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PERFORMANCE MONITORING POLICY FOR PROVIDERS OF FREQUENCY RESPONSE AND RESERVE BALANCING SERVICES

Dear Colleagues,

As part of the Product Roadmap for Frequency Response and Reserve, we committed to reviewing our policy for testing and performance monitoring of balancing services. We published the testing guidance document for consultation on 7th August, and included some changes to address providers' concerns. The draft policy for performance monitoring requirements is now being published as part of this letter.

This document is the first step to rationalising and standardising our performance monitoring processes, which is a necessary precursor to streamlining our upfront testing requirements. The policy sets out the data requirements for all services, such that providers are not having to install different metering or communications assets to different specifications. The specific calculations for performance monitoring of each balancing service will continue to be contained in the SCTs for the service in question, but they will all be compliant with this new policy.

Performance monitoring for balancing services is undertaken differently depending on the service in question. Whilst all services have performance monitoring requirements defined in their Standard Contract Terms (SCTs), how they are implemented and what data is required is not consistent. Some services require specific data to be submitted by the provider, whilst others use pre-existing data flows such as metering for the Balancing Mechanism or dedicated IT infrastructure such as STOR Despatch System. As we move to reform our balancing services, we need to ensure that our requirements are consistent and appropriate.

The policy for performance monitoring will sit alongside the work being done as part of Grid Code Modification 0114 to define the policy for pre-qualification and testing of assets providing balancing services.

We welcome feedback on this policy, please contact your account manager directly or contact the team at commercial.operation@nationalgrid.com.

Next Steps

There are some technical issues, such as baselining and state of charge management, which are difficult to address within the current performance monitoring processes without risking the creation of technology-specific arrangements due to the design of the current balancing products. As part of the programme of works to reform our balancing services, outlined in the Product Roadmap and the ESO Forward Plan 2018, we are designing a suite of new frequency response and reserve products that will have consideration of these elements built in. This work has been discussed with the industry at webinars and technical workshops, and we will be publishing a plan for the rollout of the new frequency response product suite in December.

Additionally, the ability of providers to access a flexible and simple platform to provide performance data to us is a necessary precursor to streamlining the monitoring processes. After the successful implementation of Phase 1 of the Platform for Ancillary Services, which provided an online system for distribution-connected providers of Fast Reserve to communicate with our National Control Centre, we are now starting Phase 2 which will replace the STOR Despatch System for distribution-connected STOR providers. We anticipate starting the rollout of this from June 2019. The following phases of the PAS project will address frequency response products, and we are investigating delivery timelines for these phases. We will be in position to communicate further in December.

Our ambition is to lower barriers to entry for new assets and aggregated portfolio growth inherent in the current testing requirements, however that necessitates increasing the scale and efficiency of our ongoing performance monitoring systems and processes first. This policy, along with the work on the testing guidance document, GC0114, and the new product suite, is a step towards that ultimate goal.

Yours sincerely

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1 Introduction

1.1 Purpose

This document aims to provide a monitoring policy for providers of frequency response and reserve to National Grid. This document covers the performance monitoring requirements along with the resolution and granularity required to meet them. This document should be read in conjunction with the Standard Contract Terms for the service in question. For any further enquires or questions, contact your Account Manager or:

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1.2 Overview-

System Performance monitoring is required to verify provider performance against agreed contractual obligations, and therefore ensure that the balancing services being used by the SO meet the required standards. It also ensures that providers are being fairly remunerated for their services, and that all parties are competing equitably. The performance monitoring arrangements for individual services are set out in their respective Standard Contract Terms (SCTs), and this will continue to be the case, however this document sets out the overarching context and the requirements which apply to all services.

This information will also be used in post-event analysis following system events (such as large generation trips) to validate the systems performance in line with the Security and Quality of Supply Standard (SQSS) and in comparisons with the expected system behaviour as determined by system models. This will enable the System Operator to accurately model the system's performance and therefore better understand performance and ultimately manage response and reserve and its associated costs in a more efficient manner.

2 Performance Monitoring Requirements

2.1 Frequency of Performance Monitoring

National Grid will review the performance of providers against their contracted service at least three times per calendar year.

2.2 Requirements – post event

National Grid require providers to install performance monitoring equipment for post event review purposes with a resolution of ten times the speed of delivery of the contracted service as a minimum. The location of this equipment must be at the point of connection, or another point as agreed by National Grid.

The data from these monitors should be GPS time-stamped and the Electricity System Operator will provide a template and/or system to which the data should be submitted. For aggregated portfolios, this data may be provided in aggregated form, however the individual site data must be available on request.

The User must store this data on a rolling 8 week basis as a minimum.

Contracted Speed of delivery	Minimum resolution of monitoring required
1s	10Hz
10s	1Hz
1 minute	0.1667Hz

Table 1.1 – examples of monitoring requirements

2.3 Requirements – real-time

For some services operational metering is required for control room purposes. Operational metering is not stored and is not used for performance monitoring. More detailed operational metering requirements may be specified in the provider's standard contract terms (where required). For the purposes of operational metering, signals should have an update rate of 1Hz or better (see appendix 1 for details of operational metering requirements).

2.4 General requirements

All metering should comply with Elexon's Balancing and Services Code section L as a minimum (see below link)

https://www.elexon.co.uk/wp-content/uploads/2017/03/Section_L_v20.0.pdf

The relevant Codes of Practice which include metering tolerances and accuracies can be found here:

https://www.elexon.co.uk/bsc-and-codes/bsc-related-documents/codes-of-practice/

Please not that if you intend to participate in a faster frequency market in the future your monitoring would need to meet the requirements for that market.

3 Baselining/State of Charge Requirements

For assets where there is an underlying level of generation or supply from which the service is being provided, there is a need to identify a baseline power from which the energy for the service is being delivered. Where there are no specific arrangements in place between National Grid and the provider, this baseline will be taken to be the average of the active power values at the start and end of the period of time within which the service is being provided.

For assets with a finite energy supply, such as batteries, there is a need to understand the amount of energy available from the assets. Where there are no specific arrangements in place between National Grid and the provider, the amount of energy available from the asset(s) as a percentage of total operational capacity must be provided on a 15 minute basis as a minimum.

4 Regional Frequency Measurement

For aggregated portfolios providing frequency response, it may be permissible to use frequency meters at a regional level rather than at each asset making up that portfolio. All assets within a Regional Frequency Measurement area would need to be controlled by a single frequency meter within that area. The appropriate regions, acceptable accuracy of the metering, and what the maximum latency in measurement, control and communications would be must be agreed with National Grid.

Appendix 1:

Description	Units	Type	Notes
MW and MVAr for each Balancing Mechanism Unit and Station Supplies derived from Boundary Point Settlement Metering System.	MW MVAr	Signals to have a 1Hz update rate or better and provide input to the Ancillary Services Monitoring equipment	
Individual alternator MW and MVAr *(applicable to multi-shaft CCGT Generators)*	MW MVAr	Signals to have a 1Hz update rate or better	
Individual unit transformer HV MW and MVAr. *(synchronous only)*	MW MVAr	Signals to have a 1Hz update rate or better	
Frequency	Hz	Signals to have a 1Hz update rate or better and provide input to the Ancillary Services Monitoring equipment	
Power Available *(wind farms only)*	MW	Signals to have 0.2 Hz update rate or better	Power Available is defined in the Grid Code and is used by The Company to determine the Headroom available for the purposes of calculating Frequency response volumes and net System Reserve.
System Availability *(batteries only)*	MW	Signals to have a 1 Hz update rate or better	
State of Charge *(batteries only)*	MW	Various to be agreed with The Company	