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Frequency Risk and Control Report (FRCR)

2025 edition

Report consultation webinar

19th Match 2025

We will start at 13:02

Agenda

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- Welcome & housekeeping
- Introduction to FRCR
- FRCR 2025 Policy Recommendation
- Assessment & Results
- Future Considerations
- Consultation Overview & Timelines
- Q & A

Housekeeping

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- You have been joined in listen only mode with your camera turned off.
- To ask your questions live please go to Slido **event code #FRCR**. Ask your questions as early as possible. Slido page remains open until this webinar closes.
- Please provide your full name and organisation. Questions from unidentified parties will not be answered.
- Questions will be answered in the upvoted order whenever possible. We endeavour to answer as many as possible during the session. We may need to take some questions away.
- Slides will be published after the webinar. A full Q&A document will be published by Friday 28th March.
- Please contact **box.sqss@nationalenergyso.com** for feedbacks and other comments.

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Introduction and FRCR 2025 Recommendation

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Introduction

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- The Security and Quality of Supply Standard (SQSS) requires NESO to produce a Frequency Risk and Control Report (FRCR).
- FRCR sets out NESO's general policy for managing frequency on the GB electricity system.
- We produce an annual report and submit to Ofgem for approval,
  - FRCR 2021 established the baseline for evaluating the cost versus risk in frequency management
  - FRCR 2022 evaluated the consumer benefits of securing simultaneous events
  - FRCR 2023 assessed the benefits of changing the minimum inertia requirement – The recommendations is reducing minimum inertia from 140 GVA.s to 120 GVA.s.
  - **FRCR 2024** assessed the benefits of changing the minimum inertia requirement and secure additional risks beyond BMU-only. The recommendations are to maintain minimum inertia requirement at 120 GVA.s and purchase extra 100MW of DC-Low to **further mitigate some residual risks**.

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FRCR 2025 scopes

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FRCR 2025 Policy investigates:

- System risks and cost benefits from **reducing minimum inertia from 120 GVA.s to 102 GVA.s**.
- Benefits of **securing the additional risks** from BMU+VS and simultaneous events.
- Continue covering timeline of **2025 – 2026** and **2026 – 2027** as requested by Ofgem in 2023.

FRCR 2025 Analysis and Report:

- Summarises **System Performance and balancing cost savings** of running the system at a minimum of 120 GVA.s.
- Review historic cascading / simultaneous events from 2019 to 2024, and re-calibrated simultaneous event likelihood.
- Incorporate NESO updated **pre-fault assumptions** including DR and DM requirements.

Webinar recording for the pre-fault frequency control modelling can be found here.

Methodology

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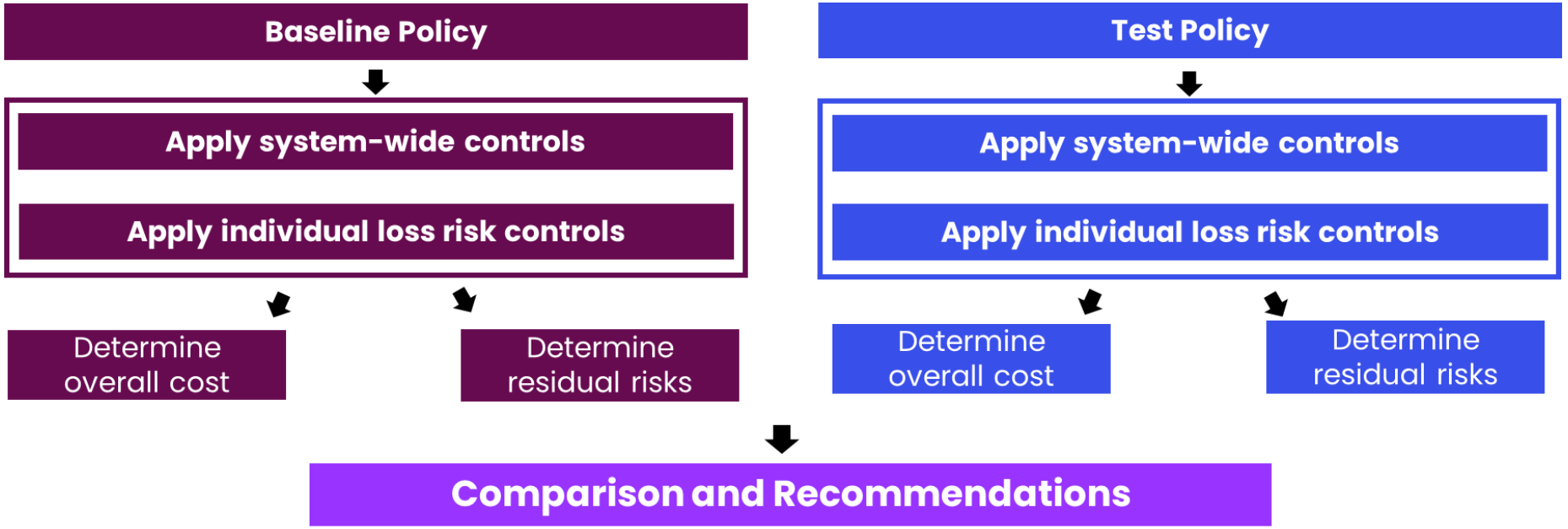
High-level principle of FRCR methodology



