

CONSULTATION RESPONSE TEMPLATE

NAME OF RESPONDENT	Yvonne Coughlan, EirGrid Group (this is the response of the EirGrid Group comprising EirGrid TSO, SEMO and SONI)
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TYPE OF COMPANY	EirGrid Group
INTEREST IN DSM	Key Stakeholder

SECTION 2

QUESTION 1: Do you agree with our characterisation of the four types of benefits that demand side management can provide?

ANSWER:

Yes, EirGrid broadly agrees with the categorisation of the Demand Side management benefits. EirGrid is interested in the types of flexible measures and ancillary services that Demand Side could potentially offer. EirGrid would be very interested in the types of services that Demand Side could offer dynamically to assist in the management of the daily "peak demand net of wind".

In order to integrate renewable generation at the higher penetration levels, the adequate provision of the right combination of ancillary services will be essential. EirGrid has recently carried out a set of studies titled "All Island TSO Facilitation of Renewables Studies". These studies have shown the need for flexibility on the power system. This flexibility could be incentivised via the ancillary services mechanism. Some of the ancillary services could potentially be provided by the Demand Side sector.

By changing the nature of the system load using smart meters, ToU tariffs and efficiency measures, there is potential for a significant change in the system load patterns. The management of a changing load profile will pose challenges in terms of management of the dispatch and scheduling of system plant. However, increased information and control of demand will assist in the management of this.

QUESTION 2: Are there other cost savings which you believe demand side management can deliver?

ANSWER:

Yes, EirGrid has identified another cost saving. The addition of greater demand response in the SEM makes for a more efficient market. The addition of even small amounts of Demand Side response can enhance the efficiency of markets by removing potential price spikes in electricity prices.

EirGrid would like to highlight some other points on the cost savings, which have been outlined in the paper. These points are listed below.

- These potential savings have not been justified by any type of quantitative analysis. Studies would be required to quantify the potential cost savings.
- From an ancillary services perspective it is not clear why the cost of ancillary services provision will reduce. It is assumed that the reduction in costs is because there is a greater choice of reserve providers. However, there may also be a need for more ancillary services (greater cost) as the level of wind generation increases i.e. for spinning, non spinning reserves, regulation and other new services.
- Lower Network Costs - The ability of demand to contribute towards deferral of network investment depends on the type of demand response and the network reinforcements required. The majority of the network reinforcement projects proposed as part of the Grid 25¹ strategy have been designed to facilitate renewable integration in remote parts of the network where demand is low. There is therefore limited scope within Grid 25 to defer network investment because of Demand Side activity.

QUESTION 3: Are there additional studies and reports (to those listed in **Error! Reference source not found.**) which you are aware of and believe we should review?

ANSWER:

Yes, the following two reports would be worth reviewing.

- “All Island TSO Facilitation of Renewables Studies”
<http://www.eirgrid.com/media/Renewable%20Studies%20V3.pdf>
- International Demand Side Management Study EirGrid/SONI(as attached in cover email)

QUESTION 4: What other insights do you have from your experience of demand side management adopted internationally?

ANSWER:

There is an Economy 7 option in Northern Ireland for domestic customers. A lower tariff is charged at night (from 23:00 – 08:00). Not that many customers are using this option because of the issues with releasing heat using this form of heating. The System Operator can control blocks of off peak heating to alter the demand curve

¹ <http://www.eirgrid.com/media/Grid%2025.pdf>

overnight.

From the International Demand Side Management Study commissioned by EirGrid, the following schemes would be of interest.

National Grid STOR

Short Term Operating Reserve (STOR) is a service for the provision of additional active power from generation and/or demand reduction procured by National Grid. STOR provides access to Demand Management Side participation for a greater range of customers than was previously operated in the Standing Reserve arrangements which STOR has replaced. National Grid encourages the provision of Demand Management via aggregators (or agents) in order to establish a single point of contact for any portfolio of Demand sites, to expand Demand Side participation and to increase the availability of Short Term Operation Reserve. STOR and the use of aggregators (or agents) have increased the availability of Demand Side Management participation by reducing the barriers to entry for smaller customers.

