Recommendation on DS3 System Services Protocol – Regulated Arrangements

DS3 System Services Implementation Project

June 12th 2020

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1 Executive Summary

On April 8th 2020 EirGrid and SONI published a consultation[1] on the proposed amendments to the DS3 System Services Protocol Document – Regulated Arrangements, Version 2.0, effective from 1st May 2019. This consultation was to be read in conjunction with the accompanying redlined Protocol document.

In this document, we consider the responses received to this consultation, provide clarifications where necessary, and make our recommendations.

It should be noted that the implementation date of version 3 of the Protocol document will be coordinated with the contract execution date following Gate 3 procurement of DS3 System Services.

The main recommendations and clarifications can be summarised as follows:

- We recommend the Protocol document is updated with the clarification on the provision of the FFR service as detailed in section 2.1 of the consultation paper.
- We recommend not implementing at this time the proposal, as detailed in section 2.2 of the consultation paper, to reduce the tolerance threshold used to determine when to performance monitor FFR, POR, SOR and TOR1.
- We recommend that the proposal as set out in the consultation paper (section 2.3 point 1) to amend section 6.23 'Process for Performance Assessment of FFR' of the Protocol Document is implemented.
- In acknowledgment of comments received we recommend that the proposed additional operational requirement as set out in the consultation paper (section 2.3 point 2) is amended (as detailed in section 5.3 of this recommendations paper).
- The TSOs recommend that the proposal as set out in the consultation paper (section 2.3 point 3) to amend sections 3.4.1 and 3.4.2 is implemented, replacing the word 'mirrored' with 'rotated'.

[1] 'Consultation on DS3 System Services Protocol'
http://www.eirgridgroup.com/site-files/library/EirGrid/Consultation-paper-Protocol-Doc-final.pdf

- In acknowledgement of a comment received from a respondent we also recommend adding ‘as applicable’ to sections 5.8.2.4(c), 5.9.2.3 (c) and 5.10.2.3 (c) of the Protocol document to clarify when Governor Droop is applied to performance assessment calculations.

2 Contents

3 Introduction

3.1 Background

EirGrid and SONI are the Transmission System Operators (TSOs) in Ireland and Northern Ireland. It is our job to manage the electricity supply and the flow of power from providers to consumers.

We have a responsibility to enable increased levels of renewable sources to generate on the power system while continuing to ensure that the system operates securely and efficiently. Our Delivering a Secure Sustainable Electricity System (DS3) programme seeks to address the challenges of increasing the allowable System Non-Synchronous Penetration (SNSP) up to 75% in 2021.

A key component of the DS3 programme is the System Services work stream. Its aim is to put in place the correct structure, level and type of services in order to ensure that the system can operate securely with these higher levels of non-synchronous generation.

3.2 Overview of System Services

EirGrid and SONI have licencing and statutory obligations to procure sufficient system services to enable efficient, reliable and secure power system operation. DS3 System Services are the contractual arrangements in Ireland and Northern Ireland for twelve system services (SIR, FFR, POR, SOR, TOR1, TOR2, SSRP, RRS, RRD, RM1, RM3, and RM8).

These 12 system services are required to support a move to higher levels of nonsynchronous generation. The FFR service was introduced from 1 October 2018 and a further two services (DRR and FPFAPR), will be introduced at a future procurement gate. Table 1 provides a high-level summary of the current and proposed DS3 System Services.

Table 1 Summary of DS3 System Services[2]

Service Name	Abbreviation	Unit of Payment	Short Description
Synchronous Inertial Response	SIR	MWs^2h	(Stored kinetic energy)*(SIR Factor – 15)
Fast Frequency Response	FFR	MWh	MW delivered between 0.15 and 10 seconds
Primary Operating Reserve	POR	MWh	MW delivered between 5 and 15 seconds
Secondary Operating Reserve	SOR	MWh	MW delivered between 15 to 90 seconds
Tertiary Operating Reserve 1	TOR1	MWh	MW delivered between 90 seconds to 5 minutes
Tertiary Operating Reserve 2	TOR2	MWh	MW delivered between 5 minutes to 20 minutes
Replacement Reserve – Synchronised	RRS	MWh	MW delivered between 20 minutes to 1 hour
Replacement Reserve – Desynchronised	RRD	MWh	MW delivered between 20 minutes to 1 hour
Ramping Margin 1	RM1	MWh	The increased MW output that can be delivered with a good degree of certainty for the given time horizon.
Ramping Margin 3	RM3	MWh	
Ramping Margin 8	RM8	MWh	
Fast Post Fault Active Power Recovery	FPFAPR	MWh	Active power (MW) >90% within 250ms of voltage >90%
Steady State Reactive Power	SSRP	MVArh	(Mvar capability)*(% of capacity that Mvar capability is achievable)
Dynamic Reactive Response	DRR	MWh	Mvar capability during large (>30%) voltage dips

[2] Further detail on the DS3 System Services can be found at: http://www.eirgridgroup.com/how-the-grid-works/ds3-programme/

4 Responses to the Consultation

The consultation closed on 14th May 2020. In total, 19 responses were received. Parties who submitted non-confidential responses are listed below:

Bord Gáis Energy (BGE)

Bord na Móna (BNM)

DRAI

Electricity Association of Ireland (EAI)

Energia

EP Kilroot Power Ltd and EP Ballylumford Ltd

ESB Generation and Trading (ESB GT)

Greencoat Renewables PLC

GridBeyond

Indaver

Lumcloon Energy Limited

Moyle Interconnector Ltd

Power Procurement Business (PPB)

Renewable Energy Systems Ltd (RES)

SSE

Statkraft

Tynagh Energy Ltd

All non-confidential responses have been published alongside this recommendations paper, and all responses have been shared with the Regulatory Authorities.

5 Questions from the Consultation paper

All 19 respondents gave feedback to varying degrees relating to the questions posed. This totalled a large volume of comments. Each question will be dealt with specifically in this document and we will address the key themes that were raised under each question.

Additional comments not related to the consultation questionnaire have been included at the end of this section.

5.1 Clarification regarding the provision of the FFR service

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

5.1.1 Industry Responses

There was a large volume of comments relating to the proposal to amend the Protocol document to provide clarity to industry regarding the expected response characteristics of FFR (Protocol document, Section 3.4) when the service is declared to a value lower than the Providing Unit's contracted volume. This would bring the FFR service in line with the expected response characteristics of POR, SOR, and TOR1 as detailed in the current version of the Protocol document. The following provides a high-level summary of the comments received:

- Nine respondents welcomed the clarification and improved transparency around requirements and expectations of Service Providers.
- One respondent had a neutral stance on the clarification.
- Five respondents stated they had no comments on the proposal.
- Four respondents (Demand Side Unit (DSU) and Power Park Module (PPM) Operators) do not support the clarification. Three of these respondents believe that the update goes beyond a clarification and is instead a fundamental change to the expected response. Furthermore these responses state that the service requirement design should not be limited by constraints in the TSOs' scheduling tools.

  One respondent noted that dynamic response cannot be provided by individual units within a PPM without central coordination and that the amendments will invalidate decentralised control solutions and thus may require changes to PPM controls.

5.1.2 TSOs' Response

We acknowledge the responses received from industry regarding the clarification. While the majority of respondents welcomed the clarification, we note that four responses did not support the amendment. The TSOs note the concerns raised in these four responses and understand the reasons behind these being raised. While the TSOs acknowledge the unique characteristics of PPMs and aggregated technologies, and how this clarification may affect the ability of providers utilising these technologies to deliver services, we believe that the TSOs should procure services from all providers which facilitate the safe and secure operation of the system at least cost to the consumer.

The TSOs understand that centralised control with more complex logic may be required in order for PPMs and aggregated units to provide a truncated response characteristic when declared to a lower availability. However, we believe that the clarification to the protocol is required, as it is not currently appropriate for the TSOs to continue to procure, or utilise services from providers with variable or uncontrolled MW/Hz or percentage droop response characteristics.

A pro-rated delivery is incompatible with current product delivery expectations of the TSOs and further utilisation of this type of provision would ultimately result in a need for the TSOs to schedule higher volumes of fast acting reserves to account for the less aggressive delivery from these technologies at times when the units are not declared fully available. The costs of this would ultimately be borne by the consumer through higher service payments and re-dispatch costs, or alternatively by service providers collectively through a reduction in service rates or product scalars.

The TSOs acknowledge that more sophisticated control logic may be required in order for PPMs to provide dynamic service provision. In addition, for aggregators to provide either a static response with multiple steps or indeed a dynamic service when the units are not fully available may well require compromising across service provision. To the extent we need to define a service in detail it may inadvertently remove some of the choice a provider might have. This balancing services definition for system security to the degrees of freedom a provider has in supplying a service is something that will be at the core of the future system services arrangements for 2030. However, not withstanding this concern, we believe it is appropriate for this clarification at this time.

5.1.3 TSOs' Recommendation

We recommend the Protocol document is updated with the clarification on the provision of the FFR service as detailed in the consultation paper.

5.2 Threshold for Performance Monitoring of FFR, POR, SOR and TOR1

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

5.2.1 Industry Responses

The following provides a high-level summary of the comments received.

- Two respondents agreed with our proposal to amend the tolerance threshold.
- Six respondents disagreed with our proposal to amend the tolerance threshold.
- Two respondents had no comment on the proposed change.
- Three respondents suggested 0.5MW tolerance for the performance assessment of all reserve services.
- Two respondents believe that the proposal results in additional financial risk on providers.
- Two respondents stated that due to this proposed amendment service providers should be allowed to contract reserve services for less than 1MW.
- Seven respondents stated the data poor process needs to be reviewed.
- Four comments suggested that when completing a performance test to reset a Providing Unit's Performance Scalar if the Providing Unit passes the TSO pays for the cost of the test and if the Providing Unit fails the Service Provider pays for the cost of the test.
- Four respondents commented that the reason the changes were being brought forward was to address the data poor issue and that the data poor period should be extended to two years.

5.2.2 TSOs' Response

The TSOs would like to clarify that the purpose of reducing the minimum threshold of 1MW to 0.5MW for POR, SOR and TOR1 and 0.2MW for FFR is to ensure that units, which contract for approximately 1 MW of Operating Reserve (OR) or Fast Frequency Response (FFR), have as many performance incident events assessed as possible. Currently a post event assessment is not utilised for settlement if the provision requirement is less than or equal to 1MW for the event. In such cases an N/A is the resulting output, which overtime can result in otherwise good performing units being deemed data poor. This is primarily impacting small units and aggregated units who may only be available for 1MW or less pre event or may have only been required to deliver 1MW or less due to the nature of the event.

A change to the protocol which lowers the Qi assessment from a minimum of 1MW to 0.5MW for POR, SOR and TOR1 and from a minimum of 1MW to 0.2MW for FFR will result in a significant reduction in the number of these smaller providers who are not being assessed.

As it stands, there will be no increase/decrease in the number of reports issued to the providing units, simply, more performance incidents for units which have low contracted volumes (approximately 1MW) will be counted towards performance scalars.

A number of the consultation responses noted the changing of this parameter also has a knock on impact with regards to the tolerances applied for assessing larger providers. The TSOs have assessed the impact of this with regards to assessment and have concluded that this change will have no impact on units delivering 90% or greater of their expected delivery. As such this amendment will not impact good performing units and will only marginally impact units who did not perform well when the calculation of the S parameter is accounted for in the Qi calculation (see Protocol document section 5.8.2.6 for further details of the Calculation of Performance Incident Scaling Factor (Q_i) for Provision of POR).

With regards to the comments on the data poor process methodology the TSOs would like to state that this was not in the scope of the recent consultation. However, the TSOs welcome all comments received and will continue to monitor the trends regarding units becoming data poor and may in future look to amend the methodology or time frame accordingly.

5.2.3 TSOs' Recommendation

Due to the large volume of responses that were opposed to the proposal we recommend not implementing at this time the proposal to reduce the tolerance threshold used to determine when to performance monitor FFR, POR, SOR and TOR1. We still believe the rationale exists to implement this change and will revisit in a future consultation which will include an industry workshop.

5.3 Additional Changes

Question 3: Do you have any comments on the additional changes in the Protocol document presented in section 2.3 of the consultation paper?

5.3.1 Amendment to Section 5.23 Process for Performance Assessment of FFR (consultation paper section 2.3 point 1)

5.3.1.1 Industry Responses

- Six respondents believed the three day requirement for the Service Provider to provide data from its Monitoring Equpment was too onerous.
- Six respondents suggested a five day requirement to provide the data.
- Two respondents suggested a monthly requirement to provide the data.
- Five respondents raised concerns on the document control of the template and requested a review of the template before implementation.
- One respondent stated their preference was to permit data streaming from the Service Provider to the TSO.
- Three respondents accepted or had no issue with the amendment as described in the consultation paper.
- Six respondents had no comment on the proposed amendment.

5.3.1.2 TSOs' Response

The comments regarding the proposed amendments to section 6.23 'Process for Performance Assessment of FFR' of the Protocol Document have been welcomed. The TSOs would like to clarify that the three working days requirement is not a change to the Protocol document. The existing timeframe for the Service Provider to provide the relevant data is three working days as per Section 5.23 of the DS3 System Services Protocol – Regulated Arrangements Version 2

document. This requirement is based on other time sensitive activities which are to be completed by the TSOs following receipt of the data.

The template was issued to a sample of FFR service providers for a Performance Incident in January 2020 and no issues were raised with the template by any of the service providers. A snapshot of the template to gather the requested data is shown in figure 1. Service Providers who wish to obtain a sample of the report prior to an Performance Incident occurring should contact PERFORMANCEMONITOR@Eirgrid.com or PerformanceMonitoring@soni.ltd.uk.

Timestamp	Frequency (Hz)	Unit Output (MW)	Unit Availability (MW)		SCADA FFR Availability:		MW
					EDIL FFR Availability:		MW

Fig 1

With regards to the industry comment on data streaming, at the moment, the TSOs do not have the capabilities to allow for data streaming in relation to the provision of FFR. However, this may be investigated by the TSOs in the future.

5.3.1.3 TSOs' Recommendation

The TSOs recommend that the proposal as set out in the consultation paper to amend section 6.23 'Process for Performance Assessment of FFR' of the Protocol Document is implemented.

5.3.2 Additional Operational Requirement (consultation paper section 2.3 point 2)

5.3.2.1 Industry Responses

- Five respondents accepted or had no issue with the amendment as described in the consultation paper.
- Three respondents stated that the ability to maintain the data quality of real-time signals may be outside their control.
- Twelve respondents had no comments on the proposed addition.

5.3.2.2 TSOs' Response

The comments regarding a proposed additional requirement to section 3.1 'General DS3 System Operational Requirements' of the Protocol Document have been welcomed. To take into account this feedback the TSOs have revised the requirement as detailed in our recommendation, see section 5.3.2.3 below.

5.3.2.3 TSOs' Recommendation

The TSOs recommend that the proposed wording of section 2.3 as set out in the consultation paper is amended as follows: The Providing Unit must ensure that the data quality of real-time signals, insofar as it is in the unit's control, is maintained to the required standards for the duration of the Agreement. The Providing Unit must engage with the TSOs without delay to resolve any issues that adversely affect the data quality of real-time signals.

5.3.3 Change to Section 3.4.1 and Section 3.4.2 of the Protocol Document (consultation paper section 2.3 point 3)

5.3.3.1 Industry Responses

- Five respondents stated the TSOs should procure and remunerate high frequency response.
- One respondent stated that did not agree that any assessment or penalty should be attached to a service provision that is not financially rewarded for its provision.
- Twelve respondents had no comment on the proposed change.
- One respondent had no issue with the change.

5.3.3.2 TSOs' Response

In response to the comments received regarding the proposal to amend sections 3.4.1 and 3.4.2, the TSOs would like to confirm that the replacement of the word 'mirrored' with 'rotated', i.e. rotating the curve 180 degrees about the nominal frequency, with respect to a Providing Unit's contracted FFR Frequency Response Curve, clarifies the type of response required should a provider of the FFR service provide an over-frequency response at times of high frequency. The TSOs do not currently procure a dedicated over-frequency System Service under the Volume Uncapped arrangements; determination of specific system needs will inform the TSOs' approach to over-frequency requirements in the future.

5.3.3.3 TSOs' Recommendation

The TSOs recommend that the proposal as set out in the consultation paper to amend sections 3.4.1 and 3.4.2 is implemented.

