

25th October 2017

Dear Provider

Proposal for Trial: Methodology for Performance Monitoring of Dynamic Firm Frequency Response

On 11th October 2017 National Grid Electricity Transmission (NGET) published a notification letter informing the industry of its intention to carry out a trial regarding the performance monitoring of Non-BM Dynamic Firm Frequency Response (FFR). This letter forms the initial proposal and is an invitation for feedback from industry.

Background

NGET is initiating this trial to deliver a number of benefits. First and foremost, the proposed methodology aims to result in a clearer defined process around performance monitoring for those with variable demand/generation. This in turn should provide clearer guidance to provider's counterparties, new DSR accounts and investors as to the potential returns and penalties involved in providing FFR. The proposed methodology also supports the industry's desire to move products closer to real time, increasing flexibility. The results of this trial will feed into the FFR development work.

From this trial NGET aim to improve the performance monitoring process, ensuring providers are recognised for their true performance. The industry has raised issues around the transparency of the processes regarding the provision of services and NGET is therefore striving to design a more accurate and representative performance monitoring process which is fully understood and agreed with the industry.

Initially the trial will only be open to Non-BM dynamic participants. Providers who choose not to participate will remain on the current Standard Contract Terms. For the avoidance of doubt, participants will not be subject to different penalty percentages and the trial will not impact NGET's rights to performance monitor and associated payment deductions.

Current Process

The current performance monitoring process for dynamic, Non-BM providers is detailed in section 4A.14 of the Framework Agreement (FA) and section 4A.14 of the Standard Contract Terms (SCT's). It details that NGET reserves the right to assess the delivery of response by the contracted FFR unit during any sample period using a formula to derive the percentage performance measure (PPM).

This formula is as follows:

$$PPM = A/B * 100$$

A is the aggregate of each second by second spot value of response assumed to be delivered over the sample period (30 minutes). The response volumes shall be calculated by reference to an operating profile derived from second by second output data. This assumed operating profile shall be used to determine assumed second by second spot values of response. If no operating profile has been agreed between the provider and NGET, response values are calculated as the difference between power consumption at the start of a sample period and power consumption at the relevant time. Currently, the assumed response data is submitted upon request via an excel spreadsheet.

B is the aggregate of each second by second spot value of response required to be delivered. This is ascertained by reference to an operating profile derived by linear interpolation from the applicable FFR capability data tables, which is used to determine second by second spot values of response required to be delivered.

The PPM is calculated over a sample period once per month, thus giving the provider one PPM score for the month. NGET reserves the right to use the PPM score to calculate applicable monthly payment deductions.

Scope of Proposal

Providers will be required to sign up via their account managers to participate in this trial. The trial will be for an initial 9 month period with the opportunity to extend. Current go-live is scheduled for 1st December 2017. The terms of the trial will be subject to change should modifications be deemed necessary to improve the feasibility of the trial.

For the avoidance of doubt, this trial is looking to review the method of calculating the 'A' section of the PPM formula. This is the response assumed to be delivered, as defined in section 4A.14 of the SCT's. This trial will not examine the methodology of calculating the 'B' section of the formula. The below table will not change as part of this trial. Participants shall be subject to the same payment deduction thresholds as those who do not sign up to the trial.

Percentage Performance	Performance Factor
<10%	100%
>10%, <60%	50%
>60%<95%	25%
>95%	0%

For example under the trial should a participant's percentage performance be calculated at 97% using the revised PPM, there would be no penalty applied to that month's availability payment. However if the PPM was calculated at 62% for example, they would be subject to a performance factor of 25%. This would result in NGET recovering 25% of the month's availability fee associated with the unit under review. This remains in line with all participants in the Dynamic FFR market.

NGET's Proposal

Under the trial NGET is looking to review the use of a forecasting based approach to performance monitoring. Forecasts would be generated and stored by providers close to real time. NGET would use the difference between the forecasts and actual delivery to derive the 'A' value of the PPM formula.