REE Scheme

Red Eléctrica de España (SPAIN) has implemented several load interruption programmes. The programmes have been applied as an operational service to give rapid and efficient response in emergency situations and hence provide additional security of supply. They operate through load interruption contracts where customers (predominantly Large Industrial) receive a discount on their electricity bill in return for agreeing to reduce demand on request.

QUESTION 5: Are you aware of other quantitative findings from international experience which you believe are important for us to capture and consider?

ANSWER:

- International Demand Side Management Study EirGrid/SONI (As above)

QUESTION 6: Do you agree with our identified drivers of future value for demand side response/management? Are there any additional drivers we should consider?

ANSWER:

Yes, EirGrid would broadly agree with the drivers of future value for Demand Side response/management. We would also agree that the value of frequency response on an island power system is greater and that the value placed on this service will increase as the level of non synchronous generation increases.

It is the EirGrid view that the true value of ancillary services is not fully captured in the current market mechanisms. It is important that the true value of ancillary services is captured as we move toward a power system with greater levels of renewable generation. The market and support mechanisms need to be such that they act to encourage the right balance of ancillary services that are needed to operate the system. Demand Side

Management can play a role in the provision of these ancillary services. The structure and form of ancillary services is under review by EirGrid.

As referred to in Question Two, a large amount of Dispatchable Demand in the required locations would be needed to affect a reduction in transmission constraints on the power system.

SECTION 3

QUESTION 7: Are there any other aspects of current demand side activity in Ireland which should be captured?

ANSWER:

WPDRS

EirGrid has been running WPDRS for the past eight years. The current participation levels are high with approx. 360 customers and 130 MW of demand response achieved annually from November to February from 5 – 7 p.m. It is our experience that a good education system is essential to encourage customers to participate. Most customers are not experienced with energy management and need very clear information and guidelines on how to participate. The Demand response is reliable and predominantly predictable. Some customers with sophisticated energy management systems would be capable of providing a more flexible demand response. Other customers would not be capable of participating in anything more sophisticated or dynamic unless their response was automated in some way.

Powersave

EirGrid also operate a scheme called Powersave. The objective of this scheme is to encourage large- and medium-sized customers to reduce their electricity demand on days when total system demand is close to available supply. There is approximately 30 – 50 MW of demand response available in this scheme.

AGU

There is currently one Aggregated Generator Unit (AGU) registered in the SEM; this AGU was registered in the SEM in February 2010. The unit is 16 MW in size and is comprised of 44 member generators. Arranging the metering, regulation and communications for the AGU took a considerable amount of resources and time because this was the first AGU to connect in the SEM and new approaches had to be developed. Per the Trading and Settlement Code, an AGU is required to obtain prior consent from the Regulatory Authorities (RAs) before the SEM registration. This AGU was required to enter into an agreement with the RAs to comply with the same obligations in the SEM as a licensed generator would be required to comply with. In addition, a Generator Aggregator System Operator Agreement (GASOA) had to be drafted and approved by the System Operator Northern Ireland (SONI). The GASOA needed to be executed in advance of SEM registration. The current bilateral contracting arrangements need to be reviewed.

EirGrid has received considerable interest over the past year from stakeholders around participation as Demand Side in the SEM.

QUESTION 8: Do you agree with our high level assessment of the potential for demand side management in Ireland by 2020?

ANSWER:

EirGrid would agree that there is very limited data available on the detailed nature of the electricity demand in the all island market. EirGrid would support a more thorough analysis of the potential demand in the all island market. A detailed study investigating the actual potential is needed rather than just an interpolation using existing data.