5.4 Future Proposals

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

5.4.1 Industry Responses – Question 4

The following provides a high-level summary of the comments received:

- One respondent welcomed the advance notice of the proposed changes.
- Three respondents stated that more information was needed.
- Six respondents commented that a working group or forum was required to discuss the proposals.
- Four respondents commented that there should be an increase in the SIR payment.
- Three respondents were supportive of changing the POR assessment to an average time period.
- Two respondents tentatively support the changes presented in the consultation paper.
- Two respondents support the changes presented in the consultation paper.
- Four respondents provided no comment to the proposals.
- Three respondents were opposed to removing the POR inertia credit from the POR performance assessment calculation.
- Two respondents disagreed with the purpose given in the consultation paper for the introduction of POR inertia credits. They stated the purpose was actually to reflect the characteristics of synchronous units during frequency transients.
- One respondent commented that consideration should be given to introducing a product scalar for faster response of POR similar to FFR.
- One respondent stated that green dispatchable ancillary services could be provided by plant which is currently aligned with the POR inertia and Governor Droop Multipliers.

5.4.2 TSOs' Response – Question 4

The TSOs welcome the high volume of feedback received regarding the proposals to modify the performance assessment of the POR service. We believe the rationale for these changes remains valid. The proposed changes are under review and there will be further opportunities for engagement by industry.

With regards to the comment on an increase in the SIR payment. It should be noted that payment rates do not form part of the Protocol document.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

5.4.3 Industry Responses – Question 5

The following provides a high-level summary of the comments received:

- Twelve respondents agreed with the proposal with two respondents further commenting that it needs to be included in the next consultation of the Protocol document.
- Four respondents stated that a working group is required to progress this review.
- One respondent commented that further information was needed and that they had no immediate reason to support the review.
- Five respondents stated they had no comment.

5.4.4 TSOs' Response – Question 5

The TSOs would like to acknowledge the responses to this future proposal. The TSOs are currently examining methodologies that may be used to more accurately reflect the different ramping products for all Service Providers. Following this the TSOs will engage with industry on the proposal before developing a tool to complete this analysis.

5.5 Additional comments from industry & TSOs' responses

In this section, we consider issues raised by respondents which are not directly connected to the questions asked in the consultation document.

- A respondent commented that that the performance monitoring methodology breaks down when the appropriate N/A governor droop setting that has been specified for DSUs is used in the calculations.
    - The TSOs welcome this feedback. Using the POR performance assessment measurement process, Section 5.8.2.1 of the Protocol document, as an example, we would like to highlight the text 'The Expected POR during the POR Period may be derived, as applicable, from:'. The provided list that make up the calculation includes the Governor Droop elements. This text is repeated in

sections 5.9.2.1 (SOR calculation) and 5.10.2.1 (TOR1 calculation). To avoid confusion the TSOs recommend also adding 'as applicable' to sections 5.8.2.4(c), 5.9.2.3 (c) and 5.10.2.3 (c).

- Two respondents highlighted that critical information on the performance monitoring of FFR was omitted from the Protocol document.
    - The TSOs welcome this feedback. Due to time constraints with issuing version 3 of the Protocol document in time for Gate 3 procurement of DS3 System Service it will not be possible to add in the required detail to the FFR performance assessment. However, we will provide detail to all Service Providers of FFR on how the FFR performance assessment calculation is performed via email and this will be reflected in a future version of the Protocol document.

- Four respondents requested a forum and/or working groups to discuss future changes to the Protocol document.
    - The Governance of the Protocol document, as specified in Section 2 of that document, is such that any proposed change will be subject to industry consultation and require the approval of the Regulatory Authorities. This is in accordance with the SEMC DS3 System Services Regulated Arrangements System Services Contractual Arrangements Decision Paper SEM-17-094, which states, "The governance of the Protocol document shall be such that the TSOs may propose changes, to the Protocol document once in any three-month period. All proposed changes to the Protocol document will be subject to SEM Committee approval."

      The TSOs do not intend to apply to the SEM Committee to change the governance of the Protocol document. However, we appreciate industry feedback that industry fora are an important aid to the consultation process to explain proposed changes and will endeavour to convene an industry forum as part of the consultation process for any future proposed changes to the Protocol.

- One respondent requested that the TSOs should flag to a Providing unit whether they have used the primary or secondary metric for determining Pre-Event Frequency for the unit when issuing the performance report.

- The TSOs welcome the comment from the respondent. We use the metric most favourable to the Providing Unit when calculating Pre-Event Frequency and output as stated in section 5.7.1.2 of the Protocol document. In the Operating Reserve Performance Report the Pre-Event Output used is shaded differently to the other time periods. This allows the Providing Unit to know which metric has been used by the width of the shaded area labelled Pre-Event Output on the chart.

- One respondent raised a concern around the level of tolerance applied "At each sample point" in section 5.14.1.2 "Calculation of Performance Incident Scaling Factor (Qi) for Provision of FFR". They stated that while a tolerance of 10% may be appropriate for the majority of measurements, they suggested that to account for example for irregular erroneous measurements or power spikes, the TSOs should permit a small number of outliers in the measurements that can be discounted from the 10%. For example, requiring that ~95% of the samples comply with the 10% tolerance would be more equitable in our view particularly in the context of emerging technologies.
    - The TSOs acknowledge the comment, however, the subject examined by the respondent is not part of the scope of this consultation..
- One respondent queried one of the requirements in Section 3.4 of the Protocol document relating to FFR provision - the Unit shall be able to operate without recovering its resource until the Transmission System Frequency has recovered (the exact timeframes shall be agreed by the TSOs). The respondent would welcome more clarity related to the timing of the recovery of the resource. They further questioned could the recovery of the resource commence during the recovery of the Frequency after a Frequency Event occurs (e.g. during the POR, SOR timeframes) or should a relevant unit wait until the Frequency has returned to 'normal' levels.
    - The TSOs acknowledge the comment from the respondent. The quoted text from section 3.4 sets out one of the criteria for a unit to be considered as a dynamic provider of the FFR service. The exact timeframes for resource recovery and acceptable level of frequency restoration shall be agreed by the TSOs.
- One respondent commented that as more experience is gained on the operation of the new regulated arrangements, and in particular the application of relevant scalars, they believed that now is the time for a review of the duration for recovery of payments under

scalars. Their experience shows that notwithstanding the provision of volumes during scalar recovery periods, providing units are penalised for an excessive amount of time. For example, where an engineering fix is carried out to a unit which improves its service provision in terms of outturn volumes, recognition of this improvement can take up to 6 months to feed through in DS3 revenues. The value of units is therefore not being fairly reflected in remuneration which undermines project revenues and business cases.

  - The TSOs welcome the comment from the respondent and would like to highlight that the scenario outlined in this example is covered by Section 5.26 Performance Testing Process. If the unit successfully completes a performance test then the scalar can be returned to 1.

- One respondent stated that in section 4 of the Protocol document it is stated that "Following development and implementation of an appropriate system, the TSOs shall publish forecasts of SNSP levels at least 2 hours ahead of real time. The TSOs shall not be liable to the Service Provider or any third party for any loss of profits, loss of use, or any direct, indirect, incidental or consequential loss of any kind that may result from use of its forecasts." With a view to improving the accuracy of forecasting DS3 service provision for periods of SNSP >60% the respondent has requested the TSOs to include in this paragraph, that the relevant system also publish the outturn values of SNSP as close to real time as possible. Insight on the expected delivery of this system is requested.

  - The TSOs acknowledge the comment regarding the publication of SNSP levels, including outturn values. Although not in the scope of this consultation we would like to update industry that testing of the forecast tool is ongoing; industry will be advised as soon as it has been implemented..

- One respondent stated that in respect to performance assessment of DS3 service reserves from wind farms in the curtailed condition they believe the active power control setpoint at t = 0 is a more appropriate reference point for determining additional power as this is the true reference point that is used in Grid Code compliance testing. The respondent would welcome further clarification from the TSOs on this subject.

  - The TSOs would like to state that this was not in the scope of the recent consultation. However, performance monitoring methods are regularly evaluated for appropriateness and accuracy.

6 Next Steps

Once the RAs have considered these recommendations and make their final decision at the Oversight Committee meeting on 9th June 2020, the TSOs will then publish a revised Protocol document for the Regulated Arrangements which will have an effective date aligned with the contract execution of successful tenders of DS3 System Services Gate 3 procurement.

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14th May 2020

RE: DS3 Protocol V.2.0 Consultation, April – May 2020 (the Consultation)

Dear Sir, Madam,

Bord Gáis Energy (**BGE**) welcomes the opportunity to respond to the Consultation on proposed changes to version 2.0 of the DS3 Protocol document (**the Protocol**).

While we welcome the early foresight offered by the TSOs in the Consultation in identifying areas of the Protocol that are under consideration for change in a future Protocol document, we do have concerns around the proposed changes to the definition and assessment of Primary Operating Reserve (**POR**). The concerns relate primarily to the lack of clarity of how levels of performance not only in POR but in products for later timeframes such as Secondary Operating Reserve (**SOR**), will be assessed and the possible compliance and revenue implications of this. We expand on this issue in section 4 below. We also take the opportunity (in section 6 below) to outline aspects of the Protocol that we believe would benefit from further clarification and potential amendment, in certain instances, in future versions of the Protocol. BGE also puts forward its views on the approach to ameliorating the data poor performance situation and avoiding the introduction of increased risks during performance assessment for units (see section 2 below). Finally, in section 3 we suggest a more stream-lined process for submitting performance reports across all products in a timeframe of 5-7 working days to minimise the burden of the reporting task and request further insight on the effect of the changes around high-frequency provision in FFR. We urge the TSOs to take these into account when finalising their recommendations for the next version of the Protocol.

Our views on the various questions put forward in the Consultation are outlined in question order below.

1. **Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?**

BGE accepts the proposals clarifying requirements around provision of the FFR service. In general, we strongly support improved transparency and clarity around requirements and expectations of service providers under the Protocol where possible. In this regard, we request that the TSOs consider and comment in their recommendations paper, on our suggestions under section 6 below regarding some Protocol elements that in our view merit further consideration from the TSO in terms of clarity or amendment.

2. **Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?**

The problem of being data poor and the related negative impact the data poor performance scalar has on service providers continues to be an issue. Last year's change to the Protocol, whereby the definition of a Frequency Event was amended, did improve the issue to an extent but more can be done. BGE is very much in favour of a solution that mitigates the exposure to the data poor performance scalar and reduces the need to book test days with the TSO to restart performance scalars.

On the face of it, it is difficult to see how much the Consultation's proposal to reduce the trigger for assessing a unit to 0.5MW for POR, SOR, TOR1 and to 0.2MW for FFR helps with mitigating the risk of being data poor. In our view the key driver for being data poor is the assessment trigger (a nadir below 47.5Hz). Our understanding is that the 1MW (or 0.5MW or 0.2MW as proposed in the Consultation)

comes into play when applying tolerances in performance assessment. In practice therefore, we believe the reductions from 1MW for each of FFR, POR, SOR and TOR1 would increase the risk of obtaining a "fail" or "partial fail" result for an event given that there are real risks that the use of SCADA data can underestimate reserve delivered. We believe the proposal will therefore likely create a new problem rather than mitigating the issue, therefore do not agree with these proposed MW reductions.

By way of alternative to the Consultation's proposal, we believe that enabling provider units to request a performance assessment from time to time (e.g. every 12-24 months where data poor situations are near materializing) warrants consideration. We recognise that this is not a straightforward solution and that consideration needs to be given to determining and attributing the costs of frequency injection response while simultaneously limiting interference with commercial trading and keeping costs down for consumers. We would welcome further engagement with the TSOs, such as through a TSO webinar, on this issue before it is finalized.

3. Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

- *Process for performance assessment of FFR*

BGE understands that the new process outlined here for performance assessment of FFR needs to be applied by existing service providers by September 2020. We note however that there is quite an administrative burden to pulling the data from a high-speed recorder into the Eirgrid format and to report the data within 3 working days is onerous. We suggest that a longer time period be given to report the data, for example 5-7 working days would be a helpful extension and should also minimise the potential impact that delayed reporting may have on performance scalar assessment and related loss of revenues.

Furthermore, we have concerns around the proposal that a single template for FFR must be submitted to the TSO after each performance incident. BGE's preference, and we believe this would be more administratively attractive for most service providers and TSOs, is in the first instance to permit data streaming from service provider to TSO (for those service providers that wish to avail of it) such that the TSO can easily and readily assess performance as and when required. If such a solution is not currently available, we urge that consideration of its benefits is considered further as early as possible.

- *Maintaining data quality of real time signals*

BGE accepts this proposal given the importance of accurate and timely real-time signals in helping the TSO to ensure that required system services are deliverable. We note however that as units age, there is a risk of recorder parts becoming obsolescent which may require consideration of alternative signalling methods in future.

- *Frequency response curve design during times of high frequency*

BGE notes that the current DS3 arrangements do not remunerate the provision of high frequency services but we consider that it should no longer be deemed a "by-product" of under frequency response and that further consideration is given to its potential remuneration. There are service providers in a position to provide these and, in the context of emerging technologies and their capabilities (alongside existing technologies), there is considerable scope for maximising this service potential particularly as the system will begin to see an increasing number of these events. The value these units can offer in these situations needs to be equitably remunerated.

We note in sections 3.4.1 and 3.4.2 the replacement of the word "mirrored" with "rotated" but would welcome some additional insight on the change and its anticipated effect. For example:

a) Is the wording change expected to have an impact on expectations around provision in high frequency events?
b) If the answer to the above is yes, in light of the requirement that a Providing Unit must have the capability to maintain its response in line with the applicable Frequency Response Curve for the extended timeframes required of POR, SOR and TOR1 in response to a Reserve Trigger, is this high-frequency response expected to apply across all these products (noting that this amendment does not appear elsewhere in the Protocol)?

c) If the answer to (a) is yes, are the current published regulated tariffs expected to cover this 'over frequency' provision or is consideration to its additional remuneration possible in future?
d) How is FFR provision in times of high Frequency performance monitored, i.e. is performance monitoring the same on over-frequency as under-frequency? It is not entirely clear from the Protocol.

4. Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

- *Removing POR Inertia Credit*
- *Removing the Alpha and Beta Governor Droop Multiplier parameters*
- *Redefinition of POR and thus the assessment of the POR service*

With regard to the suggested POR changes in the Consultation, at a high level BGE does not believe that the TSOs' statement that the potential changes have "*been observed as experience has been gained during the analysis of the POR service following a Performance Incident*" is an acceptable driver for the changes proposed: (a) given their potential impacts on expected service provision levels and (b) bearing in mind how, with increasing levels of non-synchronous output, the need for system inertia provision will grow.

The proposal to remove POR Inertia Credit has potentially negative implications for service providers and their compliance with contracted levels of service provision. Practically speaking, most synchronised units automatically provide inertia response when a Frequency Event arises. The automatic provision of this response by such units by the TSOs is recognised by the existence of the POR Inertia Credit whereby the TSO counts the provision of MW output in the sub-5-seconds timeframe, to the provision of POR service contracted levels. However, it appears the proposed removal of the POR Inertia Credit would have the effect of discounting the MWs provided in the sub-5-seconds timeframe and have a knock-on effect on the level of POR provision by the unit in question. This knock-on effect arises regardless of whether the assessment is at the frequency nadir or over the average of the 5-15 seconds POR timeframe. Furthermore, as the provision of any of the DS3 services is referenced back to the pre-event output, the response of later services (post POR timeframe) currently includes the earlier volumes provided. Discounting the MWs provided in the sub-5-seconds timeframe would therefore also have knock-on effects on the level of services subsequent to POR such as SOR and TOR1. Overall, this could have major implications for the deemed provision of services by a unit and whether it is meeting its contractual DS3 service obligations. Related DS3 revenues are thereby also put at risk.

In summary the proposal raises serious concerns about how a unit is performance assessed when the frequency nadir is sub-5-seconds and the frequency has started recovering by the time 5-seconds arrives. Anything that undermines contracted-for system service volumes creates significant revenue risk for units. To better understand the extent of potential implications, BGE requests more insight on the practical impact of the proposals and further rationale around the benefits of removing POR Inertia Credit. At a minimum, we need to understand if (i) for events where the frequency nadir occurs before the POR timeframe and the frequency is already the recovering when the POR time begins at T=5s, will the providing unit be expected to provide the full POR volume compared to the pre-event output?, and (ii) does the providing unit need to review the actual POR volume without the SIR and declare accordingly (and by corollary for all products subsequent to POR)?

Finally, in terms of the rationale put forward by the TSO for the proposed changes we disagree that the change furthers the principle of technology neutrality which is the basis on which the Protocol document is written. We support technology neutrality, but we do not see how the credit for MWs delivered in the pre-5-seconds timeframe cannot be availed of by all technologies technically capable of early inertia delivery. To target its removal is somewhat arbitrary in our view and unnecessary given the contractual implications and related revenue expectations units would have built into their respective business cases.

5. Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

BGE welcomes the statement that an assessment methodology which provides a thorough evaluation of a Providing Unit's ramping performance is currently being investigated. The current methodology that

only takes account of the performance of the unit as it transitions from an offline to a synchronised state, and not of the performance when the unit is already synchronised, is in our view wholly unintuitive.

