DRAI

Demand Response Aggregators of Ireland

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21st July 2016

Dear Sir/Madam,

Re: I-SEM Capacity Remuneration Mechanism, Detailed Design – Third Consultation Paper (SEM-16-010)

The Demand Response Aggregators of Ireland ("DRAI") is an industry association representing the views of ten Demand Side Unit (DSU) and Aggregated Generating Unit (AGU) providers in the SEM. Our purpose is to provide a single voice on policy and regulatory matters of common interest and we very much look forward to working with you into the future. I hope that you will consider this response in your deliberations, as we believe there is a significant role for DSUs and demand-side participation in any future market arrangements in Ireland.

WHY DR/DSU ARE IMPORTANT?

DR/DSUs are capable of responding to signals from the system operator within an hour and therefore provide an effective means of reducing the demand requirement, which can assist in balancing the system and avoiding constraints. Facilitation of DR/DSUs increases demand flexibility and improves overall system stability by:

- 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]

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

Effective integration of DR/DSUs into the market structure will provide flexible, cost-effective capacity and in doing so complement thermal plant and renewables capacity. In addition, the participation of DR/DSUs can reduce the market power of conventional generators in the wholesale market, leading to more competitive outcomes.

In the past, inefficient diesel plant could run for hours in anticipation of high retail price signals or system demand (Peak lopping in NI, WPDRS in ROI), even though such system demand did not always materialise. The SEM has been successful in positioning AGUs and DSUs correctly in the merit order, ensuring this capacity is available to the system operator to dispatch when needed, and thereby avoiding the need to run the inefficient diesel plant unnecessarily. This is a substantial improvement, both economically and environmentally. The DRAI would therefore fully support the carryover of this aspect of the SEM model into the I-SEM, as the alternative would result in reverting to expensive load curtailment and would also see the unnecessary operation of diesel generation capacity.

FACILITATION OF DR/DSU IN THE I-SEM

Fundamentally, the DRAI expects that DR/DSUs/demand-side capacity will become increasingly important in the design of the Irish electricity system and believes that the TSOS 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 an increasing proportion of variable 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 recognises 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 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 believes that the regulators need to be mindful of this growing potential in order to ensure that the market arrangements within the I-SEM provide adequate support for DR/DSU participation into the future.

In this consultation response, we have followed the format of the template provided. In terms of feedback we have expressed the DRAI view point and also the justification and explanation supporting this view. The content of this response is not confidential.

[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

Question 1: Do you agree that the Qualification Trial Process should focus on both "Provenability" and "Measurability"?

Yes, the DRAI agree that the Qualification Trial Process should focus on both Provenability and Measurability. Provenability is essential to ensuring that new technologies do not introduce uncertainty that could potentially detract from their valuable contribution to maintaining system security. Since the enhanced performance requirements associated with the DS3 System Services products will also require considerable advancements in metrology and communications systems, Measurability will be equally important. We believe it is imperative that Measurability trials are conducted in parallel with Provenability trials, which will maximise the likelihood of a suitable solution being in place in advance of the 2017/2018 System Services year for service providers who are not eligible for the central procurement process for 2016/17 year.

Question 2: Do you agree that the Provenability Trials should focus on proving only two System Services, as representative of all System Services in those categories of System Services?

The DRAI agree that the Provenability Trials should focus on one System Service from each of the Reserve and Ramping categories, as we consider this approach will provide sufficient insight as to the ability of a specific technology to provide services in those categories.

We do however recognise that in the case of Reserve products, the challenge to be accomplished by the three technology classes is speed-of-response. Therefore, all parties, chosen to participate in this trial, will be incentivised to demonstrate the maximum speed-of-response possible, in order to qualify for the provision of faster System Services as part of the interim and enduring arrangements. In this case, the DRAI believe that TOR1 should be the requirement for the provision of Reserve, as this would enable those participating in the qualification process to demonstrate varying capabilities to deliver TOR1, SOR, POR, and FFR. We would therefore have concerns for an approach where POR is the base requirement, as this would limit the trials to the demonstration of POR and potentially FFR. The DRAI therefore consider that the qualification process should require the provision of TOR1, and that it should also favour participants that are likely to provide the greatest number of Reserve Services.

Similarly, given the nature of the three technology classes, energy limitations are likely to be the most significant challenge faced by parties providing Ramping services, since the duration of the trialled product will be key. For this reason the DRAI consider that RM1 should be the requirement for the provision of Reserve, again with a preference given to those participants capable of offering the greatest number of Ramping services.

