

Email to: box.FRCR@nationalenergyso.com

31st March 2025,

To whom it may concern,

Response to the 2025 NESO Frequency Risk and Control Report (FRCR) consultation.

EDF is the largest low carbon energy generator, as well as the only nuclear generator in the UK. EDF operates low carbon nuclear power stations and has a large and growing portfolio of renewables, including onshore and offshore wind, solar and energy storage. EDF has a large customer base and will be integral to Britain achieving net zero by building a smarter energy future that will support delivery of net zero carbon emissions, including through digital innovations and new customer offerings that encourage the transition to low carbon electric transport and heating.

We welcome the opportunity to respond to this consultation on the FRCR. Our response is set out to each of the consultation questions in the annex to this letter.

We welcome the latest FRCR which is important to maintain confidence in the operation of the electricity system. The electricity system has changed materially in recent years and will continue to do so as we progress towards clean power in 2030 and an increasing penetration of renewable energy sources and inverter-based technology.

Resilience of the electricity system will become increasingly important with electrification of heat and transport and decarbonising industry. Resilience of the electricity system is crucial to support the UK economy. We have already seen new phenomena, such as sub-synchronous oscillations (SSOs), occurring regularly on the system. This, and other phenomena that may occur on the system as it changes, may lead to a different overall system risk than set out in the FRCR report.

Given this we would urge NESO to continue to identify near term consumer savings but not rush to reduce the minimum inertia requirements.

We look forward to continuing to work with NESO in the post-consultation stages. Should you wish to discuss any of the issues raised in our response or have any queries, please contact me or Mathew Chandy at Mathew.Chandy@edfenergy.com.

Yours faithfully,



Mark Cox
Head of Nuclear and Wholesale Market Policy

Annex

- 1) Do you agree that the FRCR 2025 has been prepared appropriately? Please elaborate.

We agree that this year's FRCR has been appropriately prepared. For future FRCR publications NESO should further consider the issues highlighted by us regarding increased SSO events and risks of lower inertia. This is particularly important as the electricity system continues to evolve as we progress towards clean power and more renewables and inverter-based resources are connected to the system. Based on this, it is worth NESO capturing additional asks from stakeholders to be picked up going forward.

- 2) Do you believe there has been sufficient industry engagement in preparing FRCR 2025? Please specify further suggestions.

More industry engagement would have been preferred and the engagement that did take place could have been planned better. The FRCR consultation was only discussed in one Operational Transparency Forum (OTF) towards the end of January, with no early indication given that the FRCR this year would be delayed to March until later. As this is an incredibly complex modelling area, NESO must consider the extent to which any industry party can really provide effective scrutiny of the modelling, given capabilities, information asymmetry, and the consultation time period. NESO needs to consider whether this is the best way to seek feedback on proposals.

- 3) 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?

Overall, there is a good level of development and consideration from NESO on balancing cost and risk in maintaining frequency at safe levels. However, we think some considerations of risks and costs require further attention:

- Would residual risks remain consistent/decrease at 102 GVAs when we do not fully understand how certain events on the system occur and whether they relate to lower inertia levels e.g. SSOs?
- Has the cost saving been considered in the context of a wider economic cost to the economy if the system faces a country-wide shut down?
- What impact, if any, will a lower inertia level have on NESO workloads?
- Some considerations were already made on longer-term impacts e.g. in 2026/27 and how increased connections could decrease residual risks of low frequency events further. Could this be expanded on in future FRCR publications?

- 4) Do you agree with the recommendation to: Reduce minimum inertia requirement down to 102 GVA.s

- 5) Do you agree with the recommendation to: Secure all BMU-only events (including consequential RoCoF)

- 6) Do you agree with the recommendation to: Procure additional DC-Low service provision by 200 MW

7) Do you have any other comments to the recommendations?

Our answer to the above questions will primarily focus on reducing the minimum inertia requirement.

Despite the downward trend in system inertia over time, we do have some concerns over reducing the minimum inertia requirement. Not only was the requirement already reduced from 140 GVAs in 2023's FRCR, but our analysis using NESO's system inertia dataset has shown that NESO are increasing the number of actions it must take in the market during more settlement periods to maintain inertia at minimum levels.

For 2023-24, our analysis showed that for **market-provided** inertia:

- There were 2832 settlement periods with <120 GVAs
 - **Increase of 91% from the previous year**
- There were 870 settlement periods with <102 GVAs
 - **Increase of 213% from the previous year**

This means that 16% of settlement periods in a year were below 120 GVAs and 5% were below 102 GVAs, with both figures expected to increase as the electricity system continues to change. This suggests that there are more settlement periods below the current minimum inertia requirement that require more NESO interventions to continue operating the system safely.

If the minimum inertia requirement is lowered to 102GVAs and we have events occurring similar to the Drax power station trip on 14th March (which was the largest trip event at 1.88GW since the power outage in August 2019), the impact of system trips will become more serious. Though the Drax event was contained within the FRCR policy limits, such events do happen beyond expectations and their occurrences may increase over time. We are keen to know how NESO will prepare for such eventualities if the minimum inertia requirement is lowered.

Moreover, reducing the minimum inertia requirement could potentially expose the system to a geographically uneven distribution of inertia providers. This, combined with a heavily congested network, may lead to localized effects. We would appreciate NESO's views on managing the risk of this occurring and the mitigating actions being considered, if any.

We note NESO's estimated saving of £96m for lowering inertia to 102 GVAs, which is not a trivial saving. However, any wider system issue that may lead to country-wide blackouts may incur an economic loss that will be far greater than any stated saving of lower inertia levels. This could alternatively be framed as an insurance type product rather than a wasted cost.

We do not have immediate concerns with the other two recommendations but again, NESO should understand and consider whether these stated savings outweigh costs from potential wider system issues.

8) In your view, what should the future FRCR focus on?

Future FRCR work should focus on the wider impact of increased renewables and inverter-based resources being connected onto the electricity system e.g. the relationship between increased capacities of new technologies and SSOs/other new system phenomena.

We would also welcome further analysis from NESO on securing simultaneous events. Whilst we acknowledge NESO's comments in the 2025 FRCR report that covering this would require a significant increase in Dynamic Containment (DC) capacity, we note that this volume may be available in the future DC market as battery storage buildout is expected to continue at a rapid pace throughout this year and the foreseeable future. Therefore, we would welcome NESO

revisiting this topic for future reports as the GB battery development pipeline progresses and participating volumes in DC increase, as this could result in more competitive pricing and provide a feasible option to cover simultaneous events.

- 9) 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?

Whilst we do not foresee any issues with this move, we do not want this to negatively impact the level of scrutiny of the FRCR. Any proposed changes to FRCR governance and oversight are up to NESO and Ofgem and their proposals should be brought forward to industry as part of any NESO Licence Condition consultation.

- 10) 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?

Yes, we support this continued type of oversight, as long as there is no adverse impact to this oversight when moving from the SQSS annex to NESO's licence.

- 11) 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?

We would want the SQSS Panel to make a clear judgement on whether NESO have followed appropriate processes, as well as an assessment on the effectiveness of NESO's proposed FRCR changes. Through this thorough review, the panel should provide recommendations to Ofgem, who should continue to make the final decision on the proposed changes given the FRCR's importance.