BGE has long been opposed to using a FAIL SYNC only assessment for ramping products, especially where a unit can only provide the relevant ramping product once they are synchronised. The TSOs need to differentiate between a unit being in start-up mode or being in synchronised mode and their response to dispatch instructions up/ down the MW operational ranges for the DS3 service provision, for a more accurate way of assessing ramping. Otherwise cycling units in particular are most at risk given their higher susceptibility to picking up FAIL SYNC results. This in turn undermines investment signals and commercial viability.

If the assessment approach seeks to use EDIL instructions for performance monitoring of DS3 products that are dispatchable by the National Control Centre, then BGE strongly believes that all MWOF dispatch instructions as well as sync, desync and fail sync should be included. Our preference is for this performance monitoring approach to apply to the following dispatchable products: TOR2, RRS, RRD, RM1, RM3 & RM8.

6. Miscellaneous

BGE takes this opportunity to raise some issues it has regarding existing aspects of the Protocol document that we would welcome either a) further clarity on or b) potential amendments as appropriate.

- *Calculation of Performance Incident Scaling Factor (Qi) for Provision of FFR*

In the context of the suggested change under section 5.14.1.2 around the "*Calculation of Performance Incident Scaling Factor (Qi) for Provision of FFR*", BGE wishes to raise a concern around the level of tolerance applied "At each sample point". While a tolerance of 10% may be appropriate for the majority of measurements, we suggest that to account for example for irregular erroneous measurements or power spikes, the TSOs should permit a small number of outliers in the measurements that can be discounted from the 10%. For example, requiring that ~95% of the samples comply with the 10% tolerance would be more equitable in our view particularly in the context of emerging technologies.

- *FFR and recovery of resource*

Section 3.4 of the Protocol document relates to FFR provision. One of the requirements is that for dynamic provision of FFR, the Unit shall be able to operate without recovering its resource until the Transmission System Frequency has recovered (the exact timeframes shall be agreed by the TSOs). BGE would welcome more clarity related to the timing of the recovery of the resource. Can the recovery of the resource commence during the recovery of the Frequency after a Frequency Event occurs (e.g. during the POR, SOR timeframes) or should a relevant unit wait until the Frequency has returned to 'normal' levels?

- *Scalars and duration of impact*

As more experience is gained on the operation of the new regulated arrangements, and in particular the application of relevant scalars, BGE believes that now is the time for a review of the duration for recovery of payments under scalars. Our experience shows that notwithstanding the provision of volumes during scalar recovery periods, providing units are penalised for an excessive amount of time. For example, where an engineering fix is carried out to a unit which improves its service provision in terms of outturn volumes, recognition of this improvement can take up to 6 months to feed through in DS3 revenues. The value of units is therefore not being fairly reflected in remuneration which undermines project revenues and business cases.

- *Pre-event frequency and metrics*

With regard to a change introduced last year in the version 2.0 Protocol in section 5.7.1.2 *Pre-Event Frequency and Output*, BGE requests whether Eirgrid/ SONI can flag to a providing unit whether they have used the primary or secondary metric for determining Pre-Event Frequency for the unit when issuing the performance report. This would go some way towards informing service providers as to the accuracy of using the primary metric as a true benchmark of pre-event output.

- *SNSP*

In section 4 of the TSO Protocol document it is stated that "*Following development and implementation of an appropriate system, the TSOs shall publish forecasts of SNSP levels at least 2 hours ahead of real time. The TSOs shall not be liable to the Service Provider or any third party for any loss of profits, loss of use, or any direct, indirect, incidental or consequential loss of any kind that may result from use of its forecasts."* With a view to improving the accuracy of forecasting DS3 service provision for periods of SNSP >60% we request the TSOs to include in this paragraph, that the relevant system also publish the outturn values of SNSP as close to real time as possible. Insight on the expected delivery of this system is requested.

7. Summary and Conclusion

In summary, BGE's views on the respective questions are:

i. We support the further **clarity around FFR service provision**;
ii. We believe an **alternative proposal to mitigate the data poor performance scalar risk** is warranted such that provider units at their discretion, can request a performance assessment every 12-24 months. The consultation proposal in our view introduces the risk of creating a different problem;
iii. We believe that 5-7 working days should be permitted for **submission of performance assessment reports** and that data streaming from the service provider to the TSO be permitted (for service providers in a position to do so);
iv. The **proposed revision of the POR definition and assessment raises significant concerns** about expected POR provision volumes and the reporting of POR provision. Considerably more information and rationale for the change is requested;
v. We strongly **support the revision of the ramping methodology assessment** and ask that it is brought forward for consultation in the next Protocol document in 2020, 2021 at latest.

We would welcome consideration by the TSOs of the above views and our respective asks around clarity and further review of certain Protocol related issues outlined in Section 6 above, for incorporation in the TSOs' recommendations paper. Given the breadth and possible implications of key topics raised in this Consultation by the TSO we would welcome a TSO-hosted industry forum (e.g. webinar), should the TSOs also believe it would be helpful, before finalising recommendations on the subject matter herein.

I hope you find the above statements and suggestions clear and helpful but please do not hesitate to contact me should you wish to discuss further.

Yours faithfully,

Julie-Anne Hannon
Regulatory Affairs – Commercial
Bord Gáis Energy

{By email}

Integrated Single Electricity Market

Consultation on
DS3 System Services Protocol Document

Consultation Response from

May 2020

1 Context & Recommendations

Context & Recommendations:

Bord na Móna welcomes this opportunity to respond to this consultation.

Governance
We recognise that within the current provisions of the Protocol Document that there is an obligation to consult before making any changes. While this is a welcome provision it should be recognised that most proposed revisions to the Protocol Document expose the service provider to commercial risks, outside of normal and reasonable commercial expectations, on investments already made. This highlights the importance of proper Governance relating to such proposed changes. It is within this context, and within the context of the increasing importance of the DS3 revenue stream to service providers, as well as on increasing mutual dependence between system operators and service providers, that we make this response. This mutual dependence between system operator and service providers is what facilitates a system, with high levels of SNSP, which is operationally stable – evidenced by few frequency and voltage events.

Investor Case & Mutual Dependence
Market participants, both existing and new must have confidence in the stability of the DS3 Framework. SOs need to be aware of the need for those existing and new facilities, which are valuable to the RA's, to be remunerated to a sufficiently financially viable degree – being conscious of the limited revenue pool available to service providers across Energy, Capacity and Ancillary services and of their linked nature in overall remuneration to the Service provider/Market participant.

Given the mutual interdependence between System Operator and Service Provider, and notwithstanding the need for the DS3 framework to evolve within the regulatory and market context, there must exist an investor case for maintaining existing projects and incentivising new projects over legitimate time horizons. DS3 was not designed to be the revenue stream which would lead to exit market signals.

This timing issue is brought into focus by the proposal to make changes which could potentially have a financial impact ahead of the period over which service providers have just made financial commitments. The T-4 CY2023_24 auction has recently taken place with providers being forced to make an estimate as to what DS3 revenues will pertain from October 2023. Service providers already face the uncertainty as to what impact the Locational Scarcity loading for required services in Greater Dublin will impact their competitive positioning in making offers to the Capacity market (for CY 2023_24). Remuneration rates beyond April and September 2023 are not known under the Regulated tariff regime, nor is there visibility as to whether there will be a competitive process for providers to secure DS3 contracts from that period.

It is imperative in the context of proper governance, and the mutual dependence between the system operator and service provider that changes affecting DS3 revenue to service providers are brought about in the timeframes which match the capacity auctions and their delivery periods. Accordingly, it is currently not appropriate to change downwards the current remuneration rates until after September 2024 earliest. USPC timelines for the CY2024_25 Auction will extend this timeline further.

Furthermore, the above is without prejudice to the expectation from service providers of the continuation of regulated tariffs, and their upward revision, in recognition of security of supply & VOLL, which arises due to decreasing IMR and likely reducing RO capacity revenues.

Change & Summary of Responses to Qs
While we recognise that the service supply model is broadening by technology, we also recognise that this needs to happen on an incremental basis. With the higher levels of SNSP being targeted there will inevitably be an increased need for system inertia – where such inertia is typically provided with certainty and reliability by conventional generation such as steam turbines and gas CCGT. The unique attributes of these assets in providing reliable inertia, amongst other services, need to be fully recognised. We propose

that the regulated tariff rate for SIR be reviewed, consistent with its increasing importance and refer to the explicit recognition of this by the National Grid, UK, and two relevant links below[1].

In addition, we propose that there is strong rationale for recognition and incentivisation of green dispatchable ancillary services and would welcome further engagement in this regard.

We are strongly opposed to the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1 for reasons outlined.

In our responses, we propose that the data poor issue can be solved by an alternative proposal to that presented on the basis that the current proposal automatically punishes the service provider for good system performance, where good performance is the SO's objective. We propose that a balanced approach is required, involving testing every number of years, with successful test costs being for the account of the SOs. In effect, we call for a re-design of the data-poor performance decay factor approach.

We welcome section 3, 'Future Proposals', as it provides some insights into the general thinking and direction of travel of the SOs with regard to the future. However, we have notable misgivings as to the extent of interference suggested within the proposed removal of the POR inertia credit and the Governor Droop Multipliers. It is clear that there is a need for a Working Group to be set up, similar to the Energy and Capacity streams to assess requirements, benefits and impacts.

On a more general note where decisions are made on foot of consultations, such as this, they should be introduced in such a manner as to balance the risk between the TSOs and the Providers, and in a manner which additionally remunerates the Provider in cases where the Provider takes on additional risk.

2 SUMMARY OF CONSULTATION QUESTIONS

CONSULTATION QUESTIONS

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

We recognise that the need for FFR to be delivered with the same droop characteristic as is POR, SOR and TOR1 is primarily due to a resource issue from the SOs in that the software has not yet been developed to allow for dynamically variable droop characteristics, and that what is proposed is, in fact, an expeditious solution towards easing scheduling and dispatching for the SOs, to fulfil the FFR requirement, as well as being positioned to deliver on ROCOF requirements.

It would be hoped that this likely facilitation on behalf of the Service providers is recognised, and borne in mind in the context of balancing 'give and take' between the SOs and the Service providers, bearing in mind that the alternative more costly approach would be to mirror the UK, where we understand the decision was made to purchase a greater quantity of FFR.

[1] https://theenergyst.com/fintan-slye-inertia-is-taken-for-granted-it-will-become-much-more-important/

https://theenergyst.com/reactive-technologies-signs-commercial-deal-with-national-grid-to-measure-inertia/

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

We are opposed to this proposed reduction in threshold for two reasons

Firstly, we recognise that while the proposal is designed to reduce data poverty, we note that the proposed mechanism goes much further than that, by automatically imposing a higher pass threshold of 90% vs 50% for service MW volumes which are between the proposed reduced threshold (0.5MW for POR, SOR, TOR1 & 0.2MW for FFR) and the former 1MW level. This is because of the pass/partial pass/fail mechanics outlined in 5.8.2.6, 5.9.2.5, 5.10.2.5 & 5.14.1.2.

By proposing to reduce the threshold for this test to 0.5MW (POR, SOR, TOR1) and 0.2MW (FFR) the TSOs would significantly increase the risk that a unit will be deemed to have failed or partial failed an event, from mathematics alone.

Secondly, we have no insight, without testing, to what degree the unit can respond to a trigger at such low levels of 0.2MW and 0.5MW, while still satisfying the mechanics outlined above.

In any event, if this proposal to reduce the thresholds was to be imposed unilaterally, and without performing the testing, then this inconsistency would need to be corrected in the calculation, otherwise it would place an undue, additional, and unfair significant burden on the service provider.

On a more fundamental level there clearly needs to be a re-design of the data-poor performance scalar decay factor approach. It is not equitable that a service provider be punished because the system is operating with a low number of frequency events– even where the trigger frequency band has been reduced from +/- 0.5MW to +/-0.3MW? Is this stability and lack of events not the desired outcome? We recognise that the issue of units being data poor is likely to become increasingly prevalent for some categories of service provider as the level of renewable generation on the system increases.

This lack of events means that the system is operating with stable frequency – which is a function of, and credit to, the services being supplied by the collective service providers. The 'reward' to service providers for good behaviour is diametrically opposed by the current data poor decay provision. It is totally counter intuitive that they should they be so punished; rather they should be rewarded.

One such potential redesign could be that the units which remain data poor are tested, for example every three years, and that their performance payments do not decay with time as is the current arrangement.

Tests which fail could be at the service provider's expense; tests which pass would be for the SO's account. We note that for other services such as secondary fuel and black start provision there is a regime in place where the TSO have the facility to request a test of the provider's capability at the TSO's expense.

Bord na Móna are strongly of the view that the the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1 is flawed and that there needs to be a re-design of the data-poor performance decay scalar factor and the approach towards resolving the issue.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

1. **Section 6.23 Process for Performance Assessment of FFR and Fig 7 Process Flowchart for Performance Assessment of FFR**
   We do not have an issue with regard to the text in Section 6.23 and the process flowchart in Fig 7 in so far as they are both now stating that the TSO shall issue a template to the Providing Units following a Performance Incident, and that this template is to be completed by the Providing Unit and sent to the TSO at FFRMonitoring@eirgrid.com.

However, we note the requirement to return data in a format and resolution as defined by the TSOs – within 3 working days. We consider this too arduous for many service providers, forcing them to increase their compliance costs, raising consumer costs, with a less economically efficient solution. Providing such reports once per month would increase social welfare.

2. **Section 3.1 General DS3 System Services Operational Requirements. An additional requirement states:**
   'The Providing Unit must ensure that the data quality of real-time signals is maintained to the required standards for the duration of the Agreement'.
   We have no issue with this proposal.

3. **Section 3.4.1 and Section 3.4.2**, proposing the substitution of the word 'mirrored' by 'rotated'; we have no issue with this proposal.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

There are three proposals made.
Need for Working Group
We have notable misgivings as to the extent of interference suggested within the proposed removal of the POR inertia credit and the Governor Droop Multipliers. It is clear that there is a need for a Working Group to be set up, similar to the Energy and Capacity streams to assess requirements, benefits and impacts.

Most particularly what needs to be recognised is the transitional piece and the continuing role existing providers will have until such time as new technology is in place. Green technology providing inertia should also be recognised and rewarded – particularly when it is dispatchable.

Specific Comment
Notwithstanding these misgivings we make the following comment:

a) Removing the POR Inertia Credit
   As the running of conventional units reduces, and the role of non-synchronous providers increases, Bord na Móna recognises the need for system inertia to be maintained at appropriate levels and we refer to the critically important contribution from conventional generation.

   We have also referred above, and in previous consultation responses, to the need for incremental change in the provision of inertia and the proper recognition and reward for existing supply, which involves adequately supporting existing service providers.

   The consultation sets out that the inertia component is a carry-over from the HAS agreements and that inclusion of the inertia credit within the POR assessment has been superseded by the Synchronised Inertia Response (SIR) parameter.

   This allows appreciation of the increasing marginal value of SIR. We refer to the DS3 System Services Interim Tariffs DECISION PAPER DS3 System Services[2] of 2016 which essentially describes the 'then' perspective of the value of the delivery of SIR which was used to set its tariff rate. It is clear that the marginal value/marginal benefit from existing inertia has increased and continues to increase with higher SNSP – and that there is a case for a review upwards of the existing SIR regulated tariff value, which is based on dated reference points.

[2] DS3 System Services Interim Tariffs DECISION PAPER DS3 System Services Implementation Project 24 August 2016

We refer again to the recognition of the importance of inertia by the National Grid, UK, in the links below[3].

b) Removing the Alpha and Beta Governor Droop Multiplier parameters

The Alpha and Beta Governor Droop Multiplier parameters are clearly stated as being of use in recognising that existing providers' output may lag behind the theoretical droop response due to the physical reaction of the unit. Their effect has been to lower the expected POR requirement for some conventional units in events where there is a higher Rate of Change of Frequency (RoCoF).

Our understanding is that the RoCoF programme delivery is still underway and that the challenge which it has put to industry has been matched in good faith by participants, by and large. We believe that it is way too pre-mature to contemplate the removal of these parameters – where existing providers are meeting system requirements, and will continue to do so over a transitional period. We have highlighted in previous correspondence the need for those existing and new facilities, which are valuable to the RA's for security of supply in contributing collectively to what is an operationally stable electricity network, to be remunerated to a sufficiently financially viable degree – being conscious of the limited revenue pool available to service providers across Energy, Capacity and Ancillary services, and of their linked nature in overall remuneration to the Service provider/market participant.

Transitional Journey

At a high level, in response to Q4 a) & b) we refer again to our recognition of the transitional journey in getting from where the generation, demand side, ancillary services landscape is now, to where it needs to get to support higher levels of SNSP, emphasising the need for incremental rather than radical change. We therefore advocate an approach which allows a sustainable supply delivery model for both the System Operator and the Supplier/service Provider, while ensuring value to the consumer. In this regard, we would suggest a more cautious approach is appropriate, in place of the somewhat radical changes of some of the proposals within 4a) and 4b).

