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21st August 2017

Dear Sir / Madam,

RE: DRAI RESPONSE TO DS3 SYSTEM SERVICE ENDURING TARIFFS CONSULTATION

The Demand Response Aggregators of Ireland ("DRAI") is an association of eleven Demand Side Unit (DSU) and Aggregated Generating Unit (AGU) providers in the SEM. Collectively, we believe there is a significant role for demand-side participation in any future market arrangements in Ireland and are committed to the development of this market. Our purpose is to provide a single voice on policy and regulatory matters of common interest. The DRAI welcomes the opportunity to respond to the recent consultation and trust that you will consider it in your deliberations.

WHY DR/DSU ARE IMPORTANT?

DR/DSUs are capable of producing a rapid response to signals from the system operator or automatically locally detecting system frequency events, with many of the new demand side technologies capable of near instantaneous response. Facilitation of DR/DSUs can therefore increase demand flexibility and improve overall system stability by:

- assisting in balancing the system and avoiding constraints;
- providing reliable distributed capacity to the system;
- contributing to avoided investment in peaking plant by delivering peak load reduction;
- providing flexibility to mitigate the uncertainty of wind output; and
- helping mitigate transmission and distribution network constraints.[1]

This capability is expected to become increasingly important as the proportion of generation from variable renewable energy sources continues to grow. We therefore consider that Demand Response ('DR') is well positioned to support the System Operators in meeting their objectives of market efficiency and security of supply.

FACILITATION OF DR/DSU IN THE I-SEM

Fundamentally, the DRAI expects that DR/DSUs/demand-side capacity will become

[1] Single Electricity Market (SEM) (2011), Demand side Vision for 2020 Decision Paper, SEM/11/022.

increasingly important in the design of the Irish electricity system and we believe that the System Operators and the Regulators need to give further consideration to how DR/DSUs[2] can be facilitated when developing the new I-SEM market arrangements.

Across Europe, DR/DSUs are increasingly recognised as an effective and highly efficient means of balancing the supply of electricity with consumer demand, and within the I-SEM the requirement to balance higher levels of variable non-synchronous wind generation is expected to be an increasing challenge. In Ireland the delivery of the 2020 and 2030 renewable energy targets is projected to result in one of the highest penetrations of variable non-synchronous generation on any power system in the world and is expected to create very challenging future operational scenarios for the grid system operators[3]. It is therefore paramount that this advanced and progressive electricity system is supported by appropriate market arrangements within the I-SEM to encourage the growth of demand-side participation and other system balancing measures.

Whilst the DRAI recognise that flexible dispatchable generation (peaking plants/OCGT) is effective at providing real-time balancing of renewable generation variability in today's electricity system design, we also expect that DR/DSUs will have an increasing role in delivering system balance in the future -- to continue to rely on conventional plant with ever lower utilisation factors would be unaffordable. The DRAI therefore believe that the TSOs and the regulators need to be mindful of this growing potential in order to ensure that the I-SEM market arrangements provide adequate support for DR/DSU participation into the future.

It is especially important that accurate and clear service information (particularly around pricing and technical requirements) is available to Individual Demand Sites (IDS) seeking to deliver services as part of an aggregated DSU. It is also essential for this information to be available well in advance of the commencement of arrangements, in order to facilitate the development of stable trusted relationships with the industry into the future.

RESPONSE OVERVIEW

Fundamentally, the DRAI recognise the need to protect the end consumer from over expenditure and are fully supportive of the introduction of a competitive process for the procurement of DS3 services. Although we would also emphasise that this procurement process needs to be truly technology neutral, in order to support the development of new demand side technologies for the provision of DS3 services into the future.

The DRAI do, however, have a number of issues regarding the DS3 consultation papers. Firstly, we are concerned that the DS3 consultations do not address the role of the DSO in facilitating DS3 services for distribution connected assets. At present, we are not sure, if all locations are currently technically feasible and we understand that it may take some time to resolve certain distribution level technical concerns. Therefore, in order to continue to develop a dependable business case for demand side DS3 resources, our members need a commitment from the TSO that demand side DS3 services will be paid for during this period of uncertainty. The DRAI also consider that a joined up TSO/DSO approach to enabling DS3 services is necessary, as we do not believe that aggregators or demand side customer service providers should be responsible for resolving System Operator level technical concerns.