Forecasting

NGET proposes that providers record and store a 30 second forecast of their demand/generation (or aggregated demand/generation) every 30 seconds. The methodology for this forecast will need to be agreed with NGET by the individual provider. Research has suggested that forecasting close to real time should result in providers being able to ascertain a high level of accuracy. NGET has conducted its own research and welcomes input from industry on how achievable this is and how this could work in practice.

It will be critical to ensure the accuracy of the forecasts if NGET is to gain confidence in using this approach more widely. NGET therefore will require reporting on the accuracy of the forecasts generated to gain valuable data around this approach in the GB market. This information will be valuable to NGET when developing the performance monitoring options for the future frequency response product range. At this stage NGET will not penalise providers for poor forecasting, beyond the impact on their assumed response figure in the PPM calculation. Should there be

consistent concerns regarding the accuracy of this forecast NGET would reserve the right to address the suitability of the trial for the party.

Early discussions with players in the market indicate that such an approach for DSR would enable providers to reduce the level of headroom they are currently assigning to their portfolio bids. Providers have noted that by adopting such a methodology they could offer greater clarity when signing up industrial & commercial parties with regards to explaining the penalty structure. This ultimately reduces an area of risk for potential users looking to participate and reduces the costs to consumers.

Data

Currently NGET does not have an electronic solution in place to allow real time data flow for forecasting. NGET will be looking for providers to produce their forecast and store this data until requested by NGET. Therefore suitable assurances will be required to demonstrate the data was created at real time. A possible technique to achieve this is time-stamping; however NGET welcomes input. Currently, providers submit all data upon request via an excel spreadsheet.

Under the trial, NGET welcomes providers to offer access to data via online portals/micro web services. This would be done via NGET informing providers of which sample period they are looking to select. NGET would be interested to make this process more transparent for providers and may request providers to run performance calculations in tandem with our own checks in order to achieve maximum transparency and learning around the process.

For the avoidance of doubt NGET is not stipulating users provide portal access. Providers have requested to use a portal previously for data sharing; NGET sees this trial as a good opportunity to introduce performance monitoring data exchange through such a mechanism. Providers without a portal will provide data in excel format, NGET intend to develop a template to share.

Under the current SCT's providers are required to submit data on a second by second basis. During initial conversations with market participants a number of parties have expressed their ability to provide data in 0.1 second granularity to align with testing standards. NGET will not be imposing this as part of the trial but welcome those parties who are able to provide both to discuss with their account managers as this will provide valuable data with regards to the level of accuracy of performance monitoring depending on the granularity of data provided. For the avoidance of doubt any payment deductions will be applied to the 1 second data submitted and all providers will be required to submit this even if they can provide the additional information. The 0.1 second data will be for learning and development purposes only to help shape future work. We hope those with the ability to provide both will want to partner in this area.

Actions NGET shall take during/after the trial

NGET shall collect appropriate data throughout the duration of the trial in order to fully understand the implications of the changes being tested. These shall be shared with industry through a report at the end of the trial, as well as at appropriate stages throughout. This information shall be published on the National Grid FFR website and may feed into reports produced under the future of balancing services work. Note that NGET will not share individual performance of providers or the accuracy of their data but will collate to provide a consolidated overview of the trial, outlining the areas which could be improved and those which have worked well.

Any methodologies deemed beneficial to both NGET and the wider industry may then be considered for introduction into the SCT's/FA's through the formal mechanisms.

Consultation

As part of this consultation NGET value the input and feedback from industry to ensure the trial can maximise its potential in improving the performance monitoring of Distributed Energy Resources. Following the publication providers are requested to complete the feedback form template and submit to the below email address no later than **17:00 on 6th November 2017**.

Following feedback submissions, NGET will review alongside our initial proposal to publish a final draft on 22nd November 2017. During this consultation period NGET may contact individual providers to clarify their feedback and engage in further discussion if appropriate to ensure all participants views are assessed as part of the final proposal due to go live on 1st December 2017.

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Kind Regards

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