System-wide controls refers to actions benefits the whole system, i.e**. increase inertia** and **holding response**

Individual loss risk controls refers to the actions only mitigate one individual risk, i.e. **reducing loss size**

Two webinar recordings available if you want to know more about methodology

- Webinar 1 – Framework and Methodology
- Webinar 2 – Model and Data

FRCR 2025 Recommendation

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The 2025 edition of FRCR assesses the **minimum inertia requirement** and the **benefits of holding additional response**.

Key recommendations are:

- **Reduce the minimum inertia requirement to 102 GVAs.,**
- **Secure a BMU-only risks as baseline, and**
- **Consider additional DC-Low requirements to further reduce residual risks.**

We are consulting on the 2025 version of FRCR and seeking views on the proposals put forward.

In addition, we are consulting on the future scope of the FRCR and its governance.

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Assessment and Recommendation

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1. Assessment of **minimum inertia requirements**

Risk:

- Risks remain consistent around **1-in-7** years for **49.2 Hz** risk and **1-in-25 years** for **48.8 Hz** risk across different GVA.s scenarios.
- Risks have increased overall from FRCR 2024 (**1-in-27 years**) due comprehensive review of simultaneous events and the recalibration of the model as a result.
- The response holding remains at a similar level and is not impacted by the updated probability of simultaneous events.

Cost: Lower minimum inertia policy presents significant savings

Scenario	140GVA.s	120 GVA.s	110 GVA.s	102 GVA.s
Cost for system-wide controls (*NB: includes inertia and all response costs*)	£524m	£266m	£198m	£170m
Incremental saving		**£258m**	**£68m**	**£28m**

Recommendation: Reduce the minimum inertia requirement to **102 GVA.s**

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2. Assessment of **additional event categories**

Risks:

- Majority of BMU+VS risks are naturally covered by the BMU only policy.

Costs:

- BMU+VS event profile would result in a volatile requirement for DC much beyond the current market capacity and cause significant fluctuation on DC price.

Event category	Response Control	
	Residual risks	Additional costs
BMU-only	1-in-7.24 years	£0
BMU+VS (outage)	1-in-7.25 years	£14k
BMU+VS (intact)	1-in-7.26 years	£278k
Simultaneous event	1-in-9999 years	£20m

Recommendation:

secure BMU-only risks as baseline and increase DC-low requirements.

