Public

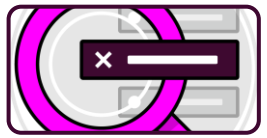
# Mid-Term reactive power market

13 November 2024

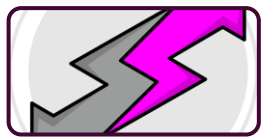
NESO
National Energy System Operator

# Housekeeping

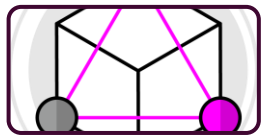

There is a Q&A session at the end, please submit questions through the teams Q&A function



Please be mindful that we are still seeking answers



We welcome constructive comments



We wish to collaborate

Please ensure cameras microphones are disabled to protect the bandwidth quality

| Workshop norm | *Listen to each other* | *Engage in the process* | *Defer judgement* | *Seek clarity* |
|---|---|---|---|---|



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# Today's objectives

Provide an update on the reactive power market

Share our latest thinking on the design for the mid-term reactive power market

Signpost opportunities for market participants to provide feedback

Understand your thoughts

**Workshop norm**

*Listen to each other*

*Engage in the process*

*Defer judgement*

*Seek clarity*

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# Today’s Agenda

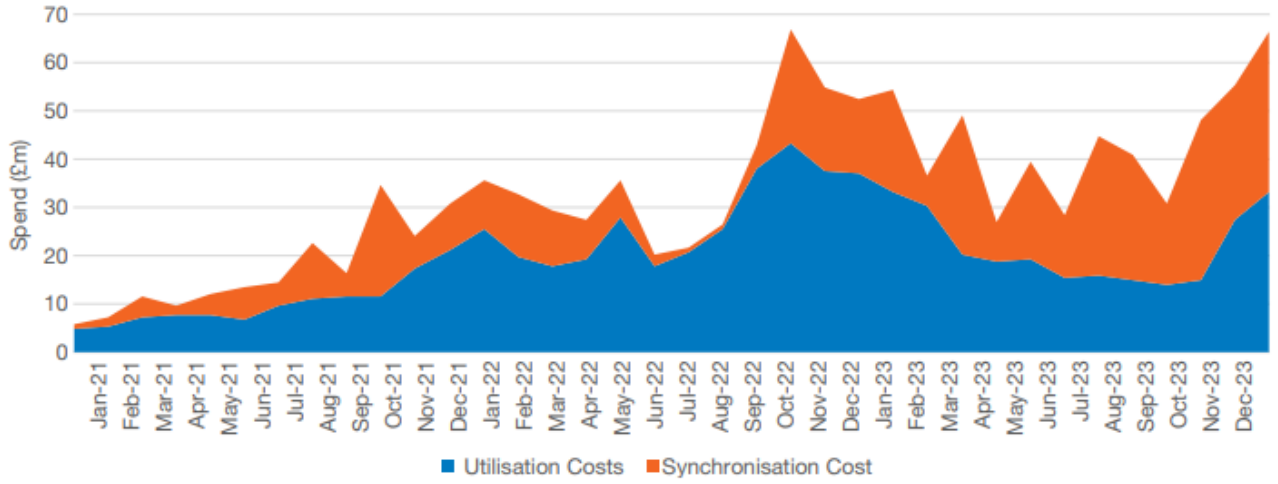
Future of Reactive Power Project:

1. Why does NESO need a reactive power market
2. Reactive Power: The wider landscape
3. Market deep dive
4. Hearing from you
5. Market Design Framework
6. Next steps
7. Questions