Question 3: Do you agree that the Provenability Trials should focus on the Reserve and Ramping categories of System Services?

The DRAI agree that the Provenability Trials should focus on the Reserve and Ramping categories of System Services. We also recognise that Inertia is an inherent characteristic of a Providing Unit, which does not require qualification trials. However, we believe that there may be sources of SSRP that are not being utilised within the three technology classes and consider that there may be value in extending the Provenability Trials to include the provision of SSRP.

Question 4: Do you agree that the technology classes targeted in the Provenability Trials should be wind, demand side and 'other technologies'?

The DRAI agree with the selected technology classes targeted in the Provenability Trials, as we consider these technologies to be representative of those not already proven as part of HAS. We also recognise their selection is in proportion to the current levels of integration of these technologies.

Question 5: Do you agree that the Measurability Trials should be technology neutral?

We would recommend that there is a minimum of one provider chosen to represent each of the three technology classes.

We would however not be supportive of technology neutral measurability trials, as they would result in DR incurring significantly higher costs versus other competing technologies. This is due to the fact that a large proportion of the costs associated with participating in the trials relate to hardware installation at individual customer sites, and since DR comprises a number of aggregated individual demand sites, these costs will be replicated across a number of sites. This issue is not expected to apply to other competing technologies, as they will be based on a single site. In the case where the trials are technology neutral, the DRAI consider that DR would be unfairly disadvantaged as the costs associated with delivering an equivalent number of MW's in the trial for DR would be a multiple of those for other technology providers. This issue is also compounded by the fact that the vast majority of the revenue generated in the DR business model is passed on to the end consumer.

The DRAI therefore request that the TSOs consider applying different measurability technologies for each of the technologies -- since FPRAPR and DRR are not as relevant to DR, the corresponding level of metering will not be required. Adopting this approach would allow the measurability technology to be appropriate costed according to the specific trial application.

Question 6: Do you agree with the proposed service provision volumes and proposed number of Service Providers to be included in the Provenability and Measurability Trials respectively?

In relation to the Provenability trials, the DRAI agree with the total volumes to be procured for each of the technology classes and individually for Reserve and Ramping. However, we do not support the view that equal proportioning of volumes for each jurisdiction will provide an equitable opportunity for SEM market participants seeking to participate. This is because all participants do not operate in both jurisdictions. For this reason we suggest that the volumes should be apportioned based on the registered capacity in each technology class for Trials 1 and 2, and on jurisdictional energy market volumes for Trial 3.

In relation to the Measurability trials, the DRAI strongly disagree with the proposal to select one Service Provider per service. We have concerns that in following this approach the future participation of a technology class would be dependent on the successful delivery of a measurability system by a single Service Provider. Equally measurability technique proven by one technology type might not be appropriate for all e.g. a measurability mechanism might be appropriate for one technology type but might be cost prohibitive for another such as demand side where there a large number of sites making up the providing unit. In addition, since it is expected that the participating Service Provider will be selected based on a response to a tender process, we are also concerned that it may not be indicative of their future practical success. Fundamentally, we believe that the

Measurability Trials should act as an extensive technology exercise, to assess multiple systems in order to define a standard that capitalises on the most desirable characteristics from each trialled Service Provider. For example, it may be found that one Service Provider excels in the delivery of a metrology technology whereas another demonstrates a desirable communications methodology that would better support large scale deployment.

For this reason we recommend an upper limit of no less than 10 Services Providers per Technology Class, with jurisdictional apportionment, as we have previously recommended for the Provenability trials.

Question 7: Do you agree with the minimum sizes of Providing Unit proposed for the Provenability trials?

Yes, we agree with the minimum sizes of the Providing Unit proposed for the Provenability trials, and we also believe that the rationale behind the reduced minimum size for the 'Other Technologies' trial is well founded.

We would however recommend an approach to Service Provider selection, which favours the procurement of higher numbers of Service Providers. For this reason each prospective Providing Unit should be asked to specify the lower and upper volume they are willing to be procured for, and also the achievable step size for volumes between their lower and upper limit. For example, a Service Provider may propose to offer a minimum of 1 MW of capacity or any volume above this, in 500 kW increments, up to a maximum of 10 MW. The DRAI consider this approach would be expected to optimise the potential for participation within the trials, whilst also avoiding the situation where the future participation of a technology class would be dependent on the successful delivery of a small number of Service Providers.