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3. Assessment of **additional DC-Low holding**

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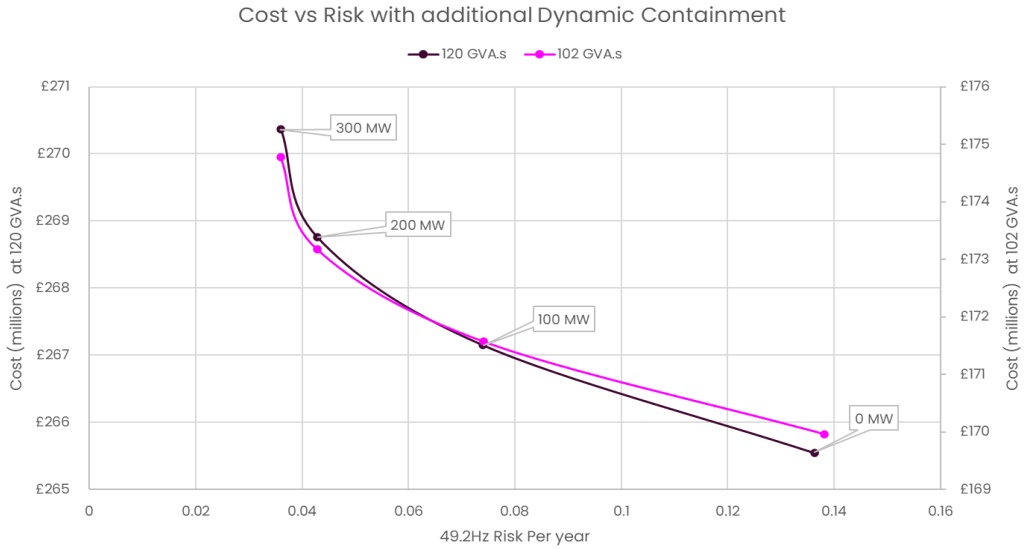
£170M to fully mitigate all **BMU only** risks under 102 GVAs inertia, resulting in residual risk of

- 1-in-7 years of 49.2Hz events,
- 200 MW of additional DC-Low at an additional £3.23m to bring that to **1-in-23 years** of 49.2 Hz events.



Option	Extra cost	Residual risk (49.5Hz)	Residual risk (49.2 Hz)	Residual risk (48.8Hz)
BMU-only (baseline policy)	£0	2.85 times per year	1-in-7 years	1-in-26 years
100 MW additional DC-Low (FRCR 2024 policy)	£1.61m	2.56 times per year	1-in-13 years	1-in-29 years
Recommendation: 200 MW additional DC-Low	**£3.23m**	**1.85 times per year**	**1-in-23 years**	**1-in-30 years**
300 MW additional DC-Low	£4.84m	0.5 times per year	1-in-28 years	1-in-31 years

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4. Outlook for 2026/2027

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FRCR 2025 includes a preliminary analysis based on system conditions anticipated in 2026/27. A more comprehensive assessment will be conducted in the next FRCR.

- **Minimum inertia requirement**

Varying the minimum inertia level in 2026/2027 would not pose additional risks to the system. The residual risks for 49.2 Hz is **1-in-10 years** and 48.8 Hz events is **1-in-28 years.** Running the system at 102 GVA.s presents an annual saving of £67m vs 120 GVA.s.

- **Securing additional event categories**

An additional spending of **£274k** on top of the cost of securing BMU-only events allows us to manage all BMU+VS risks, improve the system risk to **1-in-10.74 years.** However, fully mitigating BMU+VS risks is challenging due to the volatility in the event profile.

- **Additional DC-Low holding**

200 MW additional DC-Low will improve the system risk to **1-in-27 years.** Holding 200 MW additional DC-low is most cost-effective.

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5. Conclusions

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Key recommendations are:

- Reduce the minimum inertia requirement to **102 GVA.s.**
- Secure all **BMU-only** risks as baseline.
- Apply **additional 200 MW DC-Low** requirement to further reduce residual risks.

Implementation

- Following the approval by Ofgem we will implement the reduction in a phased manner whilst we gain operational experiences following the first stage of the reduction.
- Increases DC-Low requirement by **200 MW:** we will communicate through the Operational Transparency Forum (OTF) or separate webinars, providing at least five working days' notice via our standard response service forecasting and communication channels.

Future Considerations

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1. FRCR forward looking

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- In FRCR 2025 Appendices we list some strategic directions that future FRCR could explore.