Correct Incentives

Green dispatchable ancillary services could be provided by plant which is currently aligned with the POR inertia and Governor Droop Multipliers. Removal of the Credit and the Multipliers would provide the wrong market signals to such plant by penalising, rather than rewarding/incentivising good behaviour, thereby working against the reward/behaviour natural law of justice.

c) Redefinition of POR and thus the assessment of the POR service

We do not have issue with this proposal.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

The consultation paper proposes to review the ramping assessment methodology at the behest of industry. However, the paper does not explain the context of the industry representation – to provide insight to the respondent into the nature of the potential underlying proposals, on which to base an opinion.

Bord na Móna does not have an immediate reason to support the proposal to investigate the revision of the ramping assessment process.

[3] https://theenergyst.com/fintan-slye-inertia-is-taken-for-granted-it-will-become-much-more-important/

https://theenergyst.com/reactive-technologies-signs-commercial-deal-with-national-grid-to-measure-inertia/

We do recognise that the current methodology, while suitable for a transitional period, places a disproportionate risk on services providers who have a relatively low number of starts and who could be deemed to have under-performed due to incurring a number of fail syncs on return from outage but who respond to TSO instructions to ramp without issue.

An expression of support for change would be based on an assessment process which does not punish, or take away, from the current assessment – rather its adds to those units which are currently marginalized.

We note that an earlier 2017 consultation[4] refers to 'Concerns have been raised that a unit's performance for these services should be measured against all dispatch instructions issued and not solely instructions to synchronise'.

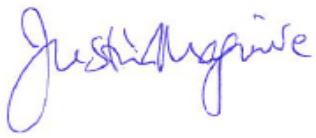
Industry needs context to be able to offer an informed opinion.

Additional Proposal: Green Dispatchable Acilliary Services

We propose that there is strong rationale for recognition and incentivisation of green dispatchable ancillary services and would welcome further engagement in this regard. The precedent is in the form of many of the scalars which are designed to reward or incentivise good behaviours.

We hope that you find these comments of use and submit them for your consideration. We would be pleased of course to discuss any aspect of our responses should you so wish.

For and on behalf of Bord na Móna



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[4] DS3 System Services Performance Scalar Design Consultation - DS3 System Services Implementation Project 13 April 2017

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14th May 2020

RE. "Consultation on DS3 System Services Protocol Document" -- Response from Demand Response Aggregators of Ireland (DRAI)

I am writing to you on behalf of the Demand Response Aggregators of Ireland (DRAI), the trade association representing Demand Side Unit (DSU) and Aggregated Generating Unit (AGU) providers in the all-island Single Electricity Market (SEM). Today, we represent over 700 MW of demand and embedded generation response across hundreds of industrial and commercial customer sites throughout the island of Ireland. These sites are managed by our eight members each of whom actively participate in the Capacity, DS3, and energy markets, within the SEM. Through the DRAI we express a single voice on policy and regulatory matters of common interest to our members.

The DRAI welcomes the opportunity to respond to the recent consultation on the DS3 System Services Protocol Document and trust that you will consider it in your deliberations.

Introduction

Demand-side flexibility holds the potential to contribute significantly towards meeting the needs of Ireland's ever-evolving power system. However, since the genesis of the DSU unit type in the SEM in 2007, the utilisation of some of their most beneficial characteristics have continued to be constrained by the lack of progress made by the TSO to appropriately account for their operational characteristics in the system scheduling tools. Continued efforts to force these unit types to conform to operational characteristics defined by conventional generation plant, only allows a limited subset of their capabilities that align with those of conventional generation plant, to be utilised and results in unfair appraisal of their value to the power system. Some key benefits of demand-side flexibility include:

1. Delivery of reserve from no-load state

Demand-side flexibility delivers increasingly valuable DS3 System Services Reserve services from a no-load state. This avoids considerable cost and carbon emissions associated with scheduling thermal plant to operate at their minimum stable generation thresholds, where they perform at their lowest thermal efficiency, in order to provide the reserve services needed to support zero carbon generation on the system.

2. Load-following availability of resources

Increasing the volume of non-synchronous renewable generation results in a corresponding reduction in the availability of essential grid services. This is due to the corresponding reduction in volume of conventional generation, which includes inherent characteristics that have traditionally provided these services. In contrast, the availability of demand-side flexibility remains proportional to the total energy consumption on the power system, matching availability and expenditure with the time-of-need on the system.

3 High confidence of delivery of declared availability

Since DSU and AGU unit types contain several individual sites in an aggregated demand-side portfolio they have an inherent flexible capability. For instance, in the case where one or more individual consumers fail to respond to an event, this will have a comparably small impact on the delivery of a required volume. In contrast a failure to synchronise or a forced outage by conventional generation results in a binary outcome, whereby required volumes are either delivered in their entirety or not at all. Optimal/Appropriate utilisation of the high confidence delivery characteristics of DSU and AGU units can therefore reduce the system requirement for contingency, in the form of replacement reserve and ramping margin.

4. Retention of value in the economy

A lack of generator and battery OEMs, or indigenous fossil fuel sources in on the Island of Ireland results in the majority of energy, capacity, and DS3 System Services payments leaving the Irish and Northern Irish economies through the recovery of capital expenditure and fuel costs. Conversely, payments to providers of demand-side flexibility result in a much greater share of electricity market expenditure remaining in the economy; returned to indigenous consumers that actively support the operation of the electricity system.

5. Reduced life-cycle carbon emissions

The provision of demand-side flexibility is supplementary to the primary activities of the individual demand sites that provide it. It is provided using equipment and processes that already exist and, as such, the build phase of their life-cycle carbon emissions will have been amortised and are not related to their availability to provide flexibility services.

It is unfortunate that the 'technology neutral' stance is being selectively used as a mechanism to ensure that new technologies conform to the characteristics of existing conventional generation. This will inevitably stifle innovation and it will slow the pace and increase the costs of the transition to a low-carbon power system. The consultation acknowledges some of the limitations of the existing TSO tools to appropriately account for units with varying response characteristics and it is loosely indicated that this will be looked at in future.

These limitations have been long-highlighted by our members and to-date, there has been little progress in this regard. The DRAI acknowledge the very positive progress that has been made in the wider DS3 Programme and the continued engagement of the Performance Monitoring team. We also recognise that the TSO has intentions for further flexibility initiatives within FlexTech. However, while the technology neutral stance is allowed to be used to enforce conformity to the characteristics of existing conventional generation, we see little chance of the required progress in this area of system tools.

The Demand Response sector has demonstrated that it has significant capability to innovate to meet the evolving needs of the power system and the contracted volumes in DS3 from DSUs highlights this capability. The success of the DS3 Programme will require that Demand Response and other potential flexibility providers have confidence that the programme will embrace the best characteristics of all technology types in order to maximise the benefits of innovation to deliver value for the system and consumers. Otherwise, there will continue to be an unnecessary and sub-optimal over-reliance on incumbent conventional generation that does not align with national and international decarbonisation objectives.

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

The DRAI has engaged with the TSO at length to highlight that the truncated methodology for assessing the provision of DS3 System Services by aggregated providers results in unresolvable technical constraints that will adversely affect aggregated unit types' ability to maximise their contribution to DS3 System Services into the future. During these engagements, we have also highlighted that the prorated response characteristic of these unit types was clearly demonstrated to the TSO during the Qualification Trial Process and that the subsequent classification of these unit types as proven technologies was understood to be acceptance of their characteristics. In addition, our members have noted that this was detailed in their technical characteristics as described in their Technical Questionnaires and submitted as part of the DS3 System Services procurement process. As such, we believe that the proposed change to the DS3 Protocol document constitutes modification to the understanding under which volumes of DS3 System Services were contracted rather than a clarification.

The chart blow depicts the profiles for prorated response and the proposed truncated response. When considering this issue, it is important to be aware that DS3 System Services payments are calculated on the basis of availability and not contracted values.

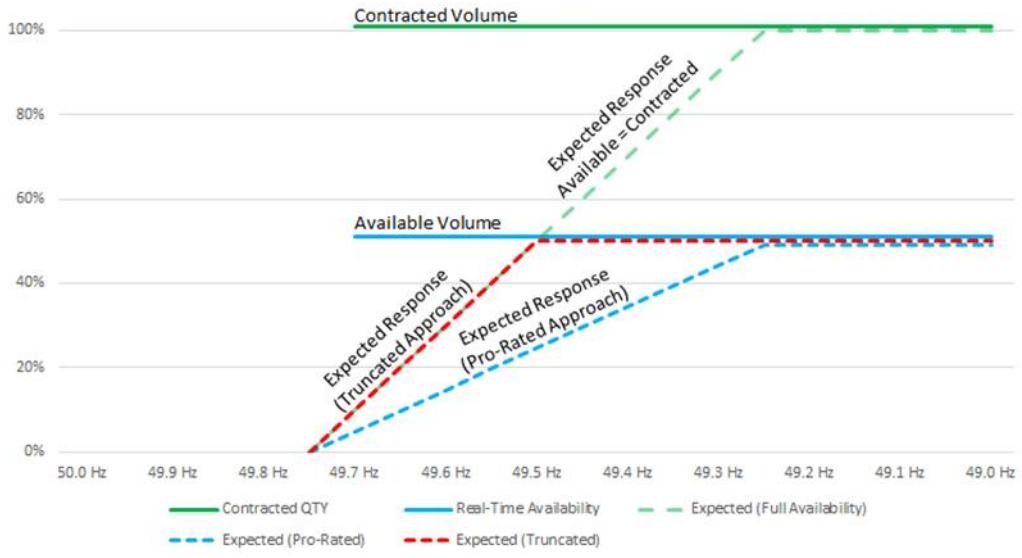

Figure 1. Frequency vs expected response based on prorated and truncated methods

The key difference between these methodologies is:

- **Prorated** requires response to be linearly increased from 0% at F_{Start} to 100% at F_{End}. In the example below, F_{Start} = 49.7 Hz and F_{End} = 49.3 Hz. Importantly, F_{Start} and F_{End} remain consistent for each service (FFR, POR, SOR, TOR1) which allows individual providers within an aggregated unit to additively increase the volume they make available to each service by distributing the trigger frequency for each underlying provider depending on the first reserve service they provide.

- **Truncated** also requires response to be linearly increased from 0% at F_{Start} to 100% at F_{End}; however, F_{End} will vary for each service based on a unit's real-time availability of that service versus the contracted value. For example:
    - If FFR-contracted is 10 MW and FFR-available is 10 MW (100%) then F_{End} = 49.3 Hz
    - If POR-contracted is 20 MW and POR-available is 10 MW (50%) then F_{End} = 49.5 Hz

  This has considerably less of an effect on non-aggregated unit types where response is typically provided by a single machine per unit and, as such, the proportionality of their availability of each service is likely to remain relatively consistent (if they are available for 90% of their contracted FFR they will be available for ~90% of their contracted POR etc.) and so their F_{End} will also remain relatively consistent across all services.

  In contrast, this has a significant effect on aggregated units where the availability of individual underlying participants, each of which start to respond in different DS3 System Service reserve intervals, varies considerably, causing a substantial difference in the unit's proportional availability for each service when compared to its maximum contracted volume for that service. This leads to unsolvable optimisation constraints that adversely affect the provision of these services.

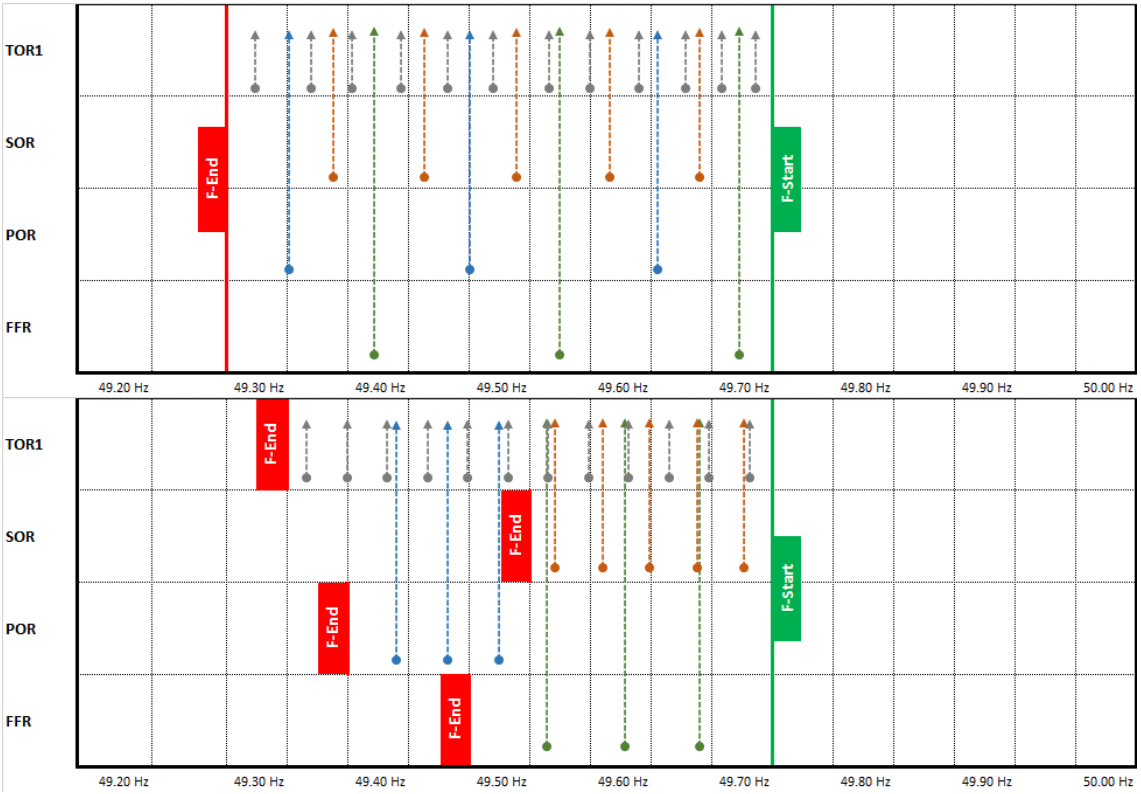

Figure 2. Distribution of trigger frequencies for individual elements of an aggregated unit, with different elements starting to provide response within different service timeframes and all continuing to respond to TOR1. ***Prorated*** *(top) shows consistent F-ends and even distribution of linear response across services.* ***Truncated*** *(bottom) shows inconsistent F-ends across services resulting in under or over delivery of response for each service depending on where the nadir falls*

A number of our members delivering DS3 services employ sophisticated algorithms that update the trigger frequencies of each element of their unit in proportion to the element's availability, in real-time, in order to provide a linear response that is proportional to a frequency delta. Every effort has been made to support the TSO's proposal for the use of the truncated method; however, our members have concluded that the only way to adhere to this method is to substantially reduce the volumes that are contracted for each service and then exclude any volumes that are available in real-time that are in excess of the contracted volume. While this would produce a response profile shape that is similar to what is sought by the TSO, it will ultimately reduce

the volume of megawatts that are made available to the TSO in real-time and the megawatt-seconds of energy that are available to arrest a falling system frequency. We believe this to be counter to the desired outcome and the interests of the power system.

DRAI members have demonstrated that the pro-rated response works. A simplified illustration of the expected response of one service is presented by the TSO in the consultation. However, this does not consider the technical challenges that arise when consistency of response across multiple services has to be achieved. We request that further analysis is provided to support the case that the same level of availability of multiple services can be provided in a predictable and controllable manner using the truncated approach when there is different levels of availability across the different reserve services (relative to their contracted capacity) within the same DSU.

The DRAI disagrees with the TSO's assessment that the truncated method "*ensures that the response profile of the Providing Unit is predictable regardless of its availability declarations*". There is no reason that the prorated method should be any less predictable than the truncated method. In addition, response in accordance with the truncated method cannot be calculated independently from availability declarations as suggested, as availability declarations are required to calculate the minimum/maximum frequency at which response will cease to increase. It appears that the proposed requirements on the provision of services are to account for the limitation of IT systems within the TSO, that were developed to model the characteristics of conventional generation plant which aligns with the truncated method, rather than requirements that best suit the evolving needs of the power system and market.

It is difficult to provide further commentary on the potential scheduling issues that are mentioned in the document as no actual detail is provided about how the current implementation of the scheduling tools is impacted by the pro-rated response. The imposition of the truncated approach does lead to a coincidental "front-loading" of response that results from the fact that the available response from DSUs in a given time-period will usually be less than the contracted capacity due to the natural variability of its constituent demand sites. However, the availability of this response is no easier to forecast and is actually less predictable and controllable when considered across multiple services within the same DSU. If the imposition of the truncated response is driven by a fundamental input requirement of the scheduling tools, we request that additional specific detail is provided so that we can comment further and explore how a more appropriate solution can be reached.

