESO projects

Positive response to knowledge about ESO projects as well as potential partnerships emerging

Roadmap of services would be welcomed

## Wider development of flexibility

- Single source of information and data
- Innovation
- Access to wholesales markets
- Increased competition
- Stackability
- Regional pricing
- Support MPAN registration information
- Consistent metering requirements

# Consumer feedback

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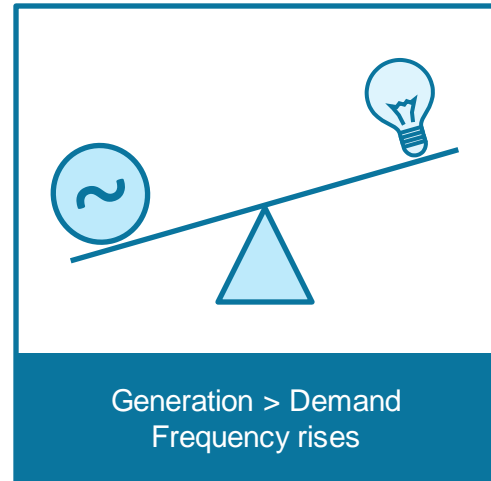
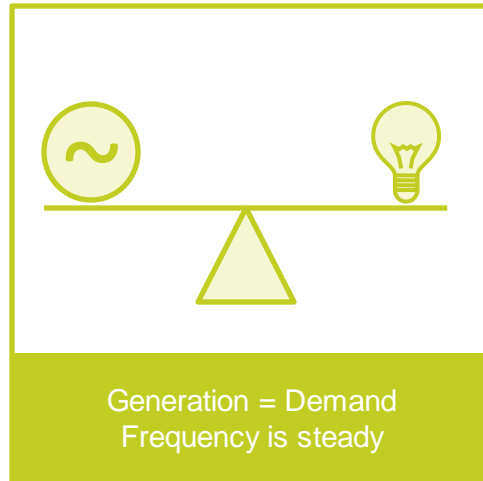
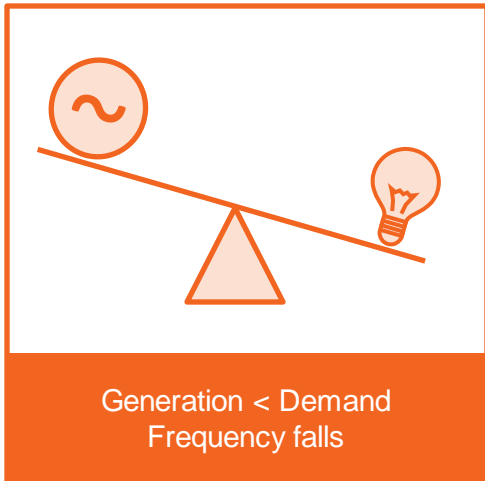
- Our consumer feedback on winter 2022-23 is coming in Summer 2023. This work is supported by Citizens Advice, Ofgem and DESNZ
- The focus of the research is to understand **how** and **why** consumers have participated and identify where there are any **barriers** to participation in flexibility
- Our analysis will include inputs from diaries, interviews, a nationally representative opinion poll, and surveys carried out by the Centre for Sustainable Energy (CSE)
- We will also analyse smart meter data from consenting households and anonymised smart meter data from a participating households
- Reports and dataset(s) will be published and shared

# Role of DFS for winter 2022-23



# Energy balancing 101

- One of the most fundamental requirements of an electricity system is that supply and demand are always balanced, to preserve the overall integrity of the system for everyone
- For us to achieve this energy balancing we need flexibility, in both supply and demand, adjusting both sides to ensure they always match
- The wholesale market currently provides the majority of system balancing during the day, with the ESO performing the residual balancing and balancing on a second-by-second basis



# Role of DFS in winter 2022-23

## Order of Action: Winter 22

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Reconfigure Transmission Network to reduce network congestion, including: Change substation running arrangements, Tap Quad Boosters, to control flow of energy and Making use of enhanced ratings	Normal operating practice – no cost	Changing daily operating conditions can result in different network configurations to reduce congestion
Review and refine reserve requirement within day dependent on system conditions	Normal operating practice – no cost	Changing system conditions can relieve requirements for reserve or increase requirements. This can change at any time as the conditions change.
All deliverable Offer action on all available BM participants	#1 based on Cost	Scheduled from Day Ahead, action taken in real time – some offers may not be available due to network congestion
Issue warning instructions to cold BM participants including Winter Contingency units	#1 based on Cost	Scheduled from Day Ahead, action taken in real time
Buy energy from continental Europe	#1 based on Cost	Scheduled from Day Ahead, action taken from Day Ahead to 4hrs ahead of time by ESO Traders
Reconfigure CCGTs to increase available energy (e.g.sync additional GTs)	#1 based on Cost	Scheduled from Day Ahead, managed within the control timescales within day
SO-SO trade in cost order	#1 based on Cost	SO to SO trade with other SO in Europe/ Ireland

Enhanced Actions (if everyday actions are insufficient)	Order	Comments	Notices are issued at any time as required	Comment
Recall TO assets from outage to increase network availability and increase available capacity	#2	Anytime through to control room timescales, depending on ERTS (Emergency Return to Service) time		
Plan use of Emergency Assistance (EA) from other SO	#3	Enacted close to real-time. Only applicable if capacity is available on interconnectors. EA can be withdrawn at any time	Issue Electricity Margin Notice (EMN)	Request to market to increase available energy or reduce demand. Likely to be issued at Day Ahead. Updated regularly
<b>Instruct Demand Flexibility product</b>	<b>#4</b>	<b>Decision made at timescales as determined by product created (instruction at 24 hours)</b>	Issue a High Risk of Demand Reduction (HRDR) system warning	Warning network operators of high likelihood of demand control. Further request to market to increase available energy or reduce demand. Closer to real-time than ENM
<b>Instruct Winter Contingency Units</b>	<b>#5</b>	<b>Decision made at timescales as determined by dynamic parameters (warning at 12-48hrs)</b>		
Emergency Actions (if enhanced actions are insufficient)	Order	Comments	Issue Demand Control Imminent (DCI) system warning	If possible, this system warning will be issued 30 minutes prior to demand control. Warning to network operators
Emergency Instruction (EI) to other SO	#6	including <a href="#">MaxGen</a> .		
OC6 demand control instructions to DNOs	#7	This could be via voltage control or demand control (disconnecting customers)	<b>AUTOMATICALLY TRIGGERED:</b> A Capacity Market Notice (CMN) is automatically triggered to alert CM participants	Driven by calculation of Market data at 4 hours ahead of real time
Recommend to BEIS to implement ESEC	#8	Ongoing conversations prior to this so all parties would be aware of risk		



# The role of enhanced actions



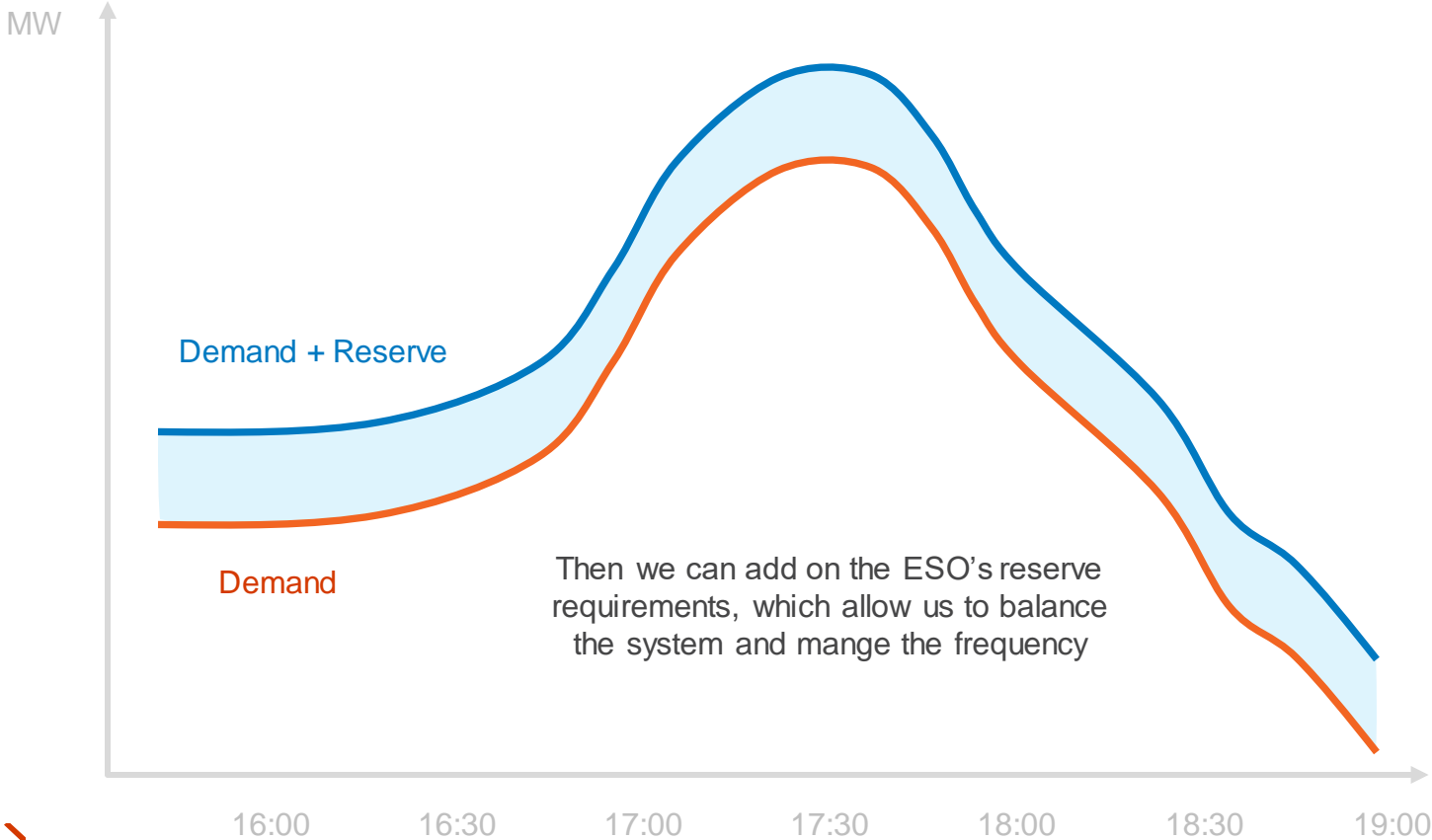
Demand

We can start by taking an illustrative winter evening peak national demand profile

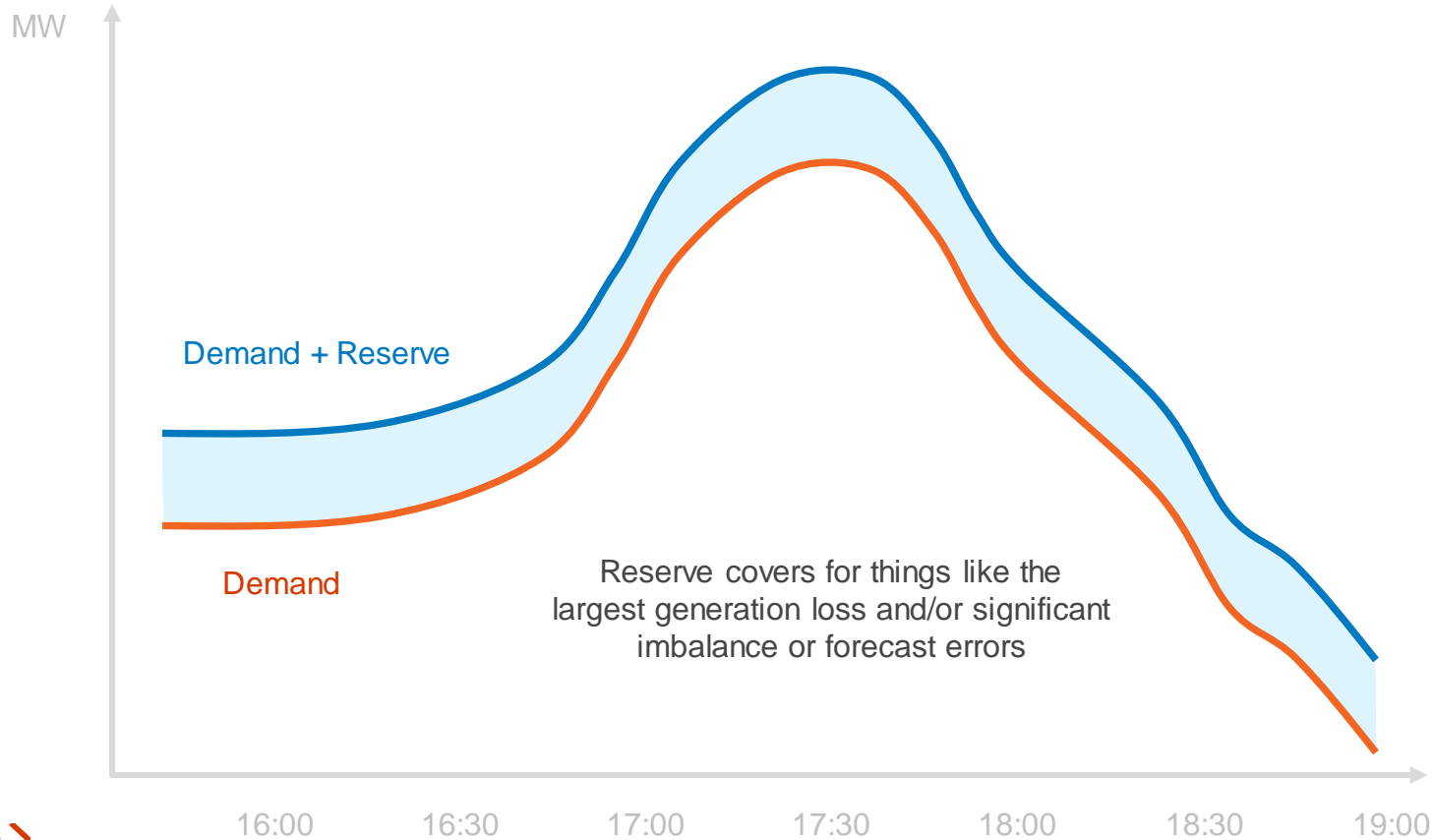


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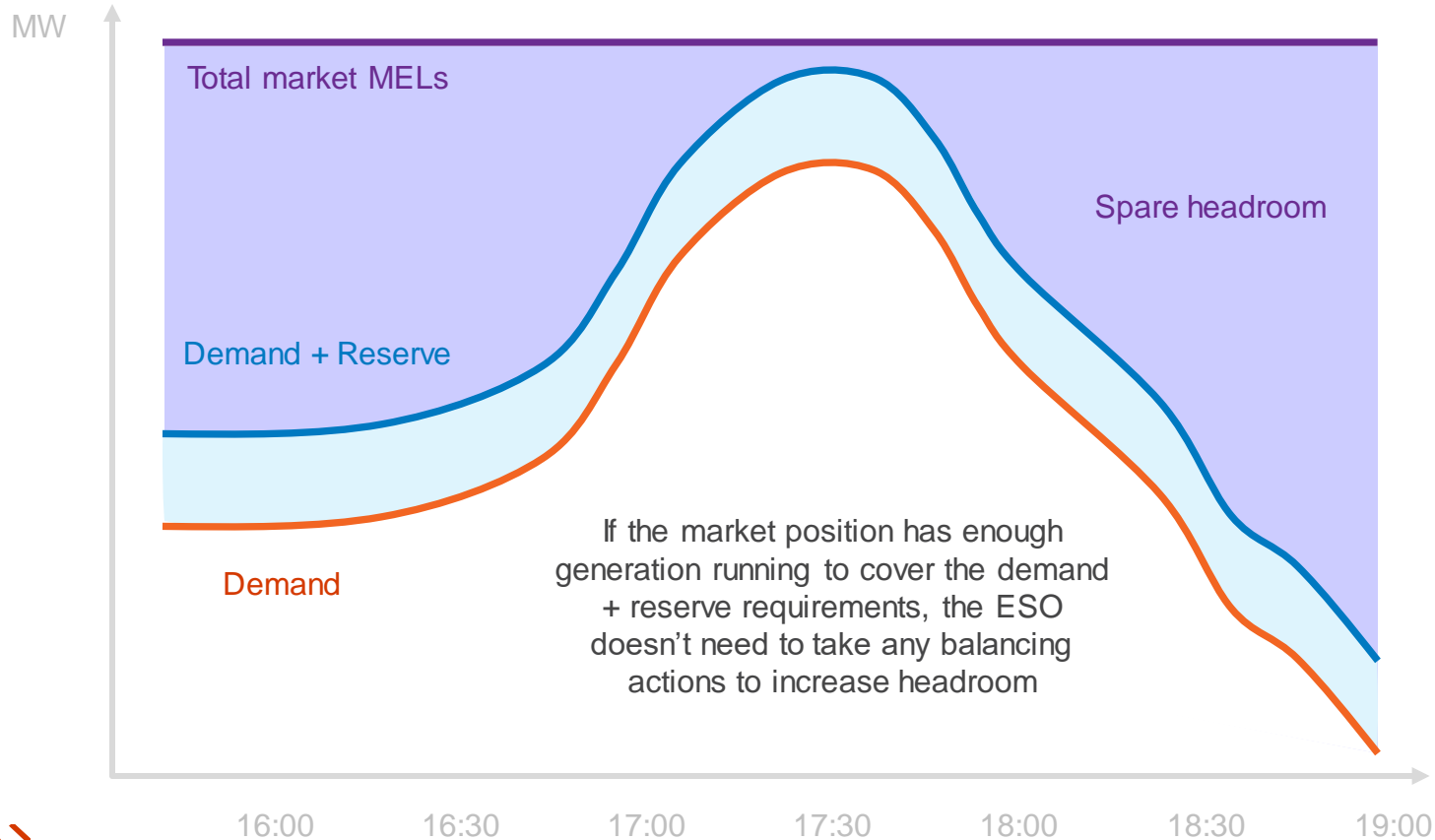
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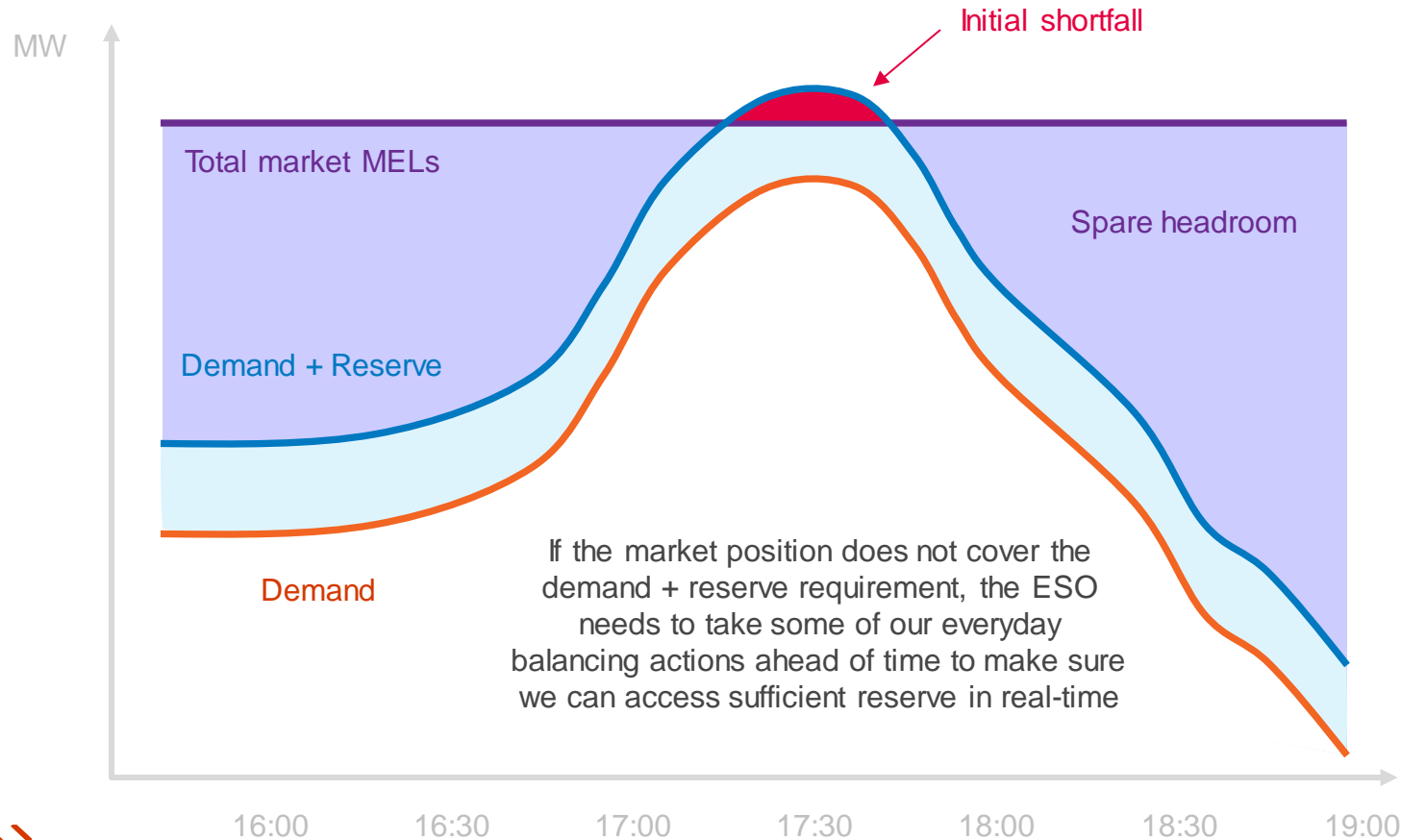
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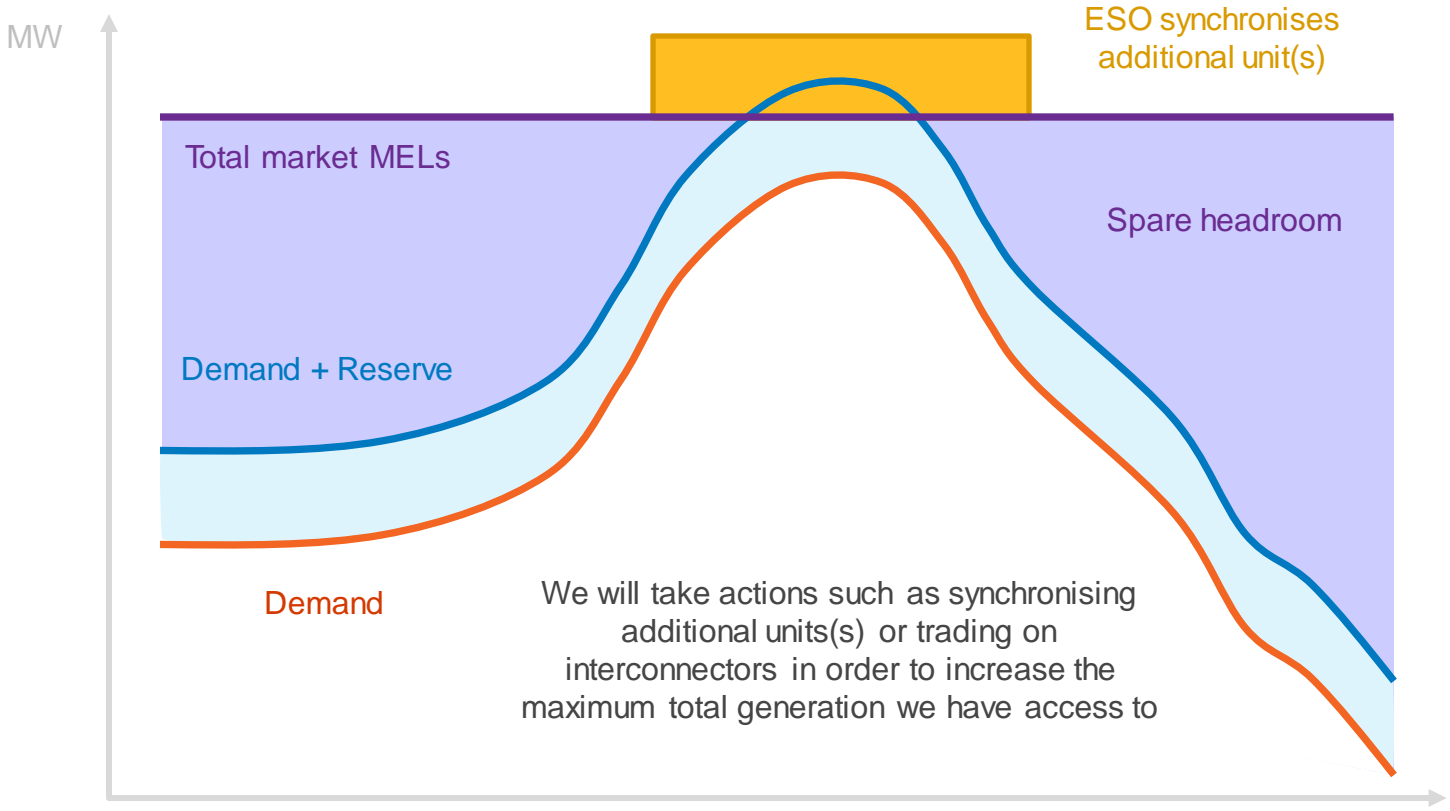
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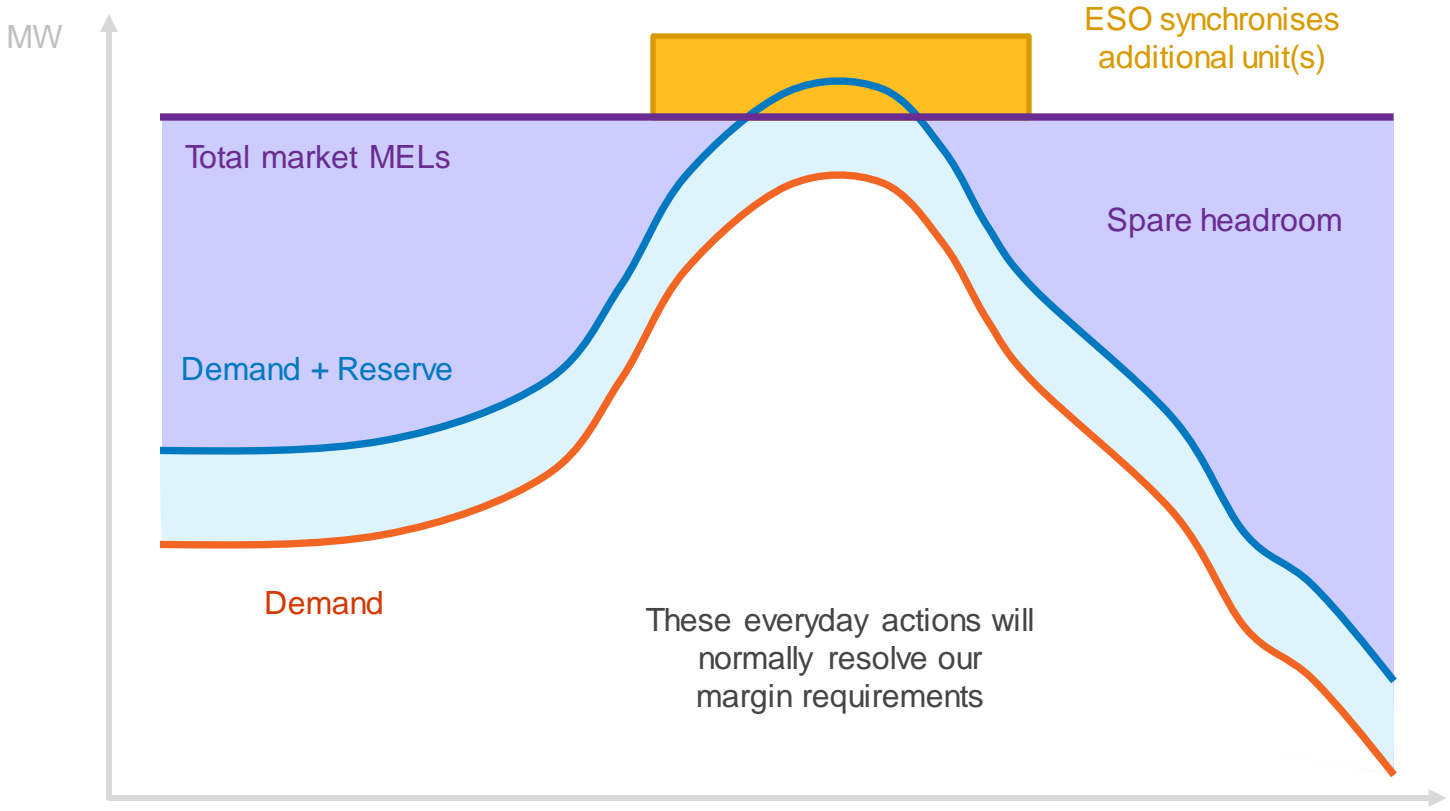
We will take actions such as synchronising additional units(s) or trading on interconnectors in order to increase the maximum total generation we have access to



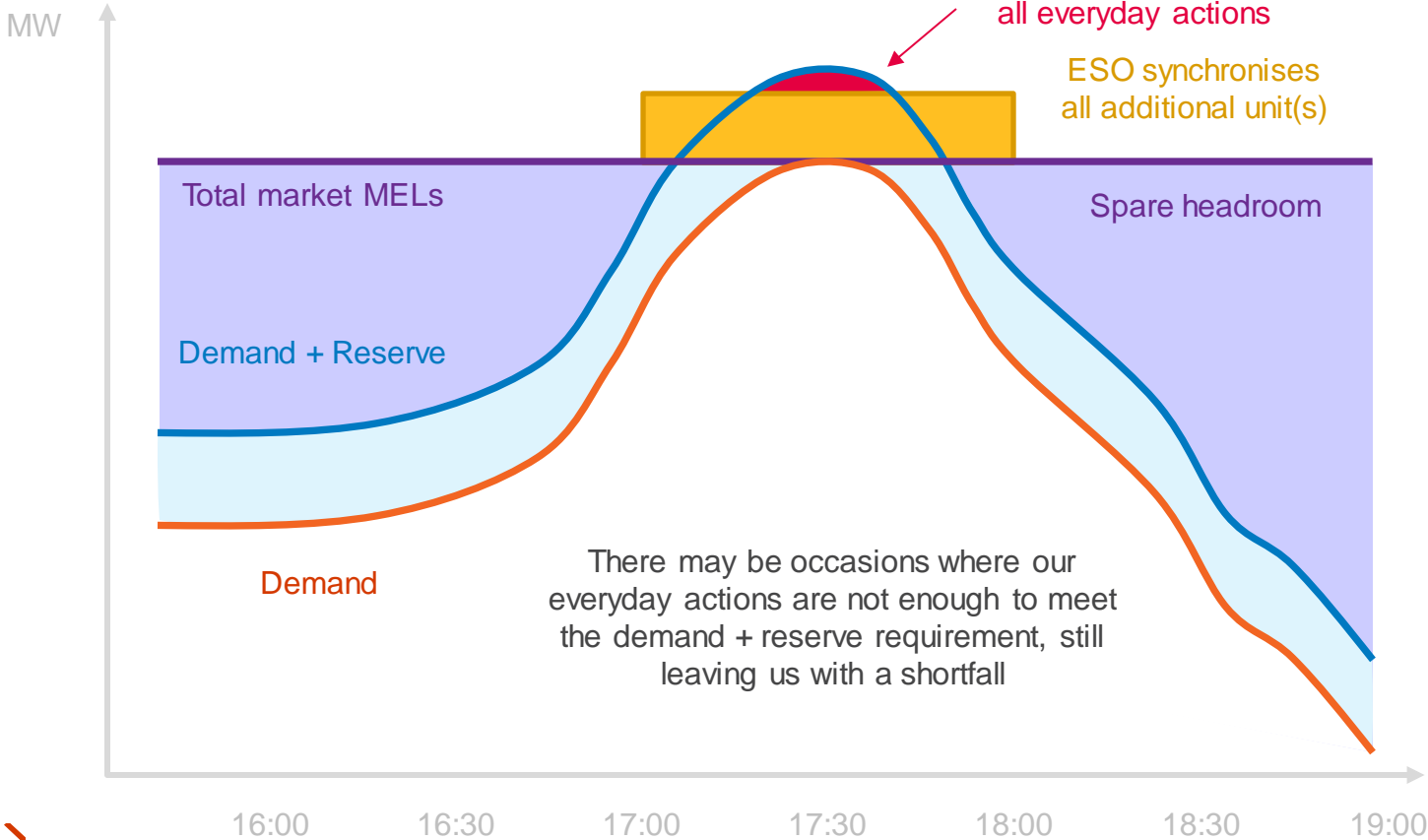
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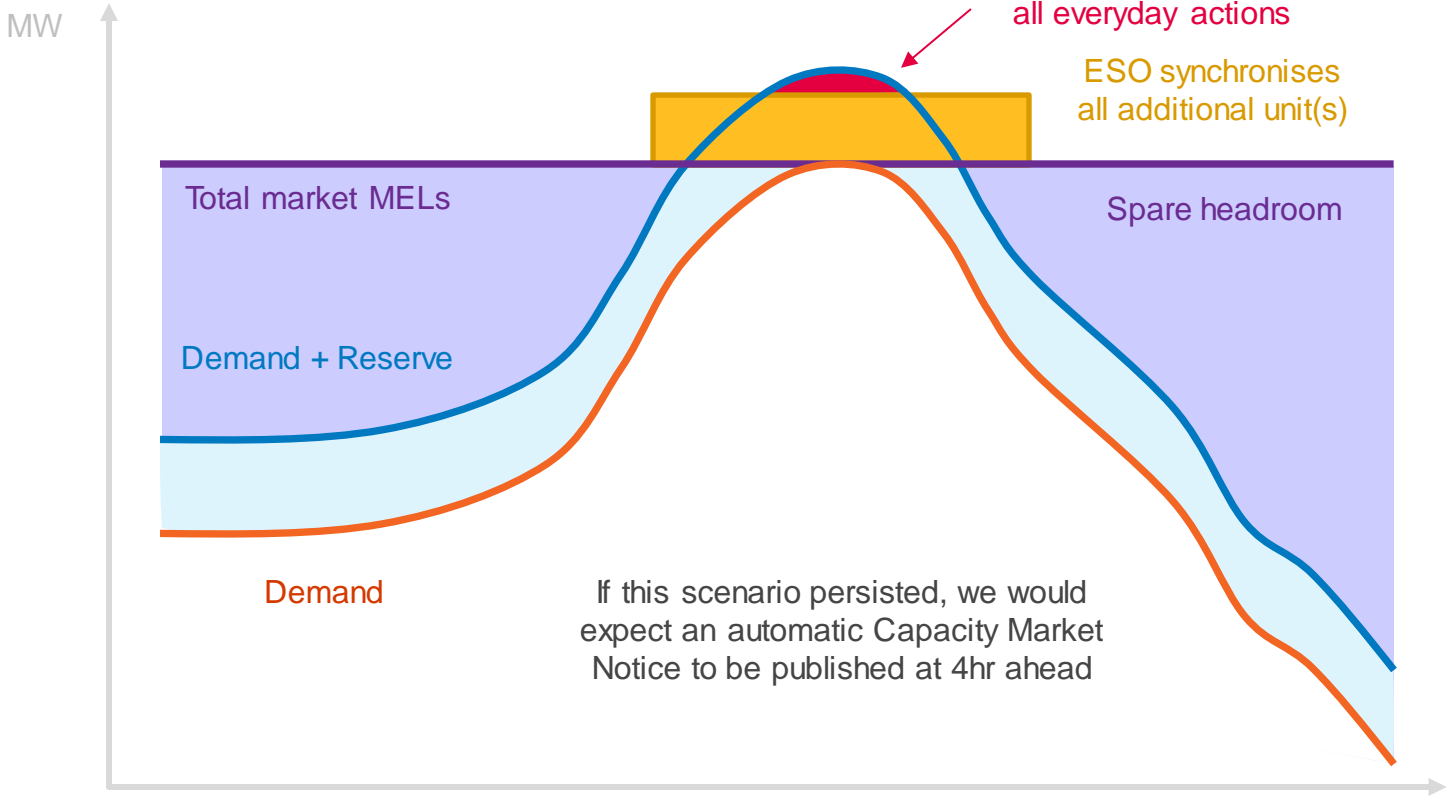
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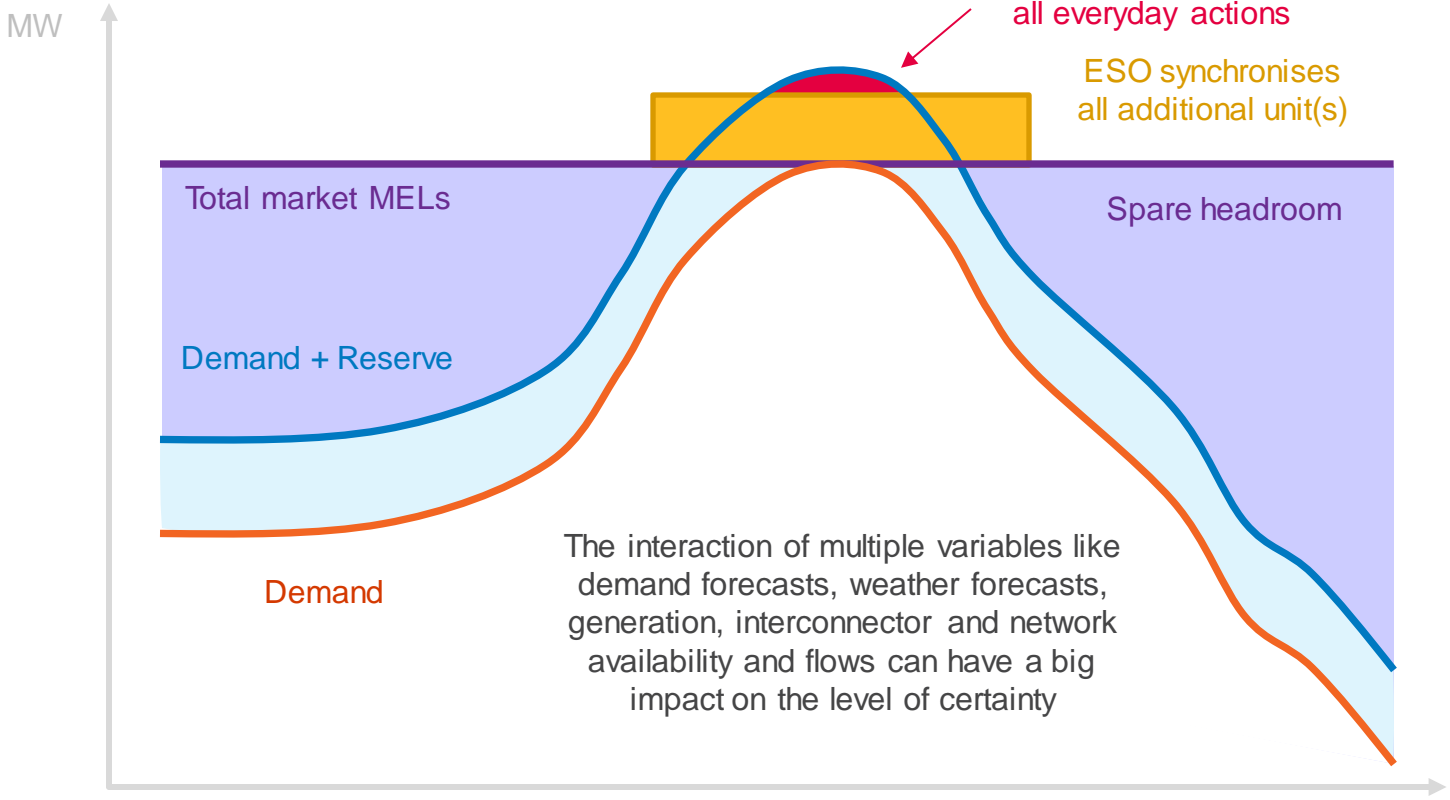
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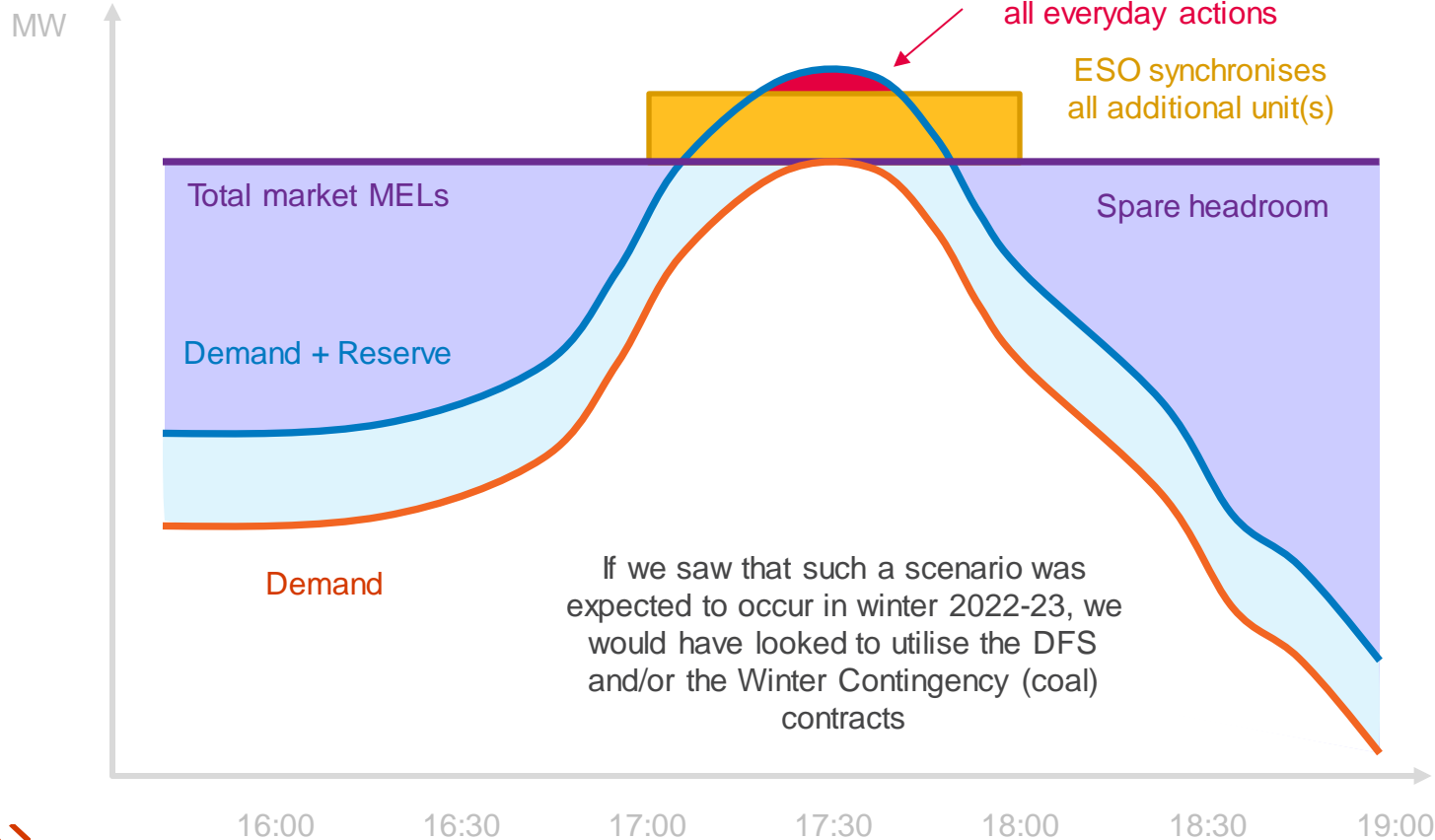
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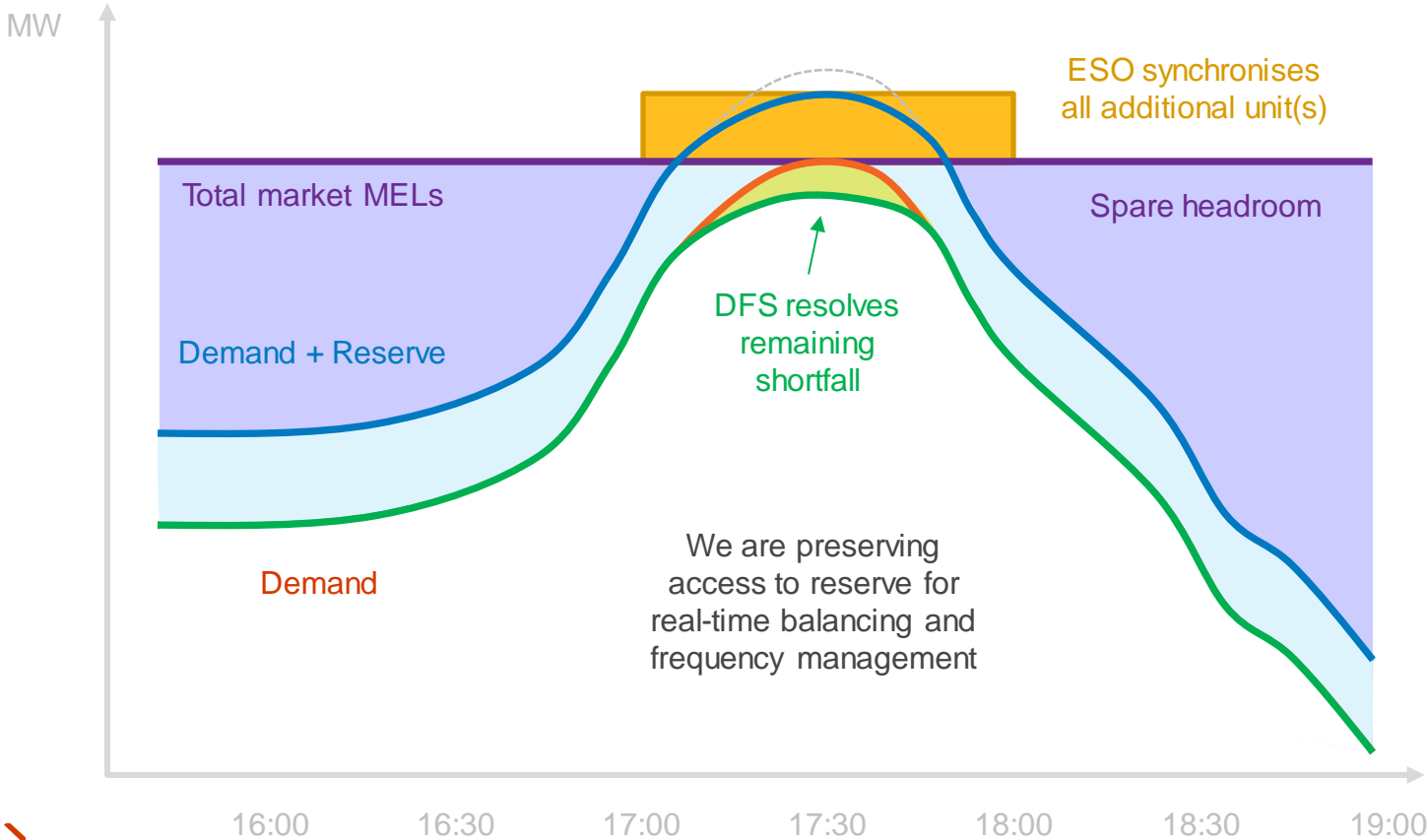
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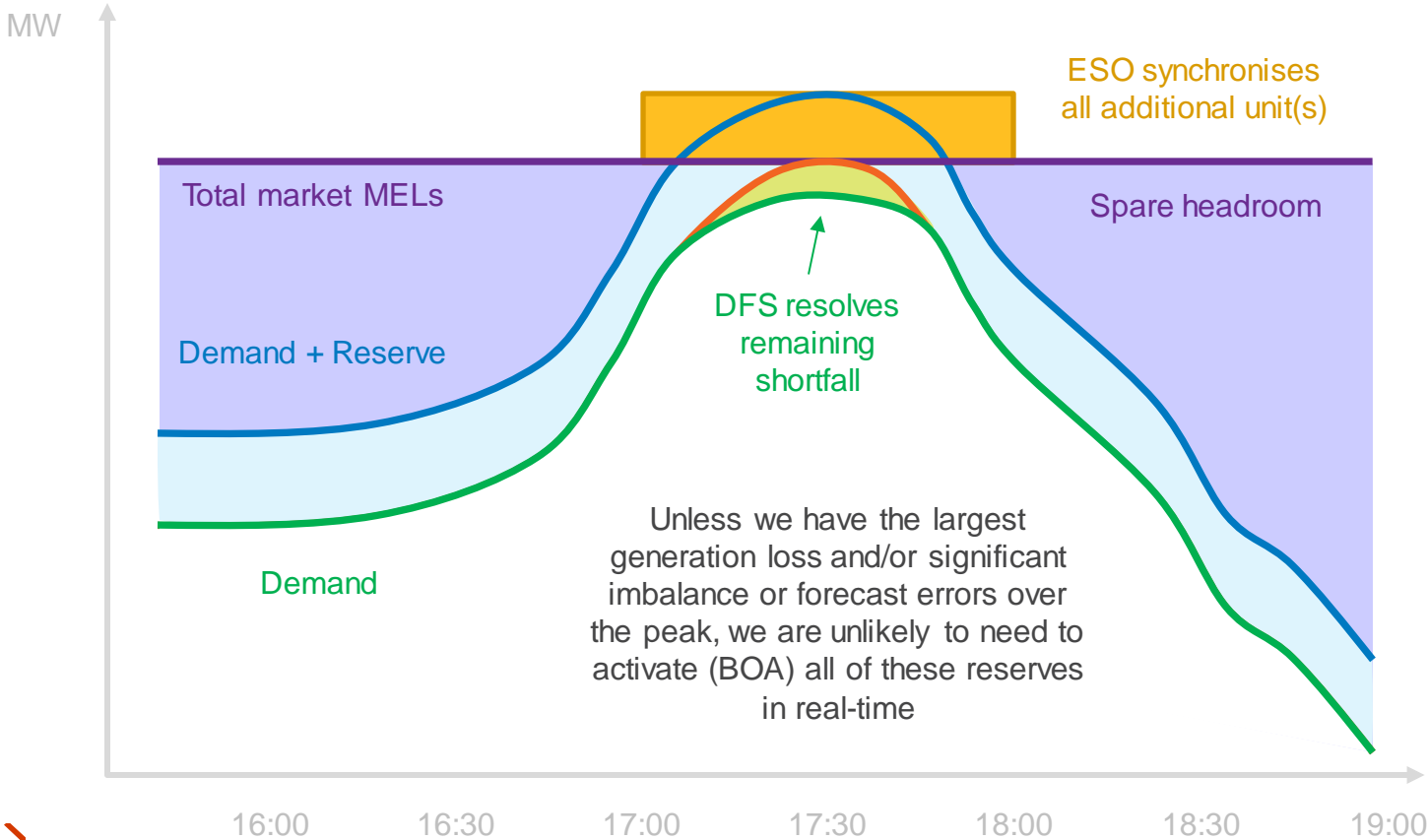
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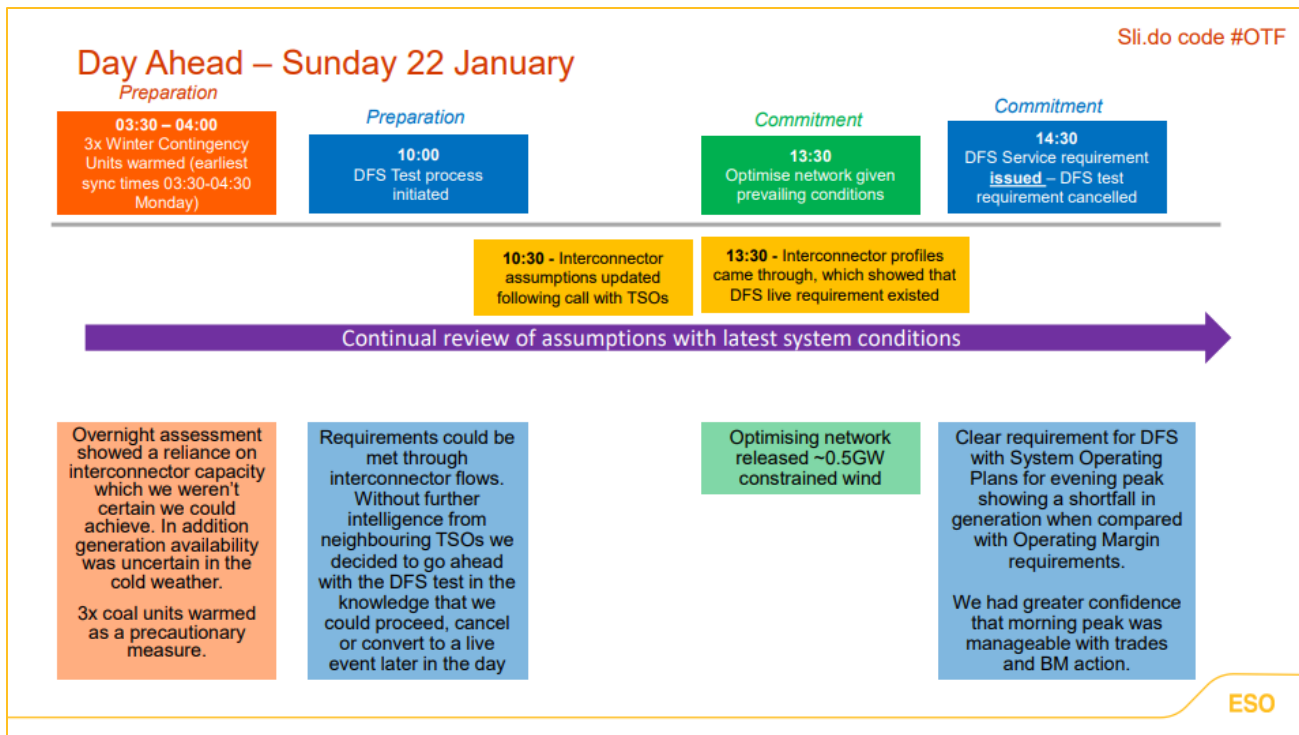
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# Operational Transparency Forum



ESO Operational Transparency Forum – 25 January 2023

Slides: <https://www.nationalgrideso.com/document/275101/download>

Recording:

[https://players.brightcove.net/867903724001/default\\_default/index.html?videoId=6319563545112](https://players.brightcove.net/867903724001/default_default/index.html?videoId=6319563545112)





# Role of DFS in winter 2022-23

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Sli.do code #OTF

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# Role of DFS for winter 2023-24



# Context

## Security of Supply & Winter Outlook

- We expect to publish our Early View for winter 2023-24 by June. This will be published alongside our review of last winter and invite stakeholder feedback through our annual Winter Outlook consultation.
- The Early View will set out our developing view of both system margin and daily operational surplus that we expect throughout winter. It will also set out further details on some of the steps ESO is taking for winter 2023-24.
- In September/early October we will publish the full Winter Outlook report.
- As ever, we will continue to monitor the situation and outlook for the electricity system and keep stakeholders up to date with any changes via the ESO Operational Transparency Forum.

## Growing, learning from, and supporting demand flexibility

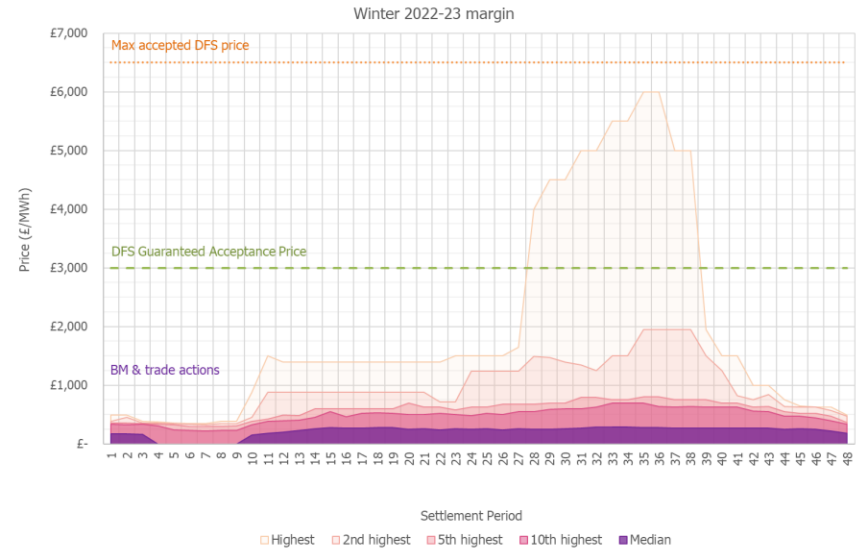
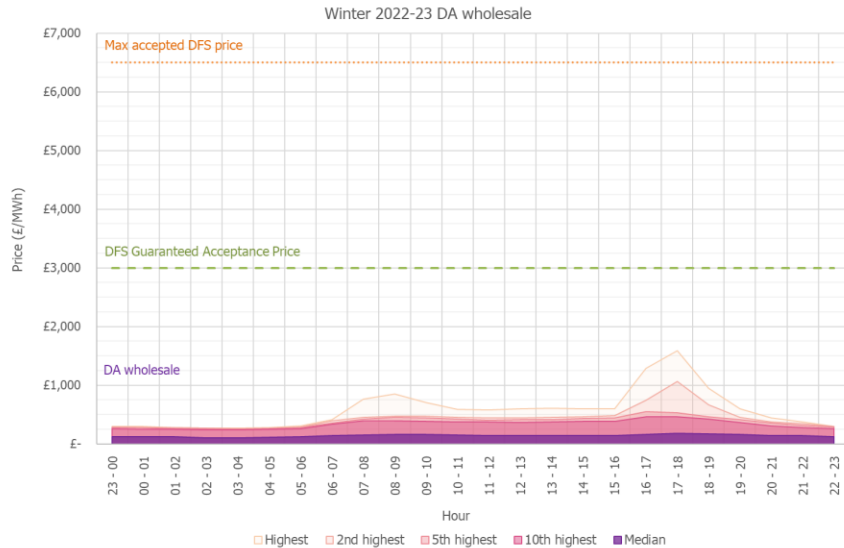
- As well as its primary role providing risk mitigation for security of supply, DFS also marked the first large-scale demonstration of demand flexibility and created good momentum in this arena.
- Ultimately, our Ancillary Services and Market-wide Half-Hourly Settlement (MHHS) will deliver the right opportunities and incentives for providers and suppliers to provide and use flexibility.
- In the meantime, there is a broad consensus across the industry, ESO, Ofgem and DESNZ that maintaining the momentum of DFS is a good thing to do to facilitate this transition and to enable and grow the role of flexibility, while acknowledging that it is still a relatively new and immature service that needs to build for the future and champion and protect end consumers.

## Evolving the role of DFS

- The 2022-23 DFS market was primarily set up to maximise volume for security of supply, with most capacity coming from one provider. That means there has been little price discovery or competition to date.
- The DFS needs to cater for a wide range of total potential supply, both small (a few tens of MW) and large (hundreds or thousands of MW), to make sure the ESO can dispatch how much it needs, when it needs it.
- Prices in the wholesale market and Balancing Mechanism were generally much lower than the £3,000/MWh Guaranteed Acceptance Price in winter 2022-23, and there are questions about the viability of an in-merit commercial service



# DFS vs. BM vs. DA wholesale prices



- Day Ahead wholesale prices have been well below the £3,000/MWh Guaranteed Acceptance Price (GAP) all winter
- Despite this, we have seen other parties pursue their own commercial versions of demand flexibility

- Real-time margin prices have only exceeded the GAP on one day this winter (12th Dec 2022), and nine-times in the previous winter
- Typical margin prices have been £250-£300/MWh, around 1/10th of the GAP



# Aims for DFS for winter 2023-24

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## Potential aims

- Maximise the volume participating
- Make the service a viable proposition for providers
- Make the service a viable proposition for consumers
- Create confidence on volume that will be delivered
- Maintain confidence on volume that will be delivered
- Confidence in pricing assumptions and price discovery
- Incentivise early entry to market
- Incentivise continued participation in the market
- Test the end-to-end process
- Improve the end-to-end process
- Bridging the gap to Market-wide Half-Hourly Settlement

## Relative importance of each aim

We are deliberately building in flexibility to the service terms and processes, so that we can use DFS to best meet these aims, particularly the balance between maximising volume and price discovery.

We will publish final details on how and when we expect to use DFS at the time of the Winter Outlook Report.

# Role of DFS for winter 2023-24

- We propose that DFS should continue as an enhanced action for winter 2023-24
- This allows the opportunity to focus on maximising volumes if required
- It also allows us to deliver both test events and, where necessary, live events
- By doing so, we can also continue to learn about demand flexibility, incentivise new demand flexibility, and help to bridge to gap to Market-wide Half-Hourly Settlement and entry in to our Ancillary Services

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# Beyond winter 2023-24

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## Demand Flexibility Service

- For winter 2022-23 we set the end date for the Demand Flexibility Service on 31 March 2023
- This was to provide certainty about the time limited nature of the service, given the inherent and acknowledged limitations of a service that was designed, developed and implemented in such a short timescale
- We are now moving to a phase where DFS is also focusing on the transition of new demand flexibility in to our Ancillary Services and to participation in the incentives of Market-wide Half-Hourly Settlement
- As such, we think it is right to proceed without a defined end date to the service, but instead to build in flexibility to the service terms where appropriate and to deal with bigger future changes as consultations and updates to the existing service, rather than a brand new service each time
- This will bring more confidence to providers, end consumers and the wider industry in the role of DFS

## Wider ESO activities

- Ancillary Services Reform: *e.g. Quick Reserve, Slow Reserve, and Static Recovery*
- BM Electric Vehicle trials and innovation projects
- Ofgem call for input considerations - "Future of local energy institutions and governance" & "The Future of Distributed Flexibility"



# Deep-dive sessions





# Summary of this session

## Call for input: industry priorities

- 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
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## Role of DFS for winter 2023-24

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## Different aims and need for flexibility

- We are deliberately building in flexibility to the service terms and processes so that we can use DFS to best meet the potential aims, particularly the balance between maximising volume and price discovery
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# Next deep-dive sessions

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## 1) Call for input & role of DFS

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# Contact us

[demandflexibility@nationalgrideso.com](mailto:demandflexibility@nationalgrideso.com)

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