Our second concern relates to the proposal to only make payments for FFR (and have a scalar of greater than zero) when SNSP>60%. We consider that the high variability in this payment system, which is dependent upon uncontrollable (and almost unforecastable) factors, such as wind capacity factors and interconnector flows, will introduce significant uncertainty and will also be difficult to explain to end customers. The DRAI therefore consider that this proposal would be a major obstacle to on-boarding customers to the DS3 scheme. To support the development of demand side DS3 resources, aggregators need a payment system that is:

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[2] The term 'DSU' has been used throughout this letter. It should be understood to refer to both DSUs and AGUs as appropriate. The term 'DR' refers to Demand Response as provided by DSUs and AGUs.

[3] EIRGRID GROUP ANNUAL RENEWABLE REPORT 2013 Towards a Smart, Sustainable Energy Future.

- *Clear* to enable us to explain DS3 products and services to potential end customer providers, from a range of industry backgrounds many of whom are unfamiliar with electricity markets;
- *Reliable* as we need a level of certainty in relation to potential revenue to be able to stand over our customer payment forecasts -- we would strongly argue that it is essential to retain a level of continuity as regards revenue streams for a minimum of 4 years.

Finally, whilst DRAI recognise the need to focus on budget control and value for money in these consultations, we would also like to point out that payment rates proposed for various services appear to be considerably less than equivalent FFR services cleared in recent GB auctions. Consequently, it is our view that the proposed payment tariffs and scalars would not be expected to be sufficient to incentivise domestic Demand Response, and that their impact will be limited to supporting demand response in the industrial and commercial sectors. We would therefore support the need for a benchmarking exercise, to compare the rates paid for services in GB and/or other systems with high levels of renewables generation. We consider such an exercise would assist the development of a balanced level of payments, which facilitates system enhancement through supporting renewables penetration, and also encouraging investment in demand side technologies through fairly rewarding demand side service providers.

STRUCTURED RESPONSE

The DRAI response set out below aligns with the question format in the consultation document.

Question 1: *Do you agree with our proposal to include in the performance assessment methodology to determine the value of the Performance Scalar an additional measure to incentivise a unit to supply to the TSOs an accurate forecast of its availability to provide Reserve and Ramping Margin Services? If not, please specify why or identify what element of the proposal you believe requires amendment?*

Response 1: The DRAI support the TSO proposal to introduce an incentive for a unit to provide an accurate forecast of it's availability, and in our opinion the closer to real time that this incentive can be adjusted the more accurate it will be. Indeed, since new technologies such as wind and Demand Side Management are less variable[T1] and have the capability to deliver real time feeds, our preference would be for real time feeds to the TSO of actual availability at any given time. Therefore although we agree fundamentally with the need for such an incentive, we consider that the current proposal to require forecasts of demand for 6 hour (12 settlement periods), 6 hours ahead of time, to be biased towards conventional generation.

Question 2: *Do you agree with our proposal to implement a Product Scalar for the Faster Response of FFR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 2: The DRAI are supportive of the proposal to increase the product scalar for FFR provision with faster response times and believe the proposed method of doing so is reasonable.

Question 3: *Do you agree with our proposal to implement a Product Scalar for the Enhanced Delivery of FFR, POR, SOR and TOR1? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 3: The DRAI consider that there are important lessons that can be taken from the scalar designs applied in the interim arrangements. In our opinion the lower frequency trigger and static response type products are already sufficiently discounted and therefore adequately incentivised. However, we also consider that the trigger scalar (interim arrangements) and also the proposed type scalars set out in the consultation do not sufficiently support the technical complexity and greater capital investment required to encourage delivery of a dynamic response over a static response. We would therefore argue that there is a need to properly differentiate between these and the more valuable dynamic, expensive, high

frequency trigger service, and consider that the range should include a positive scalar, perhaps up to 1.5 both in terms of type i.e. 1.5 for dynamic and in terms of frequency trigger i.e. 1.5 at 49.985hz.

Question 4: *Do you agree with our proposal to implement a Product Scalar for the Continuous Provision of Reserve from FFR to TOR1? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 4: We understand the continuous provision of reserves from FFR to TOR1 is desirable from a system security perspective and therefore recognise the need to reward such behaviour[T2] in the scalar design. However, from a demand side perspective (see other more detailed comments), we would have concerns regarding the introduction of a measure on a providing unit basis, as although many DSU technologies are capable of providing this type of continuous service, not all technologies have this capability. The DRAI would therefore argue that given the large numbers of permutations of demand side asset capabilities, demand side technologies need greater flexibility to optimally contract asset capability in order to achieve peak performance from both the TSO and IDS perspective.

Question 5: *Do you agree with our proposal to implement a Product Scalar for Enhanced Delivery of SSRP with an AVR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 5: No Comment.

Question 6: *Do you agree with our proposal to implement a Product Scalar for SSRP with Watt-less VArs? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 6: No Comment.

Question 7: *Do you agree with our proposal to implement a Temporal Scarcity Scalar for DRR and FPFAPR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 7: No Comment.

Question 8: *Do you agree with our proposal to implement a Temporal Scarcity Scalar for FFR? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 8: The DRAI support the proposal to implement a temporal scarcity scalar in principle, as we understand that the TSO needs to incentivise behaviour[T3] and availability of service that add greater value to the system. We do, however, strongly disagree with the intention to set a scalar at '0' for FFR up to 60% SNSP, as we believe this will send a very negative message to the market in relation to investment certainty, which is one of the fundamental objectives the TSO is seeking to achieve in broadening DS3 service provision.

When making investment decisions the DRAI members also understand that there is often a need to take calculated risks, and we also recognise that it is important to have some control of the key drivers of these risks in order to manage their potential impact. Since aggregators are not in a position to control the level of SNSP on the system at any time, under the proposal to implement a *Temporal Scarcity Scalar for FFR* our members would be fully exposed to significant financial risk. The DRAI therefore consider that it would be entirely unreasonable for the TSO expect our members or the end customer service providers to make investment decisions in circumstances where they would not be in a position to control of one of the key drivers of financial return.

From a demand side perspective, the revenue associated with continuous service of all DS3 services from FFR at least through to TOR2, is a key determinant for vast majority of sites considering DS3 service provision. Therefore, under current tariff rates FFR makes up a very significant proportion of the potential revenue and is a key driver in the investment decision. Consequently, the introduction of greater uncertainty around the level of payment for this service would create more confusion in the marketplace, and serve to reduce end consumer confidence and their willingness to invest in demand side services. The DRAI therefore consider that any measures that reduce FFR revenue would have a significantly negative impact upon the growth and development of the market for demand side DS3 services.

In addition, since one of the fundamental principles of the service provision is availability, in all cases where a service provider is available to provide service, in our opinion the availability fee should be paid. As aggregators we work closely with end consumers', and we recognise that they need to know when they can expect to be called to deliver a service and what type of service. Therefore, from an end consumer perspective we would argue that setting the Scalar at '0' from 0-60% would introduce unnecessary uncertainty and confusion as these consumers would not be aware when they need to available.

As an alternative we would suggest applying a Scalar of 1 form 0-60% SNSP followed by an increase on a stepped basis thereafter. Whilst, we recognise that the introduction of such a measure may require modifications to reduce the incremental scalars at the 60% & 70% SNSP levels in order for the TSO to remain within expenditure objectives. The DRAI consider that this alternative solution would provide the necessary certainty on base level availability fees for FFR and would therefore offer a preferable, more effective all round solution.

Finally, the DRAI fundamentally agree that a stepped approach to scalar design is preferable to a linear approach.

Question 9: *Do you agree with our proposal to implement a Temporal Scarcity Scalar for 11 Existing System Services? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 9: Yes, the DRAI agree with the proposal to implement a temporal scarcity scalar in principle as we support the rationale of TSO incentivising behaviour[T4] and availability of service that have greater value to the system.

Question 10: *Do you agree with our proposal to implement a Locational Scarcity Scalar for All System Services? If not, please specify why or identify what element of the scalar design you believe requires amendment?*

Response 10: The DRAI also agree with the proposal to introduce location scalar's as part of enduring regulated arrangements, we would however request that the following two areas be given specific attention:-

1. Demand side DS3 services procurement at a providing unit level (IDS) needs to be more flexible, in order to facilitate providing units that may have 100's of sites with varying degrees of locational value to the TSO. Under current structures it may not be commercially viable form a compliance /cost perspective to separate these sites into different providing units based on their geographical location. See the *other comments* for further detail on this point.

2. Greater engagement with the DNO will be required to ensure that valuable demand side DS3 service provision, particularly from a locational perspective, is not constrained by instruction sets. We would in fact encourage the view that in most instances demand side flexibility can contribute to solving the concerns that form the basis for the instruction sets.

Question 11: *Do you agree with our proposal NOT to implement a Product Scalar for Enhanced Delivery of DRR with more reactive current? If not, can you provide rationale to support your views?*

Response 11: No Comment.