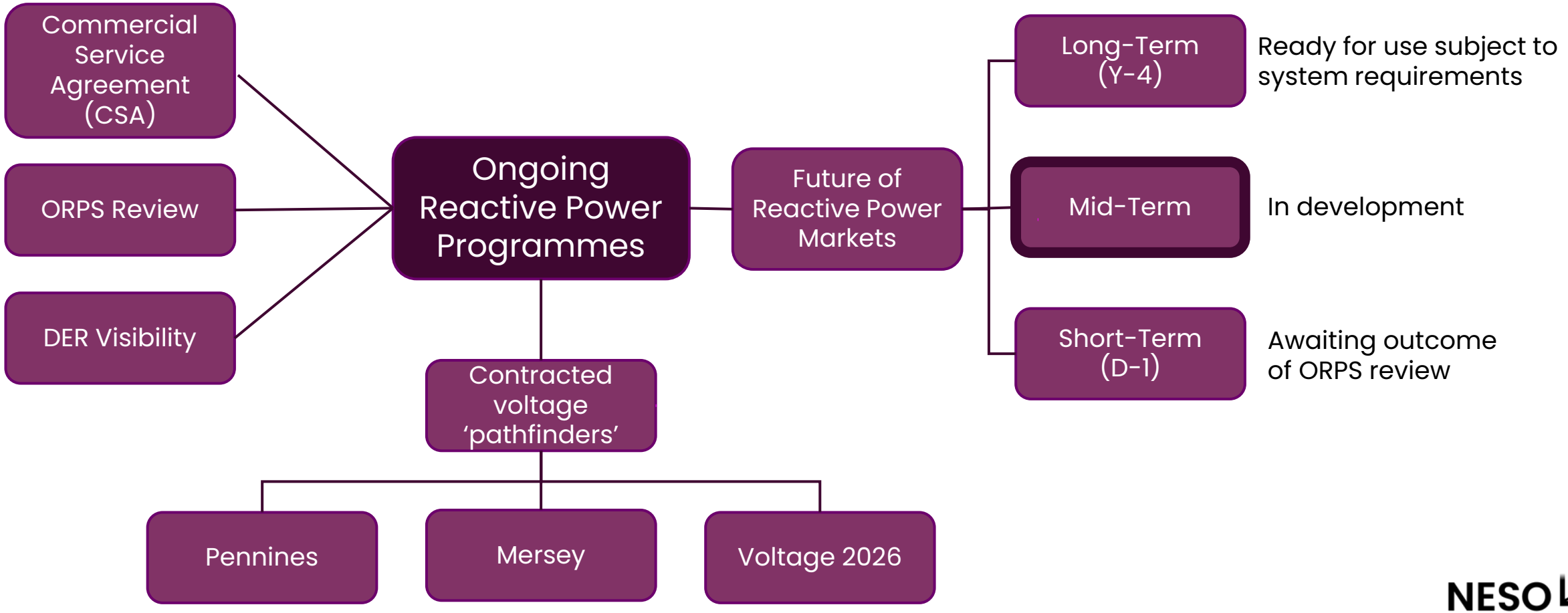
# Why does NESO need a reactive power market?

- Traditional dispatchable generation is expected to decline as the power sector decarbonises
- NESO intervention to manage voltage is increasing which is leading to higher costs
- Reactive power is a highly locational product and we want to unlock new capability to meet our reactive needs
- NESO is aware of additional capability on the network capable of providing voltage support
- NESO often instructs fossil-fuel generation to manage voltage issues which is contrary to zero-carbon system operation ambitions

VT Figure 4: Synchronisation and utilisation costs 2021-2023



# Reactive Power: The wider landscape



# Mid-term Reactive Power: Market Deep Dive

1. Purpose of the mid-term market
2. Technical characteristics
3. Tender procedures
4. Contract format
5. Routes to market
6. Payment mechanisms

# Purpose of the mid-term reactive market

- Access additional reactive power capabilities from existing assets
- Provide competitive alternatives to the balancing mechanism
- Consolidate existing routes to market – making it easier for market participants to provide services
- Access reactive power from assets which can provide this service independent of megawatts.
- Provide better signals to market on what and when we want to procure

# Technical characteristics

- Static and/or dynamic
- Absorption and/or injection
- Not to cover N-1 largest loss
- Technologically agnostic
- 0MW export, independent of MW output
- Have an existing connection
- Directly connected to transmission network
  - >275kV in England and Wales
  - >132kV in Scotland

# Tender procedures and contract format

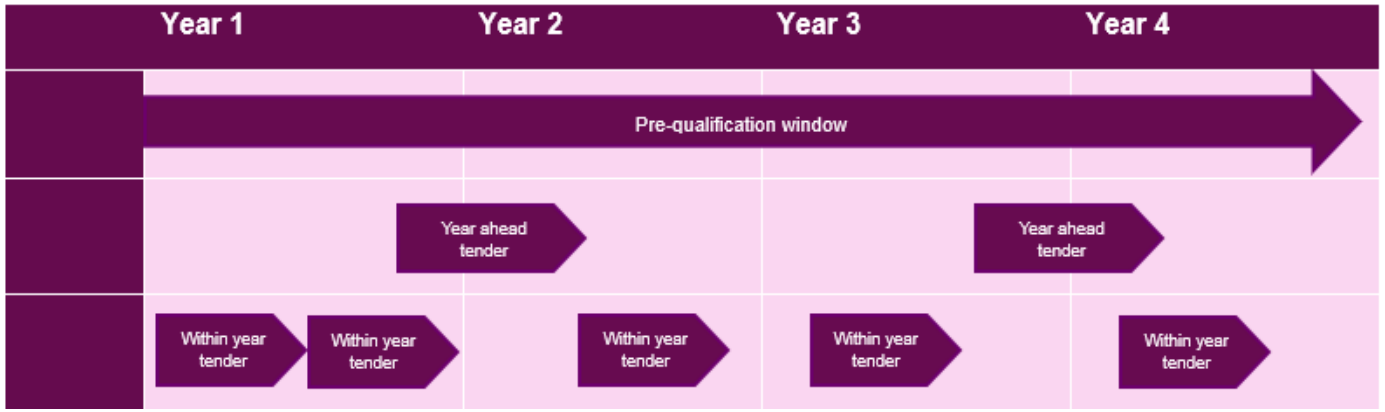
## Tender procedures

- We are considering a **"dynamic market" style*** procedure for the mid-term reactive power market

## Contract Structure

- A framework-style agreement
- Similar in structure to the Constraint Management Intertrip Scheme
- Agreement entered into post successful pre-qualification
- T&C only agree once, with scope for amends
- Agreements entered per solution

*Indicative and hypothetical visual*




* Note: when we say dynamic market in this context, we do not mean dynamic reactive power

# Routes to market


**Year-ahead process**

- Contracts awarded a year before service delivery
- The contract term for service delivery would be at least 12-months.
- Process would be run subject to there being a relevant requirement and this being the most appropriate route to market

**Within year process**

- Conducted within the same year as the service requirement.
- Contract duration for service delivery could be any duration up to 12 months
- Process would be run as often as required, subject to there being a relevant requirement and this being the most appropriate route to market

**Direct award**

- Allows NESO the ability to “directly award” to a qualified market provider, subject to some defined criteria. TBD, but indicatively:
  - Minimal time to complete either above processes
  - Duration of need is short
  - Requirement is very locational with very limited / few providers

# Payment mechanism

- Availability fee £/Mvar/SP
- Pay-as bid
- We are exploring various indexation options
  - No indexation
  - CPI
  - Energy prices
  - Indexation is set on a tender-by-tender basis rather than at the overall market level

# Hearing from you

1. Request for Information (RFI)
2. Routes to engagement

# Request for Information (RFI)

- Following this webinar, we will shortly be releasing a Request for Information (RFI)
- NESO are particularly interested to hear from parties that can provide reactive power services and are interested in a mid-term reactive power market.
- We welcome market participants to provide their thoughts and feedback through this RFI.
- Information received will be used to refine NESO's understanding of the assets that can provide reactive power and to support the design of the overall mid-term market.
  - Any alternative ideas or proposals will be considered as part of the NESO market development process.
- **Please Note:** This is a Request for Information (RFI) only and not part of a formal tender process. **A contract will not be awarded through a response to this RFI.**

# What we want to know from the RFI

| | | | |
|---|---|---|---|
| How many assets do you have | Asset technology types | Reactive power capability | Where assets are connected |
| How many providers are interested in this market | Feedback on the indicative market design | Any perceived barriers or concerns with the indicative design | Any additional thoughts/ideas that we have not covered |

# RFI: How to participate

- Shortly after this webinar we will publish the RFI on the NESO website
- We will share the publication of the RFI through NESO's newsletters
- We will also contact all attendees of today's webinar by email with links to the published RFI, inviting you to review and respond
  - If you do not wish to be contacted by NESO about the RFI please let us know
- The RFI will be open for responses for two weeks
- Details on how to respond will be included in the RFI documentation

| Key Milestone | Date |
|---|---|
| RFI Launch | By 15 November 2024 |
| RFI Deadline | 29 November 2024 |

# Engagement channels: Reactive Power Market

Queries: should you have any queries please email box.voltage@nationalenergyso.com

Respond to the Request for Information to provide feedback.

121 Conversations: NESO might follow up with market participants about their RFI responses through follow up 121 calls.

Attend and engage in any future webinars.

# The Market Design Framework

1. How we will be appraising the market design

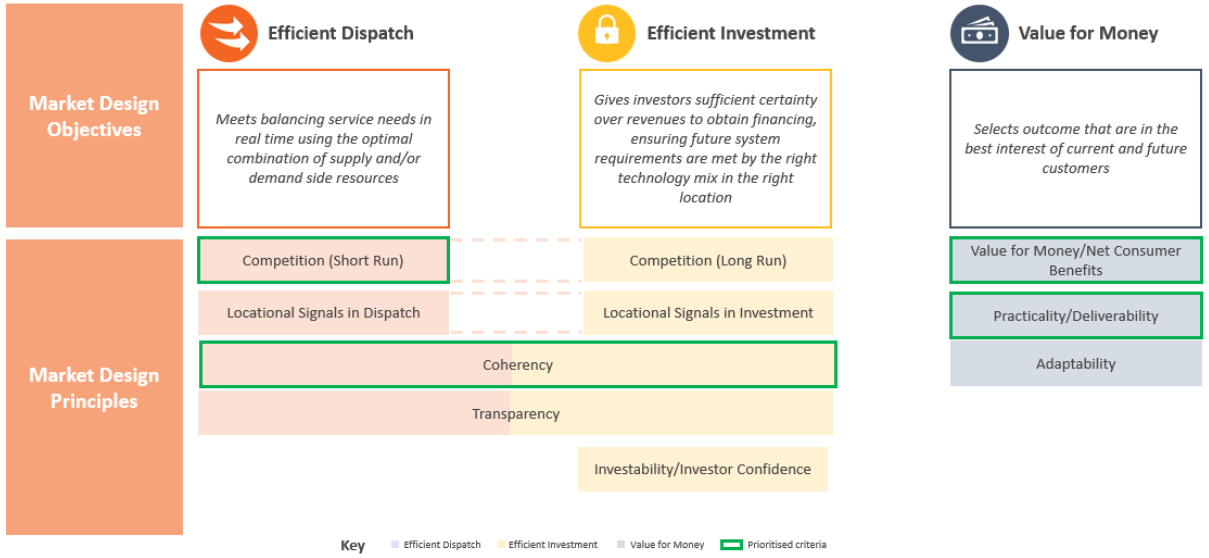
# The Market Design Framework: Appraising the proposed market

Accompanying industry feedback, NESO's will assess the proposed mid-term reactive power market using the Market Design Framework.

This framework consists of three key objectives, and the principles which underpin them.

Whilst all principles are important, we have placed an emphasis on:

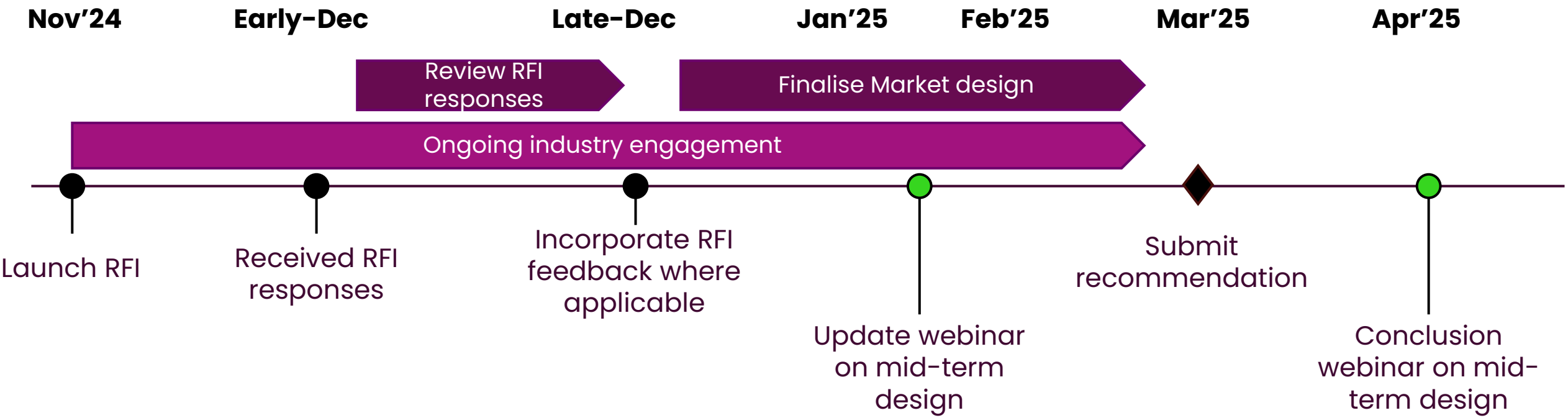
- Net consumer benefit
- Competition (Short run)
- Coherency
- Practicality / deliverability



# Next steps

NESO’s next steps and milestones

# NESO's Next steps



# Q&A

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