Areas	Context
Simplified FRCR analysis	• Following the ALoMCP, risk of inadvertent tripping of embedded generation has significantly reduced. • FRCR analysis can be shift from a loss-risk-profile per settlement-period based calculation to a capacity-based analysis.
Unified loss risk policy	• FRCR policy would recommend securing a loss risk up to a certain level. • To assess and implement this policy NESO will need to modify its existing operational tools and develop new tools and models to enhance operational awareness.
National inertia vs. regional inertia	• Collaborating with wider operability workstreams in NESO, we would like to explore: ○ Regional inertia monitoring and modelling, ○ Interaction between regional inertia and system strength, and ○ Regional frequency response requirements and procurement policy. ○ Highlight the work completed in other areas such as Grid Forming.

- Some of the areas are neither within the scope of current FRCR Methodology, nor the original purpose of the SQSS modification GSR027.
- We would like to initiate discussions with the industry and allocate appropriate workstreams in leading the development before these can be incorporated into future FRCR policy development.

2. FRCR future governance

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- According to **Appendix H** of the SQSS, the SQSS Panel is required to review and approve the FRCR Methodology and the annual FRCR Report before NESO subsequently submits it to Ofgem.
- The SQSS sets the principles and the rules but does not detail how they are discharged.
- Also during FRCR 2024, a number of SQSS Panel members suggested that the obligation to produce the FRCR may better fit under a new NESO License Condition rather than an Annex to the SQSS.
- Therefore we welcome your views in shaping FRCR future governance.

Section Five – Feedback on FRCR future governance *NB: Please refer to 8.2 FRCR Future Governance for context*		
15	Do you foresee any issues that may arise from moving the obligation to produce the FRCR to a NESO Licence Condition rather than an Annex to the NETS SQSS?	Click or tap here to enter text.
16	If the obligation to produce the FRCR and the governance rules surrounding that process are moved to NESO's Licence, do you believe that the NETS SQSS Panel should continue to provide oversight?	Click or tap here to enter text.
17	If your answer to Question 16 is "Yes", to what extent should this oversight be? For example, should it include technically assessing the recommendations and approving/rejecting it, or should it be limited to confirming that the governance process and methodology has been followed correctly?	Click or tap here to enter text.

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Consultation Timeline

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Milestone	Date
Consultation period	3rd – 31st March
Webinar during industry consultation on FRCR Report.	19th March
Publish Webinar recording	21st March
Publish Webinar Q&As.	28th March
SQSS Panel decision of FRCR recommendation.	30th April
Submission of FRCR to Ofgem	16th May

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Consultation Questions

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#	Questions
7	Do you agree that the FRCR 2025 has been prepared appropriately? Please elaborate.
8	Do you believe there has been sufficient industry engagement in preparing FRCR 2025?
9	Overall, do you agree that the FRCR 2025 represents the appropriate level of development in determining the way that the NESO will balance cost and risk in maintaining frequency security while operating the system at a reduced inertia down to 102 GVA.s?
10	Do you agree with the recommendation to: Reduce minimum inertia requirement down to 102 GVA.s
11	Do you agree with the recommendation to: Secure all BMU-only events (including consequential RoCoF)
12	Do you agree with the recommendation to: Procure additional DC-Low service provision by 200 MW
13	Do you have any other comments to the recommendations?

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Consultation Questions

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#	Questions – Feedback on FRCR future work
14	In your view, what should the future FRCR focus on?
15	Do you foresee any issue that may arise from moving the obligation to produce the FRCR to a NESO License Condition rather than an Annex to the NETS SQSS?
16	If the obligation to produce the FRCR and the governance rules surrounding that process are moved to NESO's License, do you believe that the NETS SQSS Panel should continue to provide oversight?
17	If your answer to Question 16 is "Yes", to what extent should this oversight be? For example, should it include technically assessing the recommendations and approving/rejecting it, or should it be limited to confirming that the governance process and methodology has been followed correctly?

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Audience Q&A Session

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Thank you for attending

- All FRCR material (including previous webinars)

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- Please respond to the consultation questions by 5pm on 31st March.

Frequency Risk and Control Report 2025 Consultation Response Proforma

or the FRCR Consultation Online Response Form

- For anything further please contact box.frcr@nationalenergyso.com

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