Question 12: *Do you agree with our proposal NOT to implement a Product Scalar for Enhanced Delivery of SSRP with a PSS? If not, can you provide rationale to support your views?*

Response 12: No Comment.

Question 13: *Do you agree with our proposal NOT to implement a Product Scalar for SIR with Reserve? If not, can you provide rationale to support your views?*

Response 13: No Comment.

Question 14: *Do you agree with our proposal NOT to implement a Product Scalar for Faster Response of FPFAPR? If not, can you provide rationale to support your views?*

Response 14: No Comment.

Question 15: *Do you agree with our proposal NOT to implement a specific Temporal Scarcity Scalar for Reserve Products? If not, can you provide rationale to support your views?*

Response 15: Yes, the DRAI agree the TSO's proposal in this respect.

Question 16: *Do you agree with our proposal NOT to implement a specific Temporal Scarcity Scalar for SIR? If not, can you provide rationale to support your views?*

Response 16: No Comment.

Question 17: *Do you agree with our proposal NOT to implement a specific Volume Scalar for Regulated Arrangements? If not, can you provide rationale to support your views?*

Response 17: Yes, the DRAI agree with the proposal not to implement a volume scalar for regulated arrangements, as we recognise that it has the potential to introduce greater uncertainty in relation to projected returns for service provision, and therefore discourage investment. This is a major concern for our members, as they struggle to convince potential end customers of the benefits that demand side management can bring to their business, through reducing their energy costs, and on a national level through the decarbonisation of the grid. Whilst our members have had some success in building relationships with new customers in recent years, our ability to continue to attract new service providers is based on trust and our ability to dependably deliver value for them utilising demand side technologies. We are therefore concerned that the introduction of price uncertainty would diminish this trust and create significant challenges for the DSU industry, which is in the development stages in Ireland and is consequently very much dependent upon revenue certainty into the future.

Question 18: *Do you agree with our proposal to implement Frequency Response Curves to define the provision of the FFR Service? If not, please specify why or identify what element of the curve design you believe requires amendment?*

Response 18: Fundamentally, the DRAI agree with the proposal to implement both the frequency response curve requiring specified start and recovery triggers, and the TSO pre-defined response curve. However, we would also like to highlight that demand side assets seeking to deliver a static response through demand reduction, will require more flexibility on the recovery response curve. This is especially important in response events where a large amount of capacity is delivered, as certain IDS assets will require some recovery time before they can become available for response again (which may not be possible immediately at a recovery frequency set-point). In addition, we would also draw attention to the fact that assets delivering response through demand reduction generally follow their own energy curves when returning to steady state, and for this reason following the exact curve shape in recovery (as in response) may not be possible for these assets. Therefore, in order to promote participation from these asset types (which have a high suitability for FFR), it is important to allow for a certain amount of flexibility[T5].

Other Comments

Fundamentally, the DRAI do not agree with the provision of system service capabilities (scalars) at a providing unit level, as we believe they would benefit conventional generators as well as some new inflexible technologies, which typically consist of a providing unit with a predictable large number of MW's. Since this predictable generation can tender for DS3 services under the structures currently envisaged we would question the need for them to benefit from system service capabilities (scalars) as well. We would therefore argue that the provision of system service capabilities should be exclusively available to demand side providing units, which can be an aggregrate of 100's of sites, each containing several intensive energy using assets.

In addition, since the demand side aggregator will need consider the following factors in developing contracts with end customers (and their assets) for service provision:-

- Capability of service provision for each service;
- Capability of static versus dynamic response for frequency triggered services;
- Price requirements to justify investment;
- Location - in time;

We would also argue that for contracting purposes, the more granular sub-units with varying capabilities need to have the ability to individually tender for service provision in order to optimise the service that can be provided, since this currently not possible at a providing unit level. Without such contracting flexibility, we believe many demand side providers may need to increase the number of providing units by a factor of 10 in order to cover the varying permutations of their 100's of sites (1000's of assets). This would be cumbersome, cost prohibitive and could be avoided with the inclusion of greater flexibility in the tendering process.

From an international perspective, GB provides a good example of a *Dynamic Firm Frequency Response* mechanism -- a service provider has one framework agreement and can have many sub units sitting off that, which can tender separately with different characteristics for service provision.

On behalf of the DRAI I hope that you find our comments helpful and constructive, and we look forward to hearing from you in due course. We would also welcome the opportunity to discuss with the TSOs matters relating to the DS3 System Services tariffs.

Yours sincerely,

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PATRICK LIDDY
DRAI Chairman