In addition, the DRAI cannot find any evidence to support the TSO's assertion that, "*This will bring the FFR service in line with the expected response characteristics of POR, SOR, and TOR1 as detailed in the current version of the Protocol document.*" It appears to us that the outcomes for the **Expected POR**, **Expected SOR**, and **Expected TOR1** definitions in the protocol document differ considerable from the method that has been proposed to determine **Expected FFR**. Those definitions utilise the concept of "governor droop" which is an inherent property of conventional thermal generators and in no way appropriate for DSUs. As we have previously pointed out the application of such a parameter for DSUs would be completely arbitrary. As a DSU usually consists of a mixture of DS3 and non-DS3 demand sites, the provision of system services is de-coupled from overall output of the unit that is used in scheduling (i.e. decoupled from the Governor Droop concept).

The non-suitability of the approach is supported by the fact that the performance monitoring methodology actually breaks down when the appropriate N/A governor droop setting that has been specified for DSUs is used in the calculations.

We note the addition of "constant MW/Hz" terminology in the FFR section. This terminology is absent from the existing definitions of POR, SOR, and TOR1 and is not consistent with the stated aim of bringing the

definition of the services in line. We believe that this reinforces our view that this consultation presents a change rather than a clarification.

The need for the DS3 System Services programme arose to address the inability of the existing generation fleet's characteristics to meet the future needs of the power system in the context of increasing volumes of renewable energy. We believe that it is entirely counter progressive to then mandate that the new technologies that are needed to support the system going forward, align their characteristics with those of legacy unit types.

We request that this proposal be deferred pending further exploration of options to improve the flexibility of the TSO's systems to account for the characteristics of new technologies that are set to become more prevalent on the power system in the medium term.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

The DRAI understand the need to reduce the performance monitoring threshold to below the minimum provider size of 1 MW to avoid smaller units from becoming data poor. We are supportive of the proposal to reduce this threshold from 1 MW to 0.5 MW for POR, SOR, and TOR1. However, the time resolution at which FFR is assessed, and the necessity for compliance at each time sample, means that any changes to the tolerance at each sample point is of high materiality to the outcome of the assessment. It is therefore important that the implications of such a change is considered in detail, and its effects understood by all provider types.

Considering this, we believe that the proposal to reduce the threshold by 80% to 0.2 MW for FFR is excessive as a single step. As such, we recommend that in this instance the threshold for FFR be aligned with the proposed threshold of 0.5 MW for POR, SOR, and TOR1 and that any further reduction be deferred for consideration as part of a future consultation once the impact of the initial change has been observed.

Building on the intent of the TSO's proposal, we would welcome consideration by the TSO of the assessment of reserve services. In particular, we would welcome consideration of the current situation whereby the successful recovery of frequency events by earlier reserve services results in providing units becoming data poor for later services. For example, if the system frequency recovers in the FFR timeframe but a providing unit continues to provide response during the POR, SOR, and TOR1 timeframe, the response following the recovery of the system frequency is not assessed and the providing unit remains data poor for those services despite having delivered response.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

- **Section 6.23: Process for Performance Assessment of FFR**
  The DRAI welcomes the addition of the provision of a performance incident template by the TSO to service providers. We are concerned that, as the provision of DS3 System Services from aggregated units increases, the requirement to collate a growing number of data sources within the allowed time limit will become increasingly challenging. We request that the TSO considers increasing the delivery time limit from three working days to five working days. We believe that this will reduce the likelihood of issues with the submitted data necessitating further reviews by the TSO and the provider and, in many occasions, shorten the duration of the overall process.

- **Section 3.1 General DS3 System Services Operational Requirements**
  The DRAI understands the importance of maintaining a high level of data quality to support the effective utilisation of services from a provider. However, the proposed text, "*The Providing Unit must ensure that the data quality of real-time signals is maintained to the required standards for the*

duration of the Agreement", makes the providing unit wholly accountable for all issues that arise in relation to the quality of real-time signals. On occasion, such issues may also result from outages or misconfiguration on the side of the TSO. To account for this, we suggest substituting the proposed text with, "*The Providing Unit must endeavour to ensure that the data quality of real-time signals is maintained to the required standards for the duration of the Agreement and must engage with the TSO without delay to resolve any issues that adversely affect the data quality of real-time signals.*"

- **Section 3.4.1 and Section 3.4.2**
  The DRAI have no comments on these changes.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

The DRAI welcomes the advanced notice of the proposals for consideration and are tentatively supportive of their objectives.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

The DRAI are supportive of the TSO's efforts to align the measurement metrics used for the performance monitoring of Ramping Margin to better reflect the reliability of a providing unit, such that they serve as appropriate signals without being unduly punitive.

On behalf of the DRAI I hope that you find our response helpful and constructive, and we look forward to hearing from you in due course.

Yours sincerely,

Dr. Paddy Finn
Co-chair, DRAI

127 Baggot Street Lwr.
Dublin, D02 F634

RE:DS3 System Services Consultation – Protocol Documents

To: DS3@eirgrid.com or DS3@soni.ltd.uk

EAI welcomes the opportunity to respond to the TSOs' consultation on the DS3 Protocol Document. We also wish to endorse the approach adopted by the TSO for this consultation, specifically flagging future changes to the Protocol Document and, in so doing, giving market participants some insight to the intended direction of travel, but we do so in a qualified manner.

The DS3 framework is a fundamental and increasingly important component of the SEM arrangements and therefore any amendments to the framework have potentially significant impacts on market participants. While we recognise the need for the DS3 framework to evolve within the regulatory and market context, and the underlying system needs, we highlight that for many market participants (and service providers) anticipated DS3 revenues are intrinsically linked to their positions taken in the capacity and energy markets. Contracted positions taken in the capacity markets are mainly in the T-4 timeframe, i.e. 4 years ahead of delivery. For the overall SEM arrangements to operate efficiently, market participants, both existing and new, must have confidence in the stability of the DS3 framework.

EAI notes that in the recent SEMC consultation on the implementation of Articles 12 & 13 of the recast Electricity Regulation there is reference to developments in system services in the context of EBGL compliance. EAI is conscious that the Capacity Market auction for 2023/24 has recently concluded and the Unit Specific Price Cap (USPC) application deadline for 2024/25 is 1 July 2020. It is likely that participants in these auction processes will have factored their position within the current DS3 framework into their capacity market bids and / or USPC applications in establishing their missing money, or floor price RO offer. In this context, it is important that, where the DS3 framework is revised, the changes are implemented such that, at the very least, there is no negative financial impact for existing participants within this applicable capacity timeframe. Making significant changes to the DS3 framework inside these capacity timeframes could have unintended and detrimental impacts on the ability of market participants to recover their costs and deliver on their contract capacity positions. It is vital therefore that changes are brought about in the timeframes which match the capacity auction processes and their delivery periods or that, at very least, there are no negative financial impacts on participants if changes are implemented within this timeframe.

The comment above is without prejudice to the expectation from service providers of the continuation of regulated tariffs, and their upward revision, in recognition of security of supply & VOLL, which arises due to decreasing IMR and likely reducing RO capacity revenues.

EAI remains of the view that the governance structure in relation to the DS3 framework should be revised so that they are more open. The codes that govern the energy and capacity components of the market (T&SC and CMC) have either dedicated representative panels to which modification proposals can be brought or a specified code modification process which includes the arranging of workshops. In either case participants can both propose and discuss potential modifications. EAI believes that there is a need for a forum to discuss potential modifications to the DS3 framework in an open and transparent manner to be instituted with this being particularly the case where there are potentially significant modifications to the framework resulting from EBGL compliance requirements. EAI does not believe that there is sufficient engagement with industry on the EBGL plans and linkages to the DS3 and energy market and would welcome more on this in 2020.

Consultation Questions:

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

EAI welcomes the additional clarity in relation to the required characteristic for the provision of FFR.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

EAI acknowledges the challenge that the performance process poses for the number of providers who are deemed data poor. However, it is considered that this is principally a function of the low number of frequency events on the system, Operational stability of the system is one of the System Operator's goals, with Service providers, collectively, being the main contributors to this happy current state of stability. Yet, under the data poor decay provision, there is the perverse situation that the Service Provider is more disadvantaged by an increasingly stable system, due to less events arising, which gives rise to the data poor problem and associated issues. The reward to service providers for good behaviour is diametrically opposed by the current data poor decay provision.

One option to address the issue of units which are data poor would be to extend the period after a service provider is deemed to be data poor from 12 to 24 months. To correct the current mis-alignment of the reward for good behaviour incentive, and to balance/compromise with what currently exists, we propose that the service provider would decide at the end of the 24 month period whether to test the unit or enter the data poor decay multiplier – that the cost of a failed test would be for the service provider's account – and the cost of a successful test outcome would be for the System Operator. The test would

be for an agreed set of services, depending on the asset and its performance, with not every service needing to be tested.

The issue of units being data poor is likely to become increasingly prevalent for some categories of service provider as the level of renewable generation on the system increases. As the running of conventional units reduces, and the role of non-synchronous providers increases, EAI recognises the need for system inertia to be maintained at appropriate levels and which is, currently delivered by conventional generation.

While the proposal is targeted to reduce the number of service providers deemed to be data poor, we note that given the application of SCADA data for the reserve performance assessment process there remains the possibility of underestimating the reserve delivered. This issue was recognised with the current assessment process by applying a specific test where the Expected Response is less than 1 MW greater than the deemed Achieved Response. In this case where the Achieved Response is >=50% of the Expected Response the unit is awarded a Pass for the event.

By proposing to reduce the threshold to for this test to 0.5MW the TSOs would significantly increase the risk that a unit will be deemed to have failed or partial failed an event due to issues with data quality.

The EAI is strongly of the view this proposal is not required to reduce MW threshold for an event to be accessible and is not appropriate in the context of available data quality given the result exposure placed on service providers.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

In relation to the amendments to the protocol document proposed:

- EAI welcomes the proposal for the TSOs to provide a template for the provision of data by FFR provider but would welcome the opportunity to review and comment on the format of the template before it is applied. We note the requirement to return data in a format and resolution as defined by the TSOs – within 3 working days. We consider this overly arduous for many service providers, forcing them to increase their compliance costs, raising consumer costs, with a less economically efficient solution. Providing such reports in a longer timeframe e.g. within 5 working days would increase social welfare.
- EAI has no objection to the insertion of the requirement to maintain real-time signals to the required standards.
- In relation to the provision of high frequency response, EAI notes that the current arrangements do not remunerate the provision of High Frequency, however in the DS3 Capped Procurement process the provision of High Frequency version of POR and SOR

was a requirement. It is considered that the assumption that high frequency response is a by-product of low frequency response is not safe from the perspective of technology neutrality and in the context of the EBGL requirements. EAI believes that the provision of high frequency response should be added to the services procured under the DS3 system services framework with an appropriate level of remuneration available to service providers.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

The inclusion of proposals for future amendments within the consultation should only be developed after analysis and assessment providing evidence that there is a requirement for such a change. As already noted above, such analysis should be presented and discussed at a suitable forum to allow open and transparent participation of all DS3 providers.

EAI would welcome further information on what the TSOs sees as the likely future system requirement for FFR and POR/SOR/TOR1, is it intended that the system constraint requirements relating to operating reserve would be potentially amended to reflect the requirement for FFR and therefore a reduced requirement to schedule the provision of POR/SOR/TOR1? Overall, it is unclear as to what the contracted volume provision and declarations for POR (and subsequent products) are expected to be under this proposal and we require considerably more information on this before commenting further.

It is worth noting, that high levels of intermittent renewable generation will need to be facilitated while maintaining system inertia, with the marginal utility of system inertia increasing with max SNSP. In this context, it would appear logical that the remuneration rate for Synchronous Inertia Response be justifiably revised upwards.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

EAI supports the proposal to investigate the revision of the ramping assessment process but notes that this issue has been raised repeatedly by services providers and while recognised has not been addressed by the TSOs to date. We therefore urge inclusion of proposals to address the issue in the next Protocol consultation.

It is considered that the current methodology while suitable for a transitional period places a disproportionate risk on services providers who have a relatively low number of starts and who could be deemed to have under-performed due to incurring a number of fail syncs on return from outage but who respond to TSO instructions to ramp without issue. We note that an assessment methodology which provides a thorough evaluation of a Providing Unit's ramping performance is currently being investigated and will be

presented in a future consultation. Our support in kind at this stage is based on an assessment process which appropriately reflects the quality of service *delivery* and which does not punish, or take away, from the current assessment – rather it benefits those units which are currently marginalized.

Conclusion

EAI welcome this consultation and the information that has been provided by the TSO in relation to the future evolution of this programme. Our response has highlighted the need for certainty in relation to future revenues, proposed reforms to the existing governance structure and addressed the specific technical questions also.

We are available to discuss this response with you in greater detail and please do not hesitate to get in touch if you need any clarifications or further information

Yours Sincerely,

Stephen Douglas
Senior Energy Policy Advisor
Electricity Association of Ireland

Submission by Energia to EirGrid on Consultation on DS3 System Services Protocol Document

14th May 2020

1. Introduction

Energia welcomes the opportunity to respond to the TSO Consultation Paper titled "Consultation on DS3 System Services Protocol Document" (the "Consultation Paper") and the redlined Protocol Document under review ("the Protocol Document").

In respect of the proposed changes to the Protocol Document, Energia wishes to highlight that we are supportive of more robust governance process being established to facilitate these changes. This would include an appropriate panel being established to discuss proposed changes, including the facilitation of workshop forums where required. This will allow potential changes to DS3 framework documents to be discussed and the required evidence to justify proposed changes to be presented. In addition, as a member of The Electricity Association of Ireland (EAI), Energia are aware of the EAI response to the Consultation Paper and fully support the EAI response.

We have outlined our responses to the specific questions in the Consultation Paper below.

2. Specific Questions

Proposed changes to the Protocol Document

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

The additional text that has been included in section 3.4 of the Protocol Document provides additional clarity in relation to the provision of the FFR service. This is Energia's understanding of how units should respond when availability to provide services is declared to a value lower than their contracted volume and we therefore welcome this clarification.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

Energia welcome the intent of the proposal to reduce the number of units that are entering into the data poor performance scalar assessment methodology. The method of doing so being proposed in the Consultation Paper is to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1. The threshold used to determine when to performance monitor FFR is proposed to be reduced from 1MW to 0.2MW whilst the threshold used to determine when to performance monitor POR, SOR and TOR1 is proposed to be reduced from 1 MW to 0.5 MW. However, whilst the intent behind the proposal is to be welcomed further clarity is needed to ensure that this will achieve its objective.

The issue of data poor is becoming more prevalent in the system due to the state of stability, with the number of frequency events on the system is decreasing. However, it should not be the case that service providers are penalised as the system becomes more stable due to the fall in the frequency of events arising and therefore the issue of data poor becoming more prevalent. Consideration must be given to how a reduction in the number of frequency events does not correlate with more units entering into the data poor performance scalar assessment methodology.

An alternative option to that proposed in the Consultation Paper may be to extend the period after a service provider is deemed to be data poor from 12 months as it currently stands to 24

months. This will potentially allow for more frequency events to occur and therefore to be assessed. If required, the service provider would decide at the end of the 24 month period whether to test the unit or enter the data poor performance scalar assessment methodology. Furthermore, it could be the case that the cost of a failed test would be for the service provider's account whereas and the cost of a successful test outcome would be for the TSO. Such alternative methods should be considered by the TSO in relation to the issue of data poor with the overarching fundamental point being that service providers are not unfairly penalised from a more stable system.

Question 3: Do you have any comments on the additional changes in the Protocol document as detailed in Section 2.2.1?

Energia have reviewed the various minor modifications that have been proposed to the Protocol Document to ease the understanding of, and further develop the requirements and procedures being presented and have no further comment on these changes.

Future Proposals

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

Removing POR Inertia Credit

Energia have strong concerns regarding the removal of the POR inertia credit and are opposed to the proposal. Energia would highlight that the POR inertia credit was initially introduced following a TSO led working group recommendation in 2015[1]. The inertial credit was introduced to reflect the characteristics of synchronous units when responding to a frequency event. When the frequency is recovering the unit will be absorbing energy from the system and the therefore the POR provision will be reduced. The inertial credit offsets this reduction in POR provision.

The Consultation Paper incorrectly states the justification for the provision of POR inertia credit as *"their purpose was to recognise the initial inertial response being delivered by synchronous generating units in advance of the POR timeframe"*. However, their purpose was actually to reflect the characteristics of synchronous units during frequency transients. The Consultation Paper also incorrectly states that *"retaining the POR inertia credits in the assessment of DS3 SS is no longer necessary as Providing Units can now avail of payment for the SIR and FFR services when they provide reserve in advance of the POR timeframe".* Regardless of the SIR and FFR payments, synchronous units POR provision will be reduced when the frequency is rising, and this should be reflected in POR performance assessment. Therefore, as the initial rational for the introduction of POR inertia credit is still valid, we are strongly opposed to the proposal for its removal.

