

FRCR Methodology Consultation Response Proforma**FRCR Methodology Consultation**

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses to box.sgss@nationalgrideso.com by **5pm** on **Wednesday 13 January 2021**. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration.

If you have any queries on the content of this consultation, please contact Robert Wilson Robert.Wilson2@nationalgrideso.com or box.sgss@nationalgrideso.com

Respondent details	Please enter your details
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Please express your views in the right-hand side of the table below, including your rationale.

FRCR Methodology Consultation questions		
1	Overall, do you agree that this methodology will allow the preparation of an appropriate FRCR? (as required by modification GSR027)	<p>We believe that the proposed methodology is a good starting point to assess the degree and types of controls needed to secure the network. We look forward to future iterations looking at a wider set of controls (inertia services etc), but also a wider set of causes (simultaneous outages).</p> <p>The main benefit of this report will be to consider those rare, but significant events which put GB power systems at risk (such as 9th Aug 2019, 11th Feb 2012¹ and 27th May 2008²) and give Ofgem (and the rest of the industry) a clearer understanding of the cost of protecting customers from these ‘one-in-25-year’ or ‘black swan’ events. Ofgem, the industry and most importantly of all, customers can then make informed decisions on ‘willingness to pay’ for higher levels of security (and, given the disruption experienced on August 2019 we believe it is time to review the cost of</p>

¹ **Demand Control 11th February 2012:** Generation Losses triggered by extremely cold weather: ~3500MW Generation Losses from 07:00 to 10:00. Reserve despatched (3000MW of STOR plant) and DNO Demand Control (Voltage Control) instructed (Stage 1 Demand Control Issued to 5 DNOs (10:06 to 10:15) then Stage 2 Demand Control Issued to 3 of these DNOs). System Frequency obligations were satisfied but the system was at risk had there been any further generation losses as the remaining reserve holding was depleted down to 500MW.

² **Demand Control 27th May 2008:** Exceptional Generation Loss: >1714MW within 2mins and **1993MW within 3.5mins**. Frequency dropped to 48.8Hz (System outside of Statutory limits for 9-minutes). Where ‘domino-effect’ experienced: Generator-A at 345MW, Generator-B at 1237MW, Embedded Generation at 279MW plus other generation plant.

		<p>balancing the system, charged through BSUoS, against the true Value of Lost Load³), much as the TOs and the DNOs have for their reliability metrics.</p> <p>Given the recent experiences of three major events since 2008 and an increasing number of 'close-shaves' it is no longer appropriate to consider these as one-in-25yr events with the security that the nation once enjoyed. The similarity between these three events highlighted by the incremental or 'domino-effect' failures compounding the initial generation loss (and frequency collapse) should mean reserve holdings ought to exceed Largest Loss and should reinforce the message that Largest Loss+n should be considered as a priority. Comprehensive and transparent FRCR data should help in monitoring requirements from period to period.</p>
2	To help structure comments, what is your feedback on the following sections of the methodology?	Please use the boxes below for the bullet points in questions numbered 2a-2j
2a	<ul style="list-style-type: none"> • Aim 	As we understand it, the aim of the methodology is <i>"to lay out a transparent and objective framework to determine the right balance between the two competing objectives of reliability and cost, focusing on the risks, impacts and controls for managing the frequency"</i> . We believe that one of the key areas of this aim should be around transparency, ensuring that everyone in the industry has access to the necessary data and models to rerun the analysis. This ensures an open and honest conversation about the various 'merit order' of controls as well as ensuring that everyone is able to discuss 'willingness to pay' from the same understanding.
2b	<ul style="list-style-type: none"> • Impacts 	No comment
2c	<ul style="list-style-type: none"> • Events and loss risks 	Whilst we appreciate the difficulty in analysing single events, let alone simultaneous events, we believe that the real benefit of this report will be to 'think the unthinkable' and assign a cost to those rare events. It is also quite possible (and quite likely) that any simultaneous event will have a single cause and therefore is less unlikely than first envisioned. Given the tight timescales that NGESO are working to for this first iteration (due 1 st April 2021), it isn't fair to expect everything to be in the initial report, but we strongly urge NGESO to consider as many feasible events as possible in later iterations.

³ Value of Lost Load (VoLL) represents the value that electricity users attribute to security of electricity supply and the estimates could be used to provide a price signal about the adequate level of security of supply in GB. VoLL can be considered using either an estimate in terms of willingness-to-accept payment for an outage and willingness-to-pay to avoid an outage or for I&C consumers may be based on a Value at Risk calculation, ultimately resulting in a £/MWh VoLL figure.

2d	<ul style="list-style-type: none"> Controls 	As with the Events section, we believe that the true value of the FRCR report will be in identifying all the possible events and all the possible controls that can be brought to bear. Therefore, we would like to see new inertia controls considered in the report as soon as possible.
2e	<ul style="list-style-type: none"> Metrics for reliability vs. cost 	We are in agreement with NGENSO that any metric for comparing reliability and cost should focus on the total impact to system reliability and the total system cost. We believe that customers are not interested in which control is most cost effective to prevent vector shift events compared to BMU loss events, but rather the added cost to their bill of keeping the lights on. This customer centric approach should be the overarching vision for the FRCR.
2f	<ul style="list-style-type: none"> Analysis - general approach and assumptions 	We agree that the analysis for the report should be a time series and not based on a single point in time. The two major incidents over the last decade have occurred at arbitrary times and not at the system peak or minimum. Therefore, we believe it is important to consider the whole year and whether security contingency needs to change across different times of the day/season depending on the prevailing energy mix at any point in time. This ensures that unlikely events are more likely to be captured. One concern we have around using historical data for the costs of mitigation is that this will not give a good representation for new products such as dynamic containment. Using FFR data as a proxy for such a different product is likely to underestimate the costs. This constraint needs to be made clear in any outputs and conclusions from the FRCR.
2g	<ul style="list-style-type: none"> Analysis - step-by-step 	No comment
2h	<ul style="list-style-type: none"> Outputs 	We are yet to be convinced that controls put in place to mitigate one type of impact will have the ability to mitigate another type of impact. But the methodology suggests this is the case and sets the cost at the maximum of the costs associated with each impact. We would like to see more evidence that this is a valid assumption.
2i	<ul style="list-style-type: none"> Future considerations 	We agree with all of the future considerations included in the methodology report and hope to see them included in the FRCR as soon as possible.
2j	<ul style="list-style-type: none"> Input and data sources 	No comment
3	How well will this methodology address its three key aims?	Please use the boxes below for the bullet points in questions numbered 3a-3c

3a	<ul style="list-style-type: none">• establish a clear, objective, transparent process for assessing reliability vs. cost to ensure the best outcome for consumers	If all the data and models used are made publicly available, then we believe that the proposed methodology meets this aim.
3b	<ul style="list-style-type: none">• make the assessment of the risk from the inadvertent operation of Loss of Mains protection transparent	See response to Question 3a
3c	<ul style="list-style-type: none">• identify quick, short-term improvements for reliability vs. cost	Under the current limited set of controls, this aim is less achievable, but we believe that for future iterations that include a wider set of controls and events, this aim can be met.
4	Do you have any other comments?	No comment