Question 8: Do you agree with the proposed evaluation criteria for the selection of participants to take part in the Provenability Trials?

The DRAI are broadly in agreement with the evaluation criteria set out; however, we also consider that it would be appropriate for a low weighting to be placed in the requirement for a *Proposal on how the System Service(s) can be monitored,* as this requirement is included in the scope of the Measurability Trial, not the Provenability Trial. For this reason the measurability should not detract from the perceived ability for a technology to provide a System Service.

In order ensure successful completion of the qualification trial, the TSO will need to achieve an appropriate number of events. The DRAI would therefore suggest that there is no fixed time period placed on the trial but that it continues until the appropriate number of events have been achieved. We also consider that it would be important for pro rata payments continue accordingly.

We also consider it appropriate for a service provider that has successfully completed the qualification trials to be immediately awarded a contract under interim arrangements. This approach is considered fair and reasonable as it is assumed that such a service provider would have tendered for a contract under the interim arrangements in the case where the tender process enabled them to prove capability in advance.

The inclusion of continuity in terms of both service provision and payment is particularly important for the evolution of demand response, and will therefore support the development of the technologies to enable them to provide the required ancillary services, and also support delivery of the 2020 and 2030 renewable energy targets.

An important stakeholder in demand response business model is the end consumer (individual site), as it is their flexible demand that provides the service. It is therefore important that demand response aggregators are given the opportunity to build a level of trust with the end customers, and they can only do this if they are in a position to provide a consistent form of remuneration over a substantial period.

The adoption of an approach that will allow demand response aggregators to offer continuity in terms of remuneration will allow customers to better understand how they can potentially benefit from the technology, which will ultimately facilitate further adoption of demand response as well as the provision of the necessary ancillary services. Indeed, a stop start approach where the levels of remuneration for the end customer fluctuate, does not create a clear vision of the financial benefit associated with demand flexibility and therefore does not incentivise customers to provide the required services.

Finally, in the case of the qualification trials the DRAI do not consider price to be an appropriate criterion for evaluating bidders, as it has the potential to diminish trust with end consumers. We would therefore support a fixed price based on the tariff rates set for interim arrangements.

Question 9: Do you agree with the proposed evaluation criteria for the selection of participants to take part in the Measurability Trials?

Please note that the points made in response to Q8 would equally apply to this section.

We agree that there should be no limits placed on the service provision size, as we recognise the minimum or maximum will be determined by the volumes that have been procured from the new or existing Service Provider participant.

However, the DRAI do not agree with the objective to provide evidence of performance in one event during the trial period. This is because a single point sample set per Service Provider per Technology Class does not demonstrate reliability, and it also limits the conclusions that can be drawn from the Measurability Trial. In addition, we would support the adoption of an interactive approach, which would require the TSO to work closely with the Service Provider. We consider that this form of iterative process would facilitate small adjustments within the systems to ensure the resulting solution is optimal for future in-production deployment.

Although we recognise the potential benefit in extending the Measurability Trial beyond three months in order to capture more events, we also understand that this may not be possible as it will be necessary to allow sufficient lead-in time prior to the 2017/2018 System Services year.

The DRAI also consider that the proposed commercial terms will mean demand response aggregators participating in the trials will incur significant costs that effectively subsidise the trials. Again, this adverse financial situation is compounded by that fact that vast majority of the revenue generated in the DR business model is passed on to the end consumer.

We would therefore support apportioning a low weighting to the requirement to provide information on *Proposal on how the provision of the service can be independently verified*. In this way the TSO as the ultimate validator of this exercise will retain responsibility for the verification methodology, without being significantly influenced by any Service Providers which could be expected to gain commercially from a successful outcome.

Again, as per our response to Question 6, we do not agree that the number of Service Providers participating in this trial should be limited to six as set out in the proposal.

Question 10: Given the stated aims of the Qualification Trial Process, are there different criteria that would better achieve those outcomes than what is proposed here? If so, what are they and how will they work?

Currently the DRAI do not have any specific views on the Qualification Trial criteria. We would however, welcome the opportunity to work with the TSOs to develop these criteria into the future.

Finally, we hope you consider the feedback provided through this response to be useful, and look forward to hearing from you should you wish to discuss matters relating to the how the DS3 Systems Services could potentially assist the development of the DR/DSU market.

Yours sincerely,



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PATRICK LIDDY
DRAI Chairman