The figures quoted in Table 4 seem large particularly for the Industrial and Commercial and domestic sectors. EirGrid would question the figures themselves and also the actual potential for realisable Demand Side resonate from those sectors.

SECTION 4

QUESTION 9: Do you agree with our definition of each individual demand side measure?

ANSWER:

Yes, we broadly agree with the definitions.

QUESTION 10: Is our description of the current policy baseline for each demand side measure accurate and complete. If there are omissions please point them out.

ANSWER:

Yes, the description seems to be fairly comprehensive.

Aggregation of Distributed Generation

Based on experience within WPDRS and interactions with WPDRS customers, there are approximately 100 MW of small scale CHP plant scattered around the Republic of Ireland. This plant could be capable of operating in the SEM via an aggregator/intermediary.

QUESTION 11: Do you agree with our categorisation of different types of “market issue” and typical remedies for each?

ANSWER:

Yes, EirGrid broadly agrees with the market issues highlighted. Some additional points are listed below:

Overly Restrictive Rules: An additional market issue is the lack of a suitable governance structure for Aggregated

Generated Units. A direct contract with the regulator in lieu of a license has implications in terms of governance of the Irish and Northern Irish Grid Codes and TUoS charging.

Overly Restrictive Rules: The requirement for a Demand Side Unit to register as a Trading Site Supplier Unit is viewed as a barrier to participation. It merits further discussion since it has been raised by industry as a proposed modification to the Trading and Settlement Code.

Overly Restrictive Rules: The 4 MW required minimum by the Grid Codes may be perceived as a barrier to participation in the SEM and may benefit from a review; however, it is our view that a review of the governance arrangements for DSUs and AGUs as discussed above is the main barrier to participation and a comprehensive review of these arrangements should be considered as an “Immediate” high value objective.

Inability to finance investments due to short term view of benefits: the current ancillary services arrangements do not guarantee a long term revenue source for market participants. As stated previously, it becomes even more important that the true value of ancillary services is captured as the levels of non synchronous renewable penetration increases. Allied with this the signals for ancillary services should be such to incentivise the provision of the correct mix of plant by the market. Long term signals are needed to achieve this.

Imperfect Information: The high value placed on the establishment of an ex-ante price to encourage greater response of Industrial and Commercial demand may be somewhat over valuing this component of the market revenue. In our view, Industrial and Commercial demand can participate in the SEM and potentially in the provision of ancillary services through AGUs and DSUs. To facilitate this, the governance arrangements for both of these entities need to be placed on a firm footing. In the case of AGUs and DSUs it is our view that the Capacity payments and the potential ancillary services payments are viewed as the primary sources of revenue and not the energy payments. As such, a disproportionate focus on the establishment of a firm ex-ante price may not deliver the desired benefits in terms of participation of Industrial and Commercial demand.

Imperfect Information: EirGrid would be supportive of an education campaign for Demand Side participation in the SEM. There are a large number of necessary steps to become a Demand Side Unit/Aggregated Generator Unit. It would be useful to provide participants with a helicopter guide to DSU and AGU rules/metering/communications etc.

QUESTION 12: Do you agree with our identified barriers and enablers for each of the specific demand side measures we have identified?

ANSWER:

Yes, we broadly agree with the barriers and enablers identified with the following more detailed suggestions below.

Industrial and Commercial Demand Side response via DSUs and AGUs

The single most significant barrier that has been raised to date by a number of potential participants is the requirement to register as a Supplier when registering as a Demand Side Unit in the SEM. This has been raised as a modification proposal to the Modifications Committee of the SEM and is currently being considered as part of a Working Group. It is our view that this work should be considered in tandem with the recommendation contained

in the consultation to review the TSC and Grid Codes with a view to removing barriers to participation of Industrial and Commercial demand. As such, it should be considered of high value and immediate.

We do not believe that the 4 MW minimum size threshold is a barrier for DSU participation. We have received no feedback from stakeholders indicating this. It is our understