Public

Mandatory Frequency Response Reform

Intro and Engagement Plan

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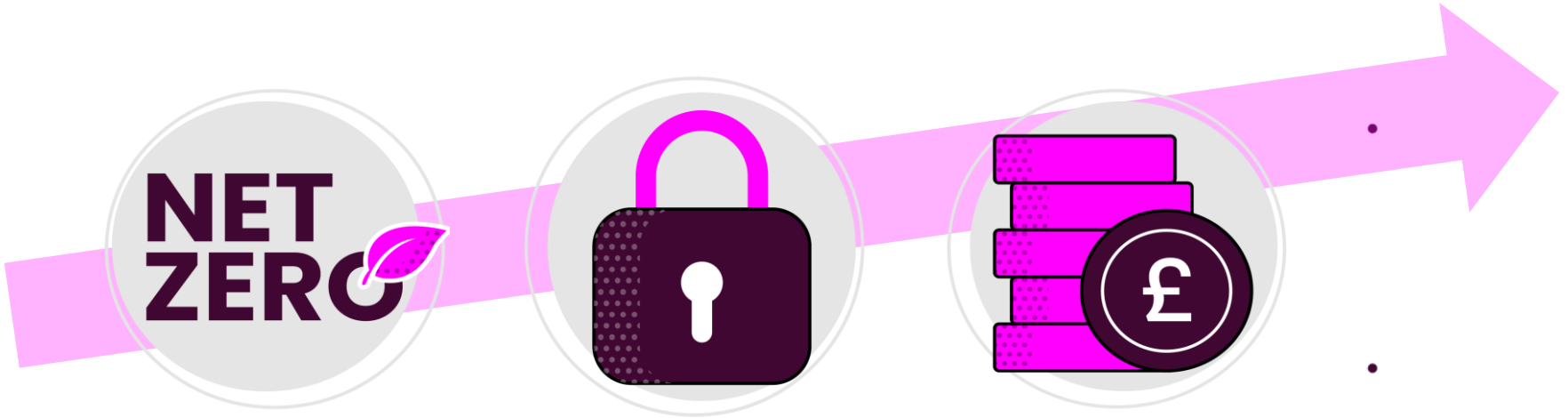
Mandatory Frequency Response Reform

1. Review current arrangements
2. Future challenge: short-term volatility
3. Avenues we’re exploring
4. Call to engage

Mandatory Frequency Response Reform



Enable the transition to net zero

Maintain system security

Keep energy affordable for all

Mandatory Frequency Response Reform

2024

- Develop needs case
- Begin engagement to seek input
- Outline potential solutions

2025

- Solution analysis and assessment
- Service Design
- Key enabler: Initiate code change process

2026

- Formal consultation and development
- Key enabler: Frequency Response migration to OBP complete

2027

- Updated service(s) go live

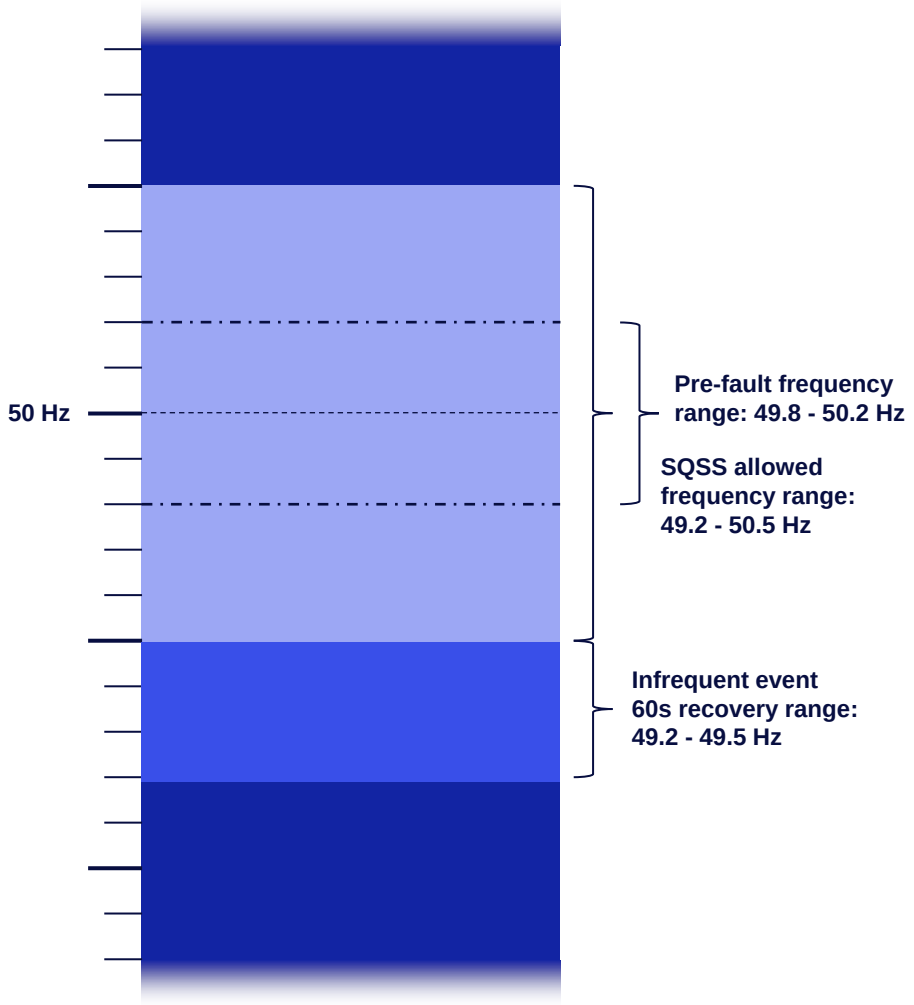
Continuous engagement

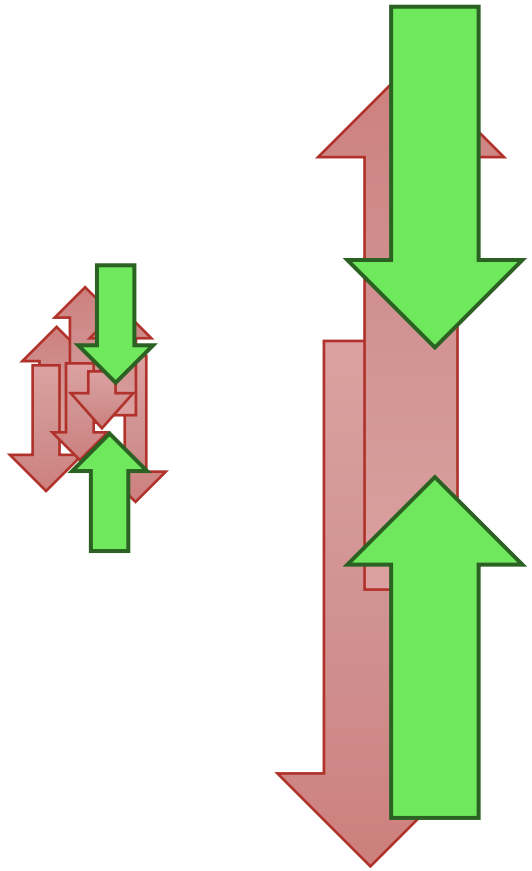
Continuous improvement

Some context

Frequency management:

Standards and policy





Volatility Faults

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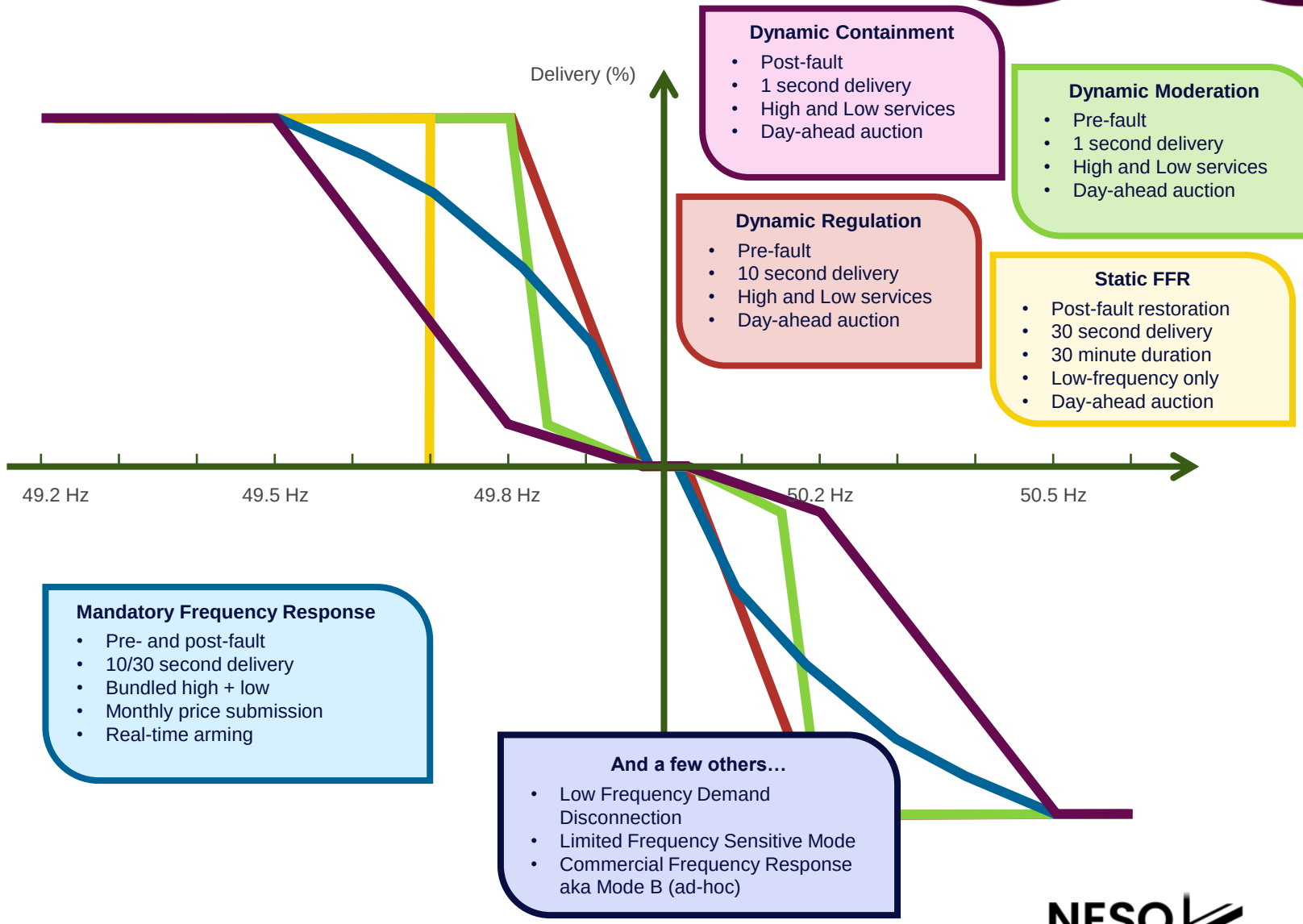
Some context

Frequency services in 2024



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Some context

Where are we headed?

MFR	Regulatory compliance: reform or replace Service design: review Mandatory element: retain
Dynamic services (DC/DM/DR)	Market maturing well Continuous improvement Vehicle for meeting future needs
Static Response	Exploring co-optimisation and stacking Reform or replace existing service (SFFR) Separate engagement planned
Commercial Response Services	To be phased out

Why mandatory?

- Market of last resort
- Locational needs
- System restoration

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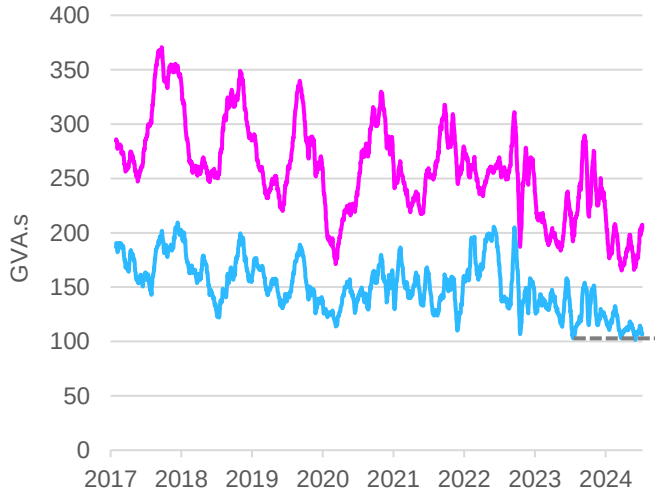
Some context

Post-fault challenge:

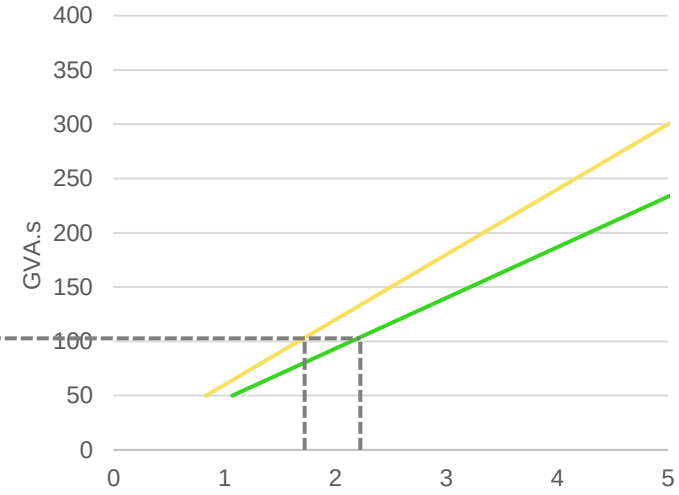
The need for speed

Inertia continues to fall



Market delivered inertia (GVA.s) maximum (pink) and minimum (blue) 30-day rolling average

Leaving less reaction time



Maximum useful reaction time (seconds) for post-fault response vs inertia following:
1,400 MW loss (green)
1,800 MW loss (yellow)

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Some context

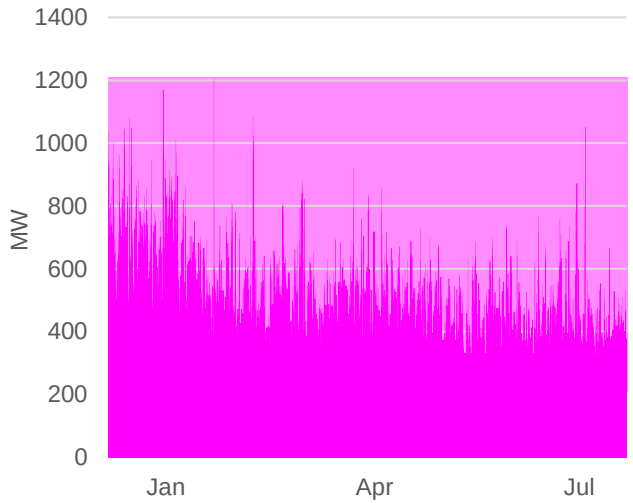
Pre-fault challenge:

Living with uncertainty

Why?

Weather	5 min 500 MW
Demand	15 min 350 MW
Faults	<1 min 100 MW

How often?



Pre-fault response requirement (MW's) per settlement period Jan-Jul 2024

Problem Statement

This is a difficult problem, and we welcome all perspectives.

Let us know your thoughts via Q&A or webinar feedback.

Please request a 1:1 discussion to input in more detail.

How might we balance the highly variable real-time response requirement with the need for robust post-fault containment?

Opportunities

These are the possibilities we've already begun looking at internally. None of them are set in stone (yet) and we welcome input on these and other opportunities.

Please request a 1:1 discussion to input in more detail.

Real-time Dx

Shorter Service Windows

Response Energy Payments

Locational Procurement

Real-time Dx

Procure the new Dynamic Response services in near real-time (2 minutes' notice)

Current Arrangements

Dynamic Response services are procured at day-ahead.

MFR is procured in real time (2 minutes' notice)

Value

Additional options in real-time would lead to more efficient procurement.

Providers have greater cost certainty?

Opportunity

Access to more precise frequency response tools in real-time.

New service? Enhance existing service?

Challenges

Provider impact of real-time arming/disarming.

Lots of messy practical details.

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Real-time Dx

Procure the new Dynamic Response services in near real-time (2 minutes' notice)

- Would this require separate pre-qualification?
- How should units declare their availability?
- How far in advance should prices be submitted?
- How granular should price submission be?
- Should units be able to limit arming periods?
- How would real-time arming stack with other services?
- Etc, etc

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Shorter Service Windows

Review the Service Window for day-ahead procurement

Current Arrangements

Day-ahead procurement is at EFA block granularity (4-hour service windows)

Response requirement varies at finer resolution.

Value

NESO can clearly signal our requirement.

Providers have more control over their offer.

Opportunity

Reduce the duration of service windows.

Likely to 30 minutes, to align with wholesale market, Quick Reserve.

Challenges

Increased complexity and workload for market participants?

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Response Energy Payments

Delivering response (usually) means delivering or consuming energy. Should that energy be paid for?

Current Arrangements

MFR units have response energy volumes settled at market price +/- 25%.

Dynamic Response units have no energy payments

Value

Removes risk around frequency outturn (and corresponding delivery volumes)

Opportunity

Extend the MFR arrangement (or something very similar) to Dx units

Challenges

Do we need the same arrangements for day-ahead and real-time?

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Locational Procurement

Day-ahead procurement takes account of asset location.

Current Arrangements

Response units inside active network constraints make reduced or even no contribution to frequency management.

Value

Avoids procuring additional response in real-time.

Sends investment signals for response market.

Opportunity

Add locational restrictions to day-ahead auction to represent this devaluation.

Challenges

Would need to ensure fair, transparent methodology for setting location rules.

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What's Next?

Feedback and 1:1 calls

Second webinar in December

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Any Questions?