In addition to the above opposition to the proposal to remove POR inertia credit, Energia would also advocate that such proposed changes to the performance assessment of the provision of DS3 products is progressed at a working group forum. This would give both the TSO an opportunity to outline rationale for proposed changes and present the appropriate evidence to support it and allow the service providers to fully assess the proposed changes.

[1] POR Performance Assessment for Synchronous Generation Units Working Group, 17 September 2015

Removing the Alpha and Beta Governor Droop Multiplier parameters

Whilst Energia have no direct comment on this proposal, as outlined above we would recommend that any proposed changes to the assessment of the provision of DS3 product is progressed at a working group with the provision of appropriate evidence to justify any proposals.

Redefinition of POR and thus the assessment of the POR service

Energia have advocated in previous consultations that the POR assessment should be aligned with SOR assessment, with the POR assessment based on the average provision requirements between 5 and 15 seconds. We are therefore supportive of the initial proposal put forward and would welcome an opportunity to discuss this further at an appropriate working group forum.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

Energia are of the view that the current ramping assessment methodology is flawed and therefore support the proposal to review the ramping assessment process. The assessment to provide this service should be based on the generator unit's ability to follow all dispatch instruction rather than only assessing the FAIL SYNC instruction as is currently the case. It is disproportionate to only apply an incentive in relation to this sole instruction when generator units are continually providing other ramping services which are not being recognised.

Energia would therefore welcome a review of the ramping assessment methodology and would support this being progressed in a working group as per our comments above.

EP Kilroot

EP Ballylumford

Response to the proposals to amend the DS3 System Services Protocol Document – Regulated Arrangements, Version 2.0, issued on 8 April 2020

on behalf of

EP Kilroot Ltd and EP Ballylumford Ltd

12 May 2020

1. General Comments

EP Kilroot Limited (**EPK**) and EP Ballylumford Limited (**EPB**) welcome the opportunity to provide feedback on the proposals to amend the DS3 System Services Protocol Document – Regulated Arrangements, Version 2.0, published 1st May 2019.

2. Specific Responses to the questions raised in the consultation

Question 1: *Do you have any comments in relation to this clarification regarding the provision of the FFR service?*

No queries

Question 2: *Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?*

No major concerns, however, the reduction in the threshold will require an increase in the frequency of reporting. Has an assessment been made on this additional reporting volume requirement?

There is a concern regarding the impact of the 'poor data scalar' is disproportionate to the cost of the testing programme required to reset the data scalar. Recommend that data poor assessment should be subject to a minimal testing programme to reset. The impact of the current regime is that given the cost of testing, against the revenue from these reserve products, in particular for peaking / emergency start service providers, it is likely that the 'poor data scalar' will likely hit zero. Thus, leaving the providing unit questioning why offer any reserve products on these units at all.

Question 3: *Do you any comments on the additional changes in the Protocol document as detailed in Section 2.2.1?*

The timescales around the TSO issuing the template to the providing unit need to be clarified. The 3 working day return term is too onerous on the service provider. Recommend monthly response times.

Question 4: *Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?*

The assessment criteria moving to average over the 5 – 15 secs is a reasonable approach. Clarification on the calculation of the averaging methodology needs to be provided.

The removal of the provision of the POR Inertia Credit penalises providing units acting within 2 – 5 second (before POR, but too slow for FFR). In addition, the Alpha and Beta Governor Droop Multipliers identified the actual technical parameters of existing conventional plant that enables the TSOs to schedule on the actual potential responsiveness of POR providing units. Moving away from these and using standard

products will inevitably lead to more performance breeches for the conventional generators and the removal of services currently valued by the TSOs. Consideration should be given to including a product scalar for faster response for POR, similar to that for FFR to incentivise service providers.

Question 5: *Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?*

Ramping margin assessment methodology needs considerable thought and engagement with providers. The failed sync process is particularly punitive for emergency start / peaking service providers which are called sporadically throughout the year. One failed start could cost the providing unit the equivalent of 3 months ramping product revenues by the time the penalty works its way out.

Energy for generations

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ESB Generaton and Trading Response:

DS3 Protocol Document Consultation

14th May 2020

General Comments

ESB Generation and Trading (ESB GT) welcomes the opportunity to respond to the consultation on the amendment of the DS3 Protocol Document. The DS3 framework has become an increasingly important component of the SEM arrangement over the last few years and therefore any amendment to the framework have potentially significant impacts on market participants. ESB GT recognises the need for the DS3 framework to evolve with the SEM's regulatory and policy context and the underlying system needs. ESB GT supports the approach of the TSOs in the consultation by signalling future changes to the Protocol Document and in so doing giving market participants sight of the direction of travel.

ESB GT notes that in the recent SEMC consultation on the implementation of Article 12 & 13 of the recast Electricity Regulation there is reference to developments in the area of system services in the context of EBGL compliance. ESB GT is also conscious that the Capacity Market auction process for 2023/24 has recently concluded. It is likely that participants in this process will have factored their position within the current DS3 framework into their capacity market bids. In this context it is important that where the DS3 framework were to be sigficiantly revised that the changes are implemented outside of the contracted capacity timeframe for existing participants. Making significant changes to the DS3 framework inside the contracted capacity timeframe could have unintended and detrimental impacts on the ability of market participants to deliver on their contract capacity positions.

ESB GT remains of the view that the governance structure in relation to the DS3 framework should be revised so that they are more open. The codes that govern the energy and capacity components of the market (T&SC and CMC) have either dedicated representative panels to which modification proposals can be brought or a specified code modification process which includes the arranging of workshops. In either case participants can both propose and discuss potential modifications. ESB GT believes that there is a need for a forum to discuss potential modifications to the DS3 framework in an open and transparent manner to be instituted with this being particularly the case where there is are potentially significant modifications to the framework resulting from EGBL compliance requirements.

Consultation Questions

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

ESB GT welcomes the additional clarity in relation the required characteristic for the provision of FFR.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

ESB GT understands that the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1 is principally to address the degree to which some service providers are impact by being designated as data poor. Further it is accepted that the TSOs, acting prudentially, require assurance through the DS3 framework that the contract levels of service provision will be delivered when required. As such ESB GT acknowledges the challenges faced by the performance process within the number of providers who are deemed data poor. However, it is considered that this is principally a function of the low number of system frequency events on the system which in itself a positive. The proposal to reduce the MW threshold for an event to be assessible under the framework for FFR, POR SOR and TOR1 will on the margins result in an increase in the number of assessed events. However, it is considered that there will remain a significant number of units with low running hours for whom being data poor will remain an issue. ESB GT notes that for other services such as secondary fuel and black start provision there is a regime in place where the TSOs have the facility request a test of the providers capability at the TSO's expense. One option to address the issue of service providers who are data poor could be for the TSOs to have the facility to request a test of the service providers capability with the cost of a successful test being recoverable by the service provider from the relevant TSO. The cost of this regime, at a testing interval of 12-24 months would be relatively low in the context of the overall DS3 framework and would offer significant assurance to the TSOs and therefore would be to the benefit of the end user. The issue of units being data poor is likely to become an increasingly prevalent as the level of renewables on the system increases the running of conventional units and the role of non-synchronous providers increases.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

In relation to the "additional changes" to the protocol document proposed:

- ESB GT welcomes the proposal for the TSOs to provide a template for the provision of data by FFR providers but would welcome the opportunity to review and comment on the proposed template before it is finalised also the current process flow for FFR assessment calls for providers to return the 20mSec data to the TSOs by Working Day+3, ESB GT considers this requirement is overly onerous and a Working Day+5 timeline would be more appropriate;
- ESB GT has no objection to the insertion of the requirement to maintain real-time signals to the required standards;
- In relation the provision of high frequency response, ESB GT notes that the current arrangement does not remunerate the provision of High Frequency however in the DS3 Capped Procurement process the provision of High Frequency versions of POR and SOR was a requirement. It is considered the assumption that high frequency response is a by-product of low frequency response is not safe from the perspective of technology neutrality and in the context of the EGBL requirements.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

The proposals for future amendments are welcome, ESB GT would welcome further information on what the TSOs sees as the likely future system requirement for FFR and POR/SOR/TOR1, is it intended that the system constraint requirements relating to operating reserve would be potentially amended to reflect a requirement for FFR and therefore a reduced requirement for POR/SOR/TOR1?

In relation to the proposals to amend the performance assessment of POR, ESB GT notes that the proposals are reflective of changes in the system dynamics, it is worth noting however that even as the level of renewable increases on the system it is possible that there will be periods when there will be high levels of system inertia due to low levels of synchronous generation on the system e.g. a calm cold February evening. It is important to ensure that any revision the POR performance assessment is robust to this scenario and results in an appropriate measure of a service providers delivery.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

ESB GT supports the proposal to investigate the revision of the ramping assessment process. It is considered that the current methodology while suitable for a transitional period places a disproportionate risk on services providers who have a relatively low number of starts and who could be deemed to have under-performed due to incurring a number of fail syncs on return from outage but who respond to TSO instructions to ramp without issue.

If you have any questions in relation to any of the points raised in this response, please do not hesitate to contract me to discuss further.

Yours sincerely,

William Carr

Regulation, ESB Generation and Trading

Greencoat Renewables PLC
Riverside One
Sir John Rogerson's Quay
Dublin 1

14th May 2020

Dear EirGrid and SONI,

Thank you for the opportunity to respond to the consultation paper published on 8th April 2020 "Consultation on DS3 System Services Protocol Document".

Greencoat Renewables PLC "Greencoat" is an investor in euro-denominated renewable energy infrastructure assets and is focused on the acquisition and management of operating wind farms in Ireland. It is managed by Greencoat Capital, an experienced investment manager with more than €4.0 billion under management (over 2GW of renewable projects) and a track record of making acquisitions and delivering strong shareholder returns in the listed renewable energy infrastructure sector. It owns several operational windfarms in Ireland contracted for FFR, POR, SOR and TOR1.

There are important changes to DS3 monitoring regime and FFR product definition proposed in this paper. Further future changes to POR (and ramping services) are also flagged for consideration.

Greencoat's overarching comment is that these changes will potentially impact currently contracted windfarms which tendered based on the available rulesets at the time. We are of the view that the changes to the FFR product definition and the DS3 monitoring thresholds for FFR through to TOR1 are sufficiently material to put certain DS3 system service providers at risk of material reductions in Performance Scalar – reductions which would not occur if the providers tendered volumes of service which could be confidently delivered in line with the product specification and monitoring tolerances.

Whatever changes are made should only come into effect once the next tendering round for DS3 System Services allows for volume uncapped providers to properly assess the implications and adjust their contracted volumes accordingly.

We have further comments in relation to the specific changes in the services below.

Yours sincerely,

Patrick Maguire
Greencoat Renewables

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

Greencoat's over-arching comment in relation to the timing of the changes in relation to the DS3 system services contract cycle applies.

These following comments are all subject to Greencoat's ongoing technical review of their windfarm portfolio which unfortunately at the time of this response is not yet completed.

Greencoat's windfarm portfolio comprises several different wind turbines from several different OEMs. As yet, we have not had the opportunity over the consultation period to impact assess whether the emulated inertia product or provision of FFR from a curtailed/constrained position can comply with the proposed changes, i.e. the rate of change of active output in relation to frequency response being invariant with the available FFR capability of the windfarm. It appears to be applying a conventional generation characteristic to all classes of DS3 FFR system services provider.

While we have not yet completed our technical review, it would also be somewhat unfortunate if FFR – a product designed with windfarm response in mind – was now more difficult to provide from windfarms.

Finally, as a general observation, the technologies which connect to and support the transmission system will become more varied, more distributed and with more diverse characteristics. This consultation appears to have a theme of "commoditizing" the DS3 system service response requirements. Perhaps this is an inevitable consequence of both the cost and complexity of considering more inclusive product design (as noted in the consultation paper with regards to the difficulties with incorporating variable droop response), or a necessity arising from the need to have standardized cross-border products under the EU Network Codes. Nevertheless, strategically there will be fewer of these "conventional standard" providers of system services connected to the transmission system over time, and the system security support provided from all classes of connectees will need to be valued, scheduled and remunerated based on those diverse characteristics in due course.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

Greencoat's over-arching comment in relation to the timing of the changes in relation to the DS3 system services contract cycle applies.

Greencoat supports the principle in increasing the number of eligible events to support the calculation of the performance scalar.

Greencoat, however, have several windfarms which cannot provide DS3 system services because they cannot meet the minimum requirements for provision of at least 1MW of service. The TSO is now proposing to monitor FFR provision at 0.2MW and POR, SOR and TOR 1 at 0.5MW granularity.

Greencoat is of the view that if there now can be a material difference in performance scalar within 0.2MW / 0.5MW tolerance of response, DS3 System Services providers should be allowed to contract

for minimum volumes of those services in line with those tolerances, i.e. minimum procurement volumes for FFR should be 0.2MW and 0.5MW for POR through to TOR 1.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

No comments.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

Greencoat's over-arching comment in relation to the timing of the changes in relation to the DS3 system services contract cycle applies. These are material potential changes to the provision of the POR services, and these should be made clear before any new procurement contracting window and come into effect at the start of said contracting window.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

No comments.

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14th May 2020

RE. "Consultation on DS3 System Services Protocol Document"

GridBeyond welcome the opportunity to respond to this consultation.

We believe that Demand Response is the key to the power system of the future. There is significant flexibility that exists behind the meter across the Island, a significant portion of which is still to be captured. As a demand response aggregator, we are committed to harnessing this capability and ensuring that this most cost-effective method of flexibility service provision is utilised to its full extent.

We have concerns around the proposals in this consultation document in terms of the unintended consequences from its implementation. Whilst we have engaged with the TSO on the issue of truncated versus prorated service provision, we feel that perhaps the consequences of implementing one versus the other are not fully appreciated. The implementation of the truncated approach could significantly impact the development of the demand response industry and disincentivise participation by C&I customers who could and are providing significant existing flexibility to the grid.

Please find our responses to the specific questions below. Please note, in addition to this submission we offer our full support to the DRAI submission to this consultation.

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

Whilst GridBeyond welcome the inclusion of clarifications to the System Services Protocol document to ensure no confusion, we do not believe that this is a clarification to the provision of the FFR service. We believe that this is a fundamental change to the provision of FFR that was approved during the Qualification Trial Process, highlighted during the Technical Documentation submitted by

DSU providers under the DS3 tender and subsequently demonstrated continuously by DSU providers.

Through DRAI, GridBeyond has engaged significantly with the TSO to discuss this issue which stemmed from a new method of performance monitoring implemented by the TSO in summer 2019. We explained how DSUs provide services, the specific GridBeyond algorithms and the impacts to our customers of fundamentally changing the provision of this service when contracts for service provision have already been issued. We appreciate the engagement we received from the TSO in this regard but find it very confusing that having agreed to revert to the pro-rata approach of performance monitoring in January 2020 that this consultation shows a U-turn in that decision.

We believe that the TSO have previously acknowledged that the performance of System Services may not be at their contracted values at all time due to availability and that forms part of the reason for the implementation of an availability aspect to payments, i.e. participants are only paid for what they are available for. Whilst we feel that is appropriate, we do not agree with the TSO then assessing performance based on contracted volumes not available volumes.

Specifically, for aggregators providing System Services there is an added aspect which is the actual customer providing the response to the aggregator. Providing a truncated approach makes it very difficult for a DSU operator to provide an approximation of service provision or impact to an individual IDS as there is a high dependency on other IDS' within the portfolio. Further to this, there are certain IDS' providing faster services that will be impacted by more events than other IDS' who are providing slower services without being remunerated fully for that service provision. The truncated approach can negatively impact IDS' and their willingness to participate in service and in particular sophisticated levels of service such as dynamic provision or faster service provision. This could negatively impact the activation of the existing behind the meter flexibility that will inevitably be key to reaching 70% renewables by 2030 and beyond.

The TSO state that "*The introduction of a dynamically variable droop characteristic adds an additional layer of complexity to an already complex optimisation problem. While the TSOs will look at facilitating service providers with dynamically variable droop characteristic in future it must be noted that the facilitation of such providers would likely require modifications to scheduling and modelling software as well as to the performance monitoring tools"* We don't believe that this is an appropriate statement from the TSO for two main reasons: the TSO should not be limiting the participation of new technologies in System Services due to existing software complexities, nor should they be forcing new technologies to seek to provide services in exactly the same way as conventional generation. We discuss these two points in more detail below but would like to suggest at this stage that perhaps the TSO can take the EDIL declarations from participants and use that as

the variable for contracted unit capacity instead of the fixed contracted capacity when modelling and viewing system in real-time. This would then enable participants to respond to our actual capability at a point in time and get paid for what they are actually available for.

1. Whilst we acknowledge that there may be scheduling and dispatch issues for the TSO through existing tools in the control centre, we do not agree that this should be a reason for the TSO to limit new technologies from participating in System Services or the wider energy market. The move towards a more carbon neutral, renewable centric system will require significant engagement and participation of new technologies. Similar to when wind generation began to connect to the power system, new tools, and new ways of thinking in relation to characteristics were then and are now required. The term technology neutral, whilst in the main a relevant necessary sentiment, cannot be a go to term utilised when newer technologies seek to participate. Demand Side Response and storage technologies for example require different ways of thinking in order for their full capability to be recognised.

2. Governor droop is traditionally a conventional generator term. There has been consideration given to this in the wind Grid Code where a new term has been developed for droop for a wind farm. There has also been consideration given to this in the Schedule 9's for System Services where the governor droop characteristic is signified with an 'N/A' as not applicable for this type of service provider. The TSOs have also deliberately set out different types of provision of FFR and other frequency response services; static, stepped static and dynamic. To now look for a response based around 'governor droop' from a provider that is fundamentally different in characteristic to a conventional generator, when they have previously acknowledged and allowed for those differences, seems strange. Forcing new technologies to now operate to limitations set by conventional generation in delivering new services will limit the capability and volume that can be brought to market.

GridBeyond disagree with the TSO's assessment that the truncated method "ensures that the response profile of the Providing Unit is predictable regardless of its availability declarations". We believe that there is no reason that the prorated method should be any less predictable than the truncated method.

We feel that the implementation of the truncated approach to service provision will significantly limit the industry and that there is no feasible way to implement this approach without significantly reducing contracted volumes resulting in significant loss of capability from behind the meter flexibility which based on this consultation seems to be purely based on a concern that existing control centre tools are not sophisticated enough and a requirement for like for like service provision with conventional generation.

If however the TSO do elect to implement this change to the System Service Protocol, GridBeyond would like the TSO to at least develop a methodology for participants to reduce their contracted capacity of our units as and when required as availability will no longer be the only consideration in performance monitoring and settlement.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

We agree with the DRAI suggestion that the FFR performance assessment threshold would align with the POR, SOR and TOR1 assessment of 0.5 MW. We do not understand why the TSO would select 0.2 MW for one service, albeit a faster service. Whilst we understand the importance of assessing performance, we feel the jump from 1 MW to 0.2 MW might be unnecessary.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

GridBeyond welcome the provision of a performance incident template to participants and agree that this will be very useful to industry.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

Not at this time, but we welcome the advance notice that there may be changes in the future.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

Not at this time, but we welcome the advance notice that there may be changes in the future.

Consultation on DS3 System Services Protocol Document May 2020

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

No comment provided.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

In principle, Indaver supports the appropriate monitoring of all reserve types in a non-discriminatory manner.

The consultation states that the threshold for evaluation of the above services is being done to in order reduce the number of "data poor" units under the performance scalar methodology. If that were the reason for the change, only the threshold at which a frequency event was considered within the performance scalar calculations would need to be changed.

In the protocol document, however, the tolerance within which the actual reserve response is supposed to meet the expected reserve response is also reduced in line with the reduction in thresholds. This has nothing to do with resolving data poor performance scalars and is not discussed within the accompanying consultation paper.

As a small provider of such services, Indaver would need to assess those new tolerances against its tendered volumes for each service. It is, however, limited under the contracting regime to provide at least 1MW of all operational reserves types. If Indaver determines that it can deliver, for example, 0.9MW of a service based on its historical real-world performance to date, then Indaver faces a material risk based on its real world performance if it has to commit to providing 1MW of that service.

Indaver cannot participate within an aggregator due to its size. If EirGrid as TSO does not wish to procure volumes less than 1MW, then there is an unduly discriminatory barrier of rules which would prevent Indaver from delivering its service to the TSO with the tightening of these tolerances.

Indaver, on balance therefore:

a) Supports the reduction in the thresholds; and

b) Wishes to support the coming into effect of the reduction in tolerance of the measurement of operational reserves, but can only do so when:
    a. The minimum procurement volume of those services is reduced pro-rata to the new threshold/tolerance; and
    b. The changes only take effect post the next procurement round.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

No comment.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

As before, Indaver Ireland's concerns with these proposals are as per our response to Question 2: if the monitoring of a service changes, it effectively changes the required service. As a smaller provider of operational reserve volumes, we believe that any minimum threshold for procurement should be also reassessed to ensure non-discrimination against smaller providers of DS3 system services.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

No comment.

DS3 System Services Consultation – Protocol Document 8th April 2020

This questionnaire has been prepared to facilitate responses to the consultation. Respondents are not restricted to this template and can provide supplementary material if desired.

Please send responses in electronic format to DS3@eirgrid.com or DS3@soni.ltd.uk

Respondent Name	*Frank Burke*
Contact telephone number	*00353579361600*
Respondent Company	*Lumcloon Energy Limited*

Note: It is the TSOs' intention to publish all responses. If your response is confidential, please indicate this by marking the following box with an "x". Please note that, in any event, all responses will be shared with the Regulatory Authorities.

Response ☐ **confidential**

Question	*Response*
Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?	This is an important clarification that the % on the Frequency Response Curve Y-axis is % **Contracted** and not % **Available**. This affects how the control system of a BESS plant is set up. (This is actually clearer in the Protocol document than it is in the consultation document although, in the latter, Figure 1. Expected Response Characteristic for Static Reserve is a clear illustration of how plant with limited availability is expected to respond.)
Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?	We do not have any comments
Question 3: Do you have any comments on the additional changes in the Protocol document as detailed in Section 2.2.1?	It is not clear what section this question refers to. However it is just after the section on Response to Over-Frequency so we take it to apply to this item. The requirement of EirGrid for overfrequency response is still unclear. In the regulated arrangement contract, there is no over-frequency requirement. However, in the signal list, 5 modes contain trigger point and trajectory for over frequency although the *Active Maximum overfrequency response setting (MW)* is set to zero for all except mode 2 where it is set to the MIC. If the Regulated Arrangements contract is ever changed to include over-frequency response, then it would be useful to modify Fig 2 in section 3.4.1 of the Protocol document to show over-frequency response. This will show that the contracted Trajectory (Hz) for under-frequency response also applies to over-frequency response but that the contracted over-frequency response MW may be less than the contracted underfrequency response MW (when MIC < MEC) so that the MW/Hz would be less.

	It is assumed that reference to Section 6.23 is just a typo and refers to Section 5.23 in the protocol document. Regarding Section 5.23, we agree that it is desirable to automatically generate a report according to a standardized template, issued in advance. It is not clear why EirGrid need to issue the template each time. Our concern would be that the template would be changed and this would create difficulties as the performance monitoring system would be programmed to automatically populate a predefined template and would have to be reprogrammed if the template were changed.
Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?	We agree with the proposal as outlined.
Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?	We agree with this approach.

Consultation on DS3 System Services Protocol Document, April 2020

Moyle Interconnector Response

These comments are submitted by Moyle Interconnector Limited, 'Moyle', as a provider of dynamic FFR, POR, SOR, TOR1, TOR2 under the enduring regulated arrangements. The frequency response service provided by Moyle has been delivered under bilateral, HAS and DS3 SS contracts for many years, and the characteristics of its delivery have continually been adjusted in accordance with feedback and requests from the SONI team, in order to provide maximum value to SONI.

Moyle welcomes the opportunity to comment on the proposed changes to the protocol, which is a critical document in the DS3 System Services contractual framework. In this response we offer replies to the SOs' specific questions set out in the consultation paper, but also comment on the continuing absence of detail on FFR performance assessment.

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

We offer no comment on this question.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

We have concerns about the proposals to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1.

On FFR, providers are required to have measurement devices that satisfy the 'DS3 Performance Measurement Device Standards for Fast Acting Services'. This requires accuracy of power measurement of ± 0.7 %, which for a 500 MW unit such as Moyle is ± 3.5 MW. While the present 1 MW assessment threshold has not proved unsatisfactory to date, moving to a 0.2 MW threshold presents a measurement risk.

On POR to TOR1, we note that the same change is effectively proposed for TOR2 also (for frequency response, as opposed to dispatch), which according to section 5.11.1.1 uses the same methodology as that for TOR1.

On POR to TOR2, the proposal is to reduce the threshold from 1 MW to 0.5 MW. For POR this threshold applies at the instant of the frequency nadir in the POR window only, while for SOR to TOR2, the threshold is applied to the average delivery over the product period.

Noting that performance assessment of POR to TOR2 is carried out using the TSOs' SCADA data, we have from time to time observed quite significant differences, of the order of a few MW, between the SCADA data used in performance assessment and the measurements reported by more accurate event recorders such as those used for performance assessment of FFR. Reducing the performance assessment threshold to 0.5 MW, especially for POR where the assessment is at a single data point in the ten second window and the minimum SCADA resolution is 1 Hz, is likely to result in inconsistent conclusions depending on the data source used.

In the case of the changes to both FFR and POR to TOR2, we recommend the TSOs consider the prudence of implementing significantly smaller thresholds in the context of the available measurement data and the TSOs own standards for measurement devices for fast services. Preferably the thresholds should remain unchanged until the proposed lower thresholds are proven through a QTP trial, which has been the approach applied to novel approaches proposed by providers.

Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?

We offer no comment on this question.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

We agree with the proposals in sections 3.1 to 3.3 of the consultation paper to remove the POR inertia credit, as well as the alpha and beta governor droop multipliers, and to assess average POR provision, for the reasons the TSOs have set out. This would also mitigate the measurement risk from reducing the assessment threshold to 0.5 MW (see above).

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

We offer no comment on this question.

FFR Performance Assessment

In addition to the specific questions we must comment on the approach to FFR Performance Assessment.

In the TSOs' consultation on the draft of the current version (2.0) of the protocol we commented specifically on performance assessment for FFR, which was not adequately described at that time. Prior to that consultation, in 2018 and an anticipation of contracting for FFR, we had explored how FFR performance assessment could be conducted in dialogue with the EirGrid team. We are aware that other providers have had similar dialogue with SONI or EirGrid.

It was disappointing then to find that the current version (2.0) of the protocol when published still did not include adequate detail on performance assessment for FFR in section 5.14.

Since publication of the current version (2.0) of the protocol Moyle contracted with SONI for FFR. During that process we found the nomination of an optimal reserve response time particularly challenging because that there was no common understanding between SONI, EirGrid and Moyle about how delivery of FFR should be assessed, which is a critical precursor to nominating a reserve response time in the contract. Clearly any providing unit must have clarity on how delivery will be assessed in order to elect its contracted parameters. The absence of a published approach made this process harder than necessary for Moyle and SONI.

We have since re-visited our understanding of how delivery of FFR should be assessed and are somewhat satisfied that our and EirGrid's understanding are aligned. That said, the approach is still not published and we are effectively relying on ad-hoc e-mail exchanges in support of the contract. This is clearly undesirable since it presents an ongoing contractual risk to both Moyle and SONI.

Given the historic dialogue between EirGrid, SONI and providers of FFR, it is surprising and disappointing that the approach to FFR performance assessment is still not included in this draft update of the protocol. We know that delivery of FFR is assessed, so it must be possible to publish the method of assessment. We request that the full approach to FFR performance is set out in the updated protocol as a priority.

For clarity, our understanding of the FFR performance assessment method is set out below. This is taken from an e-mail exchange and discussion with EirGrid in August 2018:

> Following t=0 at the Reserve Trigger frequency, and noting the Pre-Event Output is the average between -1.5 s and -0.5 s (both of which are different from the other reserve products, and Pre-Event Output differs from the definition in the protocol):
>
> A. For each data point from the t=0 to t=+10 seconds, assess whether the expected response to the frequency at that point was achieved at any point between that instant and Response Time later.
>
> B. For each data point from the Response Time to Response Time + 10 seconds, assess whether the actual response at that instant was greater than the expected response to the maximum frequency during the preceding Response Time.
>
> C. Check whether the additional energy delivered over the period 0 to 10 seconds is greater than any loss of energy in the period 10 to 20 seconds.
>
> All of the assessments would need to be a pass in order to achieve a pass for the event. There is no partial pass.

(Some references above to the protocol are now out of date, but the point of the extract is the FFR performance assessment approach.)

No part of this response is confidential and it may be published in full.

Power NI Energy Limited
Power Procurement Business (PPB)

DS3 Protocol Consultation

Response by Power NI Energy (PPB)

14 May 2020

power ni
Power Procurement Business
part of energia group

Introduction

Power NI Power Procurement Business (PPB) welcomes the opportunity to respond to the consultation paper on the DS3 Protocol.

PPB is the counter-party to Power Purchase Agreements, which were established in 1992 as part of the restructuring and privatisation of the electricity supply industry in Northern Ireland. PPB purchases both the capacity of the contracted generating units and any electricity generated by those units on terms specified in the agreements. The generating units are extremely flexible and reliable and therefore with the changes in the generation mix and typology of the system these units are likely to play a significant role in helping the System Operator manage the system. Flexibility is required to securely operate the system, which requires ongoing re-design to accommodate ambitious renewable targets.

Key Message

DS3 is a fundamental revenue stream for participants in SEM and so any changes to parameters, for any DS3 product, could have a detrimental affect on this income. While we understand the need for DS3 to evolve with system dynamics and hence changes will be required, the underlying principle should always be that already contracted units should not have revenue streams reduced due to parameter changes imposed through the Protocol.

We have highlighted in the past that the governance of this Protocol is inadequate. Providers tender for products and volumes based on the definitions set out at the time of tender. The DS3 revenues also form part of the income used in calculating the Offer Price for the Capacity Auctions. Consequently, definitions of these products cannot be changed throughout the course of the contract without robust provider engagement. This was endorsed by the EAI in its response to the last consultation on the Protocol and we fully support the EAI view on this matter. We have attached this letter again for your convenience. All proposed changes should have sufficient evidence to support the reason for the change and allow adequate testing to allow providers to assess the impact of the change.

Questions posed by Eirgrid

Proposed changes

1. **Do you have any comments in relation to this clarification regarding the provision of the FFR service?**

   PPB agrees that clarification is needed in relation to this product and the new text is acceptable.

2. **Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?**

   PPB acknowledges that the system is more stable today and that there are fewer Frequency Events and so Data Poor is much more of an issue today than it was at the outset of the DS3 project. We have already highlighted in a previous consultation response (in January 2019) that this reduction is due to improved performance from the DS3 contracted units. The proposed change to increase the number of instances where units will be assessed is therefore creating an additional risk for units which have successfully provided their contract. The TSO is moving the goal posts to artificially derive more Events. One of the ultimate aims of the Reserve Products is to reduce the number of Frequency Events. Having delivered that desired outcome, providers should be rewarded rather than penalised by a revision of the assessment criteria.

   It is not clear from this consultation the rational for this particular parameter change. It would be helpful for providers to understand the direction of thought by Eirgrid to enable informed responses. All proposed changes should be accompanied by robust analysis with evidence to explain the reason for the proposal. We do not think any changes should be made without this, an industry working group and a period of testing. This has all been suggested before by several providers and supported by with the wider industry through the auspices of the EAI.

   Instead of the change proposed by Eirgrid, PPB believe the period before Data Poor kicks in should be amended and increased to 2 years rather than 1 year as it currently stands, this will provide the potential for more frequency events to be assessed rather than changing an assessment criteria. We consider it might be feasible, if there remain no events after 2 years for an individual provider, to contemplate reducing this threshold, or other parameters, to enable that provider to capture some events. However, this should not be unilaterally applied to all providers by the change of a parameter in the Protocol. The options open to providers in the event of a data poor scenario could be detailed in the Protocol so all providers can make informed choices and adopt the best approach that pertains to the particular situation.

3. **Do you have any comments on the additional changes in the Protocol document as detailed in Section 2.2.1?**

   PPB has no objections to any of the additional changes in the Protocol. However we notice a small change to the high Frequency section and wish to highlight that PPB do not agree that any assessment or penalty should be attached to a service provision that is not financially rewarded for its provision.

Future Proposals

4. **Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?**

   <u>Removing POR Inertia Credit</u>

   PPB does not agree that this is an acceptable change. In 2015 a TSO led Grid Code working group was set up to discuss and make recommendations for this change to reflect the characteristics of synchronised generating units after the inertial response has depleted. It was recognised that when the frequency nadir occurred before 5s the unit would be absorbing energy from the system and therefore the POR provision would be reduced, (see attached recommendation). The Inertia Credit offsets this reduction in POR provision. The technical characteristics and capabilities of these units have not changed with the introduction of SIR and FFR payments. POR performance remains the same and is impacted differently in each event by the RoCoF and the nadir of the frequency, hence the requirement for Inertia Credit.

   No evidence has been provided to justify or support the need for the removal of the Inertia Credit and the reason posed for this change, '"*their purpose was to recognise the initial inertial response being delivered by synchronous generating units in advance of the POR timeframe*", is incorrect.

   The purpose of the Inertia Credit was to recognise the absorption of energy as the frequency rises after a high RoCoF Event before the POR timeframe The report published at the end of the Grid Code working group on this matter reads, *'With a frequency nadir that occurs before 5 seconds the frequency will be rising again at 5 seconds and the unit will be partly absorbing energy from the system, the volume depending on the generator's inertia characteristics and the positive Rate of Change of Frequency (RoCoF). The inertia effect due to the absorption of energy will reduce the indicated POR performance at 5 seconds.'*

   PPB strongly oppose the removal of the Inertia Credit and any further proposals on this matter should be channelled through a working group and include studies to prove and justify the need for any changes proposed. We strongly believe that the issue that resulted in this Inertia Credit being established in the first place is still very much an issue today as it was in 2015. In addition, not all the providers who benefit from this Inertial Credit will be contracting for the FFR or SIR products and so this is another matter requiring consideration.

Removing the Alpha and Beta Governor Droop Multiplier parameters

PPB believes that all fundamental changes to assessment of DS3 product provision should be considered at a working group and appropriate analysis and robust evidence provided to demonstrate the requirement for the change. Again we draw your attention to the previous EAI response on the matter of governance of the Protocol. Changes in assessment criteria after products have been tendered and contracted for, have impacts on a provider's income stream and must not be changed without proper and robust analysis and discussions with providers.

Redefinition of POR and thus the assessment of the POR service

PPB does not agree that the definition of a POR assessment should be changed especially along with the inertial credit. As per our response to question 2 above, we do not agree that fundamental parameter should be changed after a unit has tendered and contracted for a product, as this could potentially increase the risk and change the volume of product that the provider may have tendered. Again PPB would expect to see detailed evidence on the need for this change and the establishment of a working group to discuss any such Protocol changes.

5. Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

Generators respond to hundreds of ramping instructions each month and only assessing the 'Fail to Sync Instructions' of the units is not representative of the totality of the Ramping Services provided. The synchronisation of units is the most onerous ramping period and to apply a performance incentive only based on these disproportionately penalise units who provide the other ramping services on a continual basis without issue, which is an ever increasing service provided by marginal units.

At the time of first tender for these ramping products, and the introduction of the Protocol, providers highlighted that the assessment being used by the TSO was fundamentally flawed. The TSOs have already acknowledged this as a temporary solution and confirmed, in the DS3 System Services Interim Performance Scalar Calculation Methodology Consultation Paper published on 13 April 2017, that they were currently working on an enduring solution. Providers have borne reductions in payments in these products since 2016 without any movement to correct this. Changes in assessments have been introduced in other areas but this one has been neglected and again it is suggested as a future change. PPB would welcome changes in this assessment but again wish to highlight the importance of proper governance and industry inclusion (via a working group) in the development of the proposals.

Dear Sir,

RES is grateful to be invited to respond to the "Consultation on DS3 System Services Protocol Document" (Regulated Arrangements) . RES supports the DS3 programme and has participated in the DS3 Advisory Council since its inception.

This is RES's consultation response which is not confidential.

RES is the world's largest independent renewable energy companies working across the globe to develop projects that contribute to our goal of a secure, low carbon and affordable energy future. We develop, construct, finance and operate onshore wind, solar PV, transmission network and energy storage assets.

In over 35 years of operation, RES is responsible over a quarter of Northern Ireland's onshore wind capacity and 13GW of wind power globally, developed 1.3GW of solar PV globally, built over 1,600km of transmission network outside the UK and become a world leader in energy storage, with 240MW of energy storage assets in operation or advanced construction stage. From our office in Larne Co Antrim, RES has been at the forefront of wind farm development in Ireland since the early 1990s. We have developed wind energy projects across Ireland including Taurbeg Wind Farm in Co Cork, Milane Hill Wind Farm in Co Cork, Beennageeha Wind Farm in Co Kerry and Cark Wind Farm in Co Donegal.

Here are RES's responses to the Consultation questions:

Question 1: *Do you have any comments in relation to this clarification regarding the provision of the FFR service?*

Answer 1: RES understands the TSOs' concerns described in the consultation document section 2.1. However RES notes that the dynamic FFR expected performance as originally described can be satisfied by dynamic FFR response being provided by individual units within a PPM without any need for central coordination and if any PPM Units were unavailable then the FFR Trajectory of the remaining available PPM Units could remain unchanged. The proposed amendments will invalidate such decentralised control solutions and this may require changes to PPM controls to either manage control on a centralised basis or to amend the FFR Trajectory of remaining PPM Units in a coordinated manner should any other PPM Units become unavailable in an otherwise decentralised control scheme. These modifications to existing and new providers are likely to increase the costs of providers which could either be passed to consumers in some manner or could discourage provision of dynamic FFR.

Question 2: *Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?*

Answer 2: RES supports this proposal.

Question 3: *Do you have any comments on the additional changes in the Protocol document as detailed in Section 2.2.1?*

Answer 3: I could not find section 2.2.1. I assume you refer to section 2.3 of the Consultation Document. RES has no comment on these proposed changes.

Question 4: *Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?*

Answer 4: RES notes the proposal to remove Alpha and Beta Governor Droop Multipliers (which related to dynamic performance when frequency is changing) in the assessment of POR and understands the reasons proposed by the TSO. RES has no comment on that proposal but would welcome clarity from the TSOs regarding the similar challenge of assessment of FFR actual vs expected performance under high RoCoF conditions and FFR speed of response (lag).

Question 5: *Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?*

Answer 5: RES supports this proposal.

I hope that these responses are clear but please do not hesitate to contact me if clarification is needed.

Regards,

Joe Duddy
Principal Electrical Engineer

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Committed to a future where everyone has access to affordable zero carbon energy

EirGrid & SONI Consultation on DS3 System Services Protocol Document

SSE Response

14 May 2020

Introduction

SSE welcomes the opportunity to respond to EirGrid and SONI's consultation on the proposed changes to the DS3 Protocol document. The Protocol document sets out how the TSOs monitor performance and provides an accessible and flexible document for DS3 contracted participants operating within the market.

We have engaged with the EAI and understand that they will have submitted an industry response to this consultation. We are supportive of the views expressed in that submission. Our response below, focusses on specific consultation proposals. For the avoidance of doubt, this is a non-confidential response, which can be published.

SSE response

We welcome the intention for EirGrid and SONI to provide clarification to DS3 contracted parties in relation to the FFR service and to try to reduce the number of service providers that are in the data poor performance scalar assessment category.

SSE would welcome enhanced transparency in relation to the DS3 framework, in particular it is concerning that changes to the protocol document is not part of a formal modifications process as is found elsewhere in the electricity industry. SSE is of the view that a formal modification process should be established, this would improve the transparency of proposed changes as well as offer the opportunity to provide adequate governance arrangements to enable changes to be proposed in the interests of all parties. SSE therefore agrees with the EAI proposal that a forum to discuss potential modifications to the DS3 framework should be established.

Our main concern with the proposed modifications is that the impact to contracted service providers, resulting from the changes to the performance thresholds, has not been assessed by the TSOs as part of this consultation process. It is imperative that any proposed changes to the DS3 protocol document are accompanied by an impact assessment. In SSEs view such an assessment is necessary to justify the necessity of any proposed changes and ensure that they are credible.

Based on what has been provided as part of this consultation it is difficult to determine if the changes could detrimentally impact contracted service providers. Therefore, without such information SSE cannot agree with the proposed changes in respect of addressing the data poor issues.

Specific Questions

Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?

SSE welcomes this clarification in relation to the required characteristic for the provision of FFR.

Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?

SSE recognises that the existing performance process can negatively impact providers who are deemed data poor. Whilst the intent of this proposal appears to be to increase the number of assessed events through reducing the assessment threshold for performance, this proposal does not adequately assess the impact of the proposed changes to service providers, in particular there has been no assessment of the potential impact of this proposed change on those providers that are not considered "data poor".

Additionally, no consideration is given to the impact on providers with low running regimes or the potential adverse impact these changes may have on the performance scalar of such contracted service providers. In particular no assessment has been provided by Eirgrid or SONI to demonstrate the impact to contracted service providers of lowering the threshold for this test to 0.5MW.

The unilateral change proposed to the threshold does not take into consideration the volume of these services being provided, for example a threshold of 0.5MW for a service provider providing 5MW of POR is 10% of its contracted volume relative to 1% of a service provider contracted for 50MW.

It is disappointing that the TSOs have not taken this into consideration when developing proposals for changes to the protocol document. For example, the TSOs could have looked at the potential impact of establishing criteria that would allow a targeted approach aimed at those service providers that are currently considered to be "data poor".

SSE's view is that a solution should be sought for those service providers that fall under the data poor category, but that this should not be to the detriment of existing service providers who are not classified as data poor. Any solution should also be proportionate in terms of TSO and generator expense – a substantial increase in performance monitoring across all contracted parties to resolve an issue that impacts a small % of contracted parties would not appear to be particularly targeted.

Without further analysis being carried out by the TSOs SSE does not support the proposed changes as drafted. SSE also consider that it is absolutely essential that any proposed changes to the DS3 protocol document are accompanied by a robust and credible impact assessment.

Question 3: Do you have any comments on the additional changes in the Protocol document as detailed in Section 2.2.1?

The clarifications and updates provided here appear reasonable, and we welcome the proposal to provide a data template for FFR. SSEs view is that this template must be consulted on, in advance of implementation.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?

SSE is of the view that future proposals for changes to the protocol document should be developed after a full impact assessment has been completed, and that the necessary changes have been fully evidenced and justified. SSE agrees with the proposal put forward by EAI that a suitable forum should be established to allow changes to be developed in an open, transparent and collaborative manner with industry.

Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?

We welcome the position from the TSOs that a review is being carried out and we welcome the opportunity to comment at that time. As previously stated, SSE is of the view that any proposed changes should be developed after a full impact assessment has been carried out, and stakeholders are fully consulted on the findings and proposed changes resulting from those studies.

Concluding Remarks

The proposed changes to the protocol document have provided some welcome clarifications, however SSE is extremely concerned with both the modifications proposed for the purposes of addressing data poor service providers as well as the process for doing so. Any potential modification to the protocol document that could impact on contracted parties must be fully assessed in advance of being consulted. In SSEs view in is not possible to carry out meaningful consultation with stakeholders without carrying out this analysis and publishing the findings as part of the consultation process.

Therefore, SSE cannot agree with the proposed modification as set out in section 2.2 of the consultation, we are also of the view that any future proposals, such as those indicated in section 3 of the consultation paper should also be accompanied by a robust and credible impact assessment.

Date: 14/05/2020

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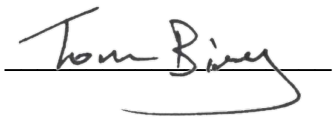
Subject: Statkraft Response to DS3 SS Protocol Document Consultation

Sent via Email to: DS3@Eirgrid.com

Dear Eirgrid,

We would like to thank you for the opportunity to respond to these important consultations. Please find on the following pages our responses to the DS3 SS Protocol Document Consultation questions.

Yours sincerely,



Tom Birney

Operations Engineer, Grid Services Team
European Wind and Solar, ENIG – Grid & DS3

tom.birney@statkraft.com
Mobile +353 87 703 8774

For and on behalf of Statkraft Ireland Limited

Question	***Answer***
Question 1: Do you have any comments in relation to this clarification regarding the provision of the FFR service?	Statkraft have no comment relating to the constant MW/Hz characteristic. However regarding the performance assessment of FFR we note that *"% Time FFR Achieved & Sustained up to 10s"* is not addressed in the protocol document. This appears to be a criteria in the Fast Frequency Response Performance Reports issued by Eirgrid to date. Furthermore it remains unclear what tolerance applies to determine what *"% time FFR Achieved and Sustained"* is considered a PASS or FAIL. We feel this is critical information which is currently omitted from the protocol document and welcome further clarity on this subject. Ref: Email "RE MH1 FFR Reports March 23 2019.msg" and sample report "FFR_Report__2019_03_28__12_08_17__MH1.pdf"
Question 2: Do you have any comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1?	Statkraft have no comments on the proposal to reduce the threshold used to determine when to performance monitor FFR, POR, SOR and TOR1.
Question 3: Do you have any comments on the additional changes to the Protocol document as detailed in Section 2.2.1?	Regarding *"template for all Performance Incidents"* we ask Eirgird to make the data submission templates readily available so that service providers have time to prepare the required tools to process the data in the required *"format as defined by the TSO"*. Statkraft have no further comments on the additional changes to the Protocol document as detailed in Section 2.2.1.

Question 4: Do you have any comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation?	Statkraft have no comments on the proposals to modify the performance assessment of the POR service in a future Protocol consultation.
Question 5: Do you have any comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation?	Statkraft have no comments on the proposal to review the use of the ramping assessment methodology in a future Protocol consultation.
Any further comments:	In respect to assessment of DS3 service reserves from wind farms in the curtailed condition (with active power control on) we believe further consideration is required to the power reference point for determining additional power delivered from t = 0. In particular we have found that the pre-event output is problematic reference for assessing the frequency response from wind farms in the curtailed condition because t = 0 is determined from 49.8Hz but the wind farm has already started responding dynamically from a higher reserve trigger of 49.985Hz in response to the varying frequency. This varying output during the pre-event output timeframe (-1.5 to -0.5s) causes the pre-event output to differ from the active power control setpoint and thus offsetting the expected response throughout the event. We believe the active power control setpoint at t = 0 is a more appropriate reference point for determining additional power as this is the true reference point that is used in grid code compliance testing. We welcome further clarification from Eirgrid on this subject.

TYNAGH ENERGY LIMITED

Eirgrid Group
Block 2
The Oval
160 Shelbourne Road
Dublin 4
D04 E7K5

Ref: TEL/CD/20/085

14th May 2020

RE: DS3 Protocol Consultation 2020/21

Dear Sir/Madam,

Tynagh Energy Limited (TEL) welcomes the opportunity to respond to this DS3 Protocol Consultation.

TEL would like to support the EAI response to this consultation for questions 1-4.

However, TEL would like to submit a specific response on Question 5.

There are two significant reasons why the method that is being applied is inappropriate.

1) Starts are not an appropriate measure for all the affected products:

Products	Aligned	Comment
TOR2	No	Due to time CCGT does not provide from Off
RRS	No	By definition, must be synchronised
RM1	No	Due to time restriction most (if not all) CCGTs do not provide from off
RM3	Partial	Depending on running regime
RM8	Partial	Depending on running regime
RRD	Yes	By definition, starts are related.

2) There is a significant inequity to the method that is currently used. In the case of TEL if we have one failed start in a month where we only have one start, this is deemed as 100%, non-performing. However, if we have one failed start in a month with ten starts, (possibly the very next month), we will only be deemed 10% non-performing.
    a. One failed start in one month, could result in a loss of 10% of a CCGT's entire DS3 revenue for one year.

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These are issues that TEL have raised repeatedly in the past. TEL have consistently pointed these out in consultation responses and just recently in February 2020, TEL presented on this issues at the DS3 Advisory Council.

Proposed Solution

Any solution for these services needs to look both at the ratio of fails to requests, but also at the appropriate timeline to look at these requests. The timeline should be a combination of actional time and also the number of requests. The requests though have to be appropriate to the service. It may be necessary to use a different methodology for different technologies. But if it is still fundamentally the number of fails against the number of requests for each unit then the system is equitable.

Performance Measurement for service

It is illogical to use a starts based methodology to assess performance for RRS for any unit. By definition the unit has to be running to provide this service. While it is not as blatant, four of the other services should also not be using this as a measure. There is only one service for which the starts based service is valid and that is RRD.

If Eirgrid cannot come up with a performance measure per service per provider that measures the performance of the provider for that service then they should not reduce the payments for that service.

Eirgrid have all the measurements, have all the data that is required for an enduring, logical solution for all services. To measure performance for these 6 services, there could be different measurements for each.

RRD
Should use the existing starts-based methodology.

RRS
The measure for RRS should focus on actions that occur when a unit is physically running. It may make sense that it is only where there is a failure to provide RRS when called upon that a failure is noted.

TOR2
It is possible in the case of TOR2 and the ramping products that Eirgrid assesses where these actions have occurred. Yes, this may be different for each technology. But Eirgrid can use its skill and experience to assess based on when a call has been made and how that participant has responded.

Decay Mechanism
In the same way that the performance test itself should not be a one size fits all approach neither should the decay mechanism.

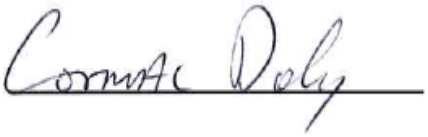
The current solution of using fails/requests for a given month and then decaying is a sub-optimal.

A solution to the decay mechanism is that 1) where the unit has had ten or more performance measures within the last three months, that for that period the participant is measured on fails/requests over the last ten requests, however where the unit has greater than 1 but less than ten requests over that period it can be measured over the requests it has incurred.

If the unit has no requests over that period, they will not have any performance scalar applied to that service.

Should you have any queries, please do not hesitate to contact me.

Yours sincerely,



Cormac Daly
Regulation and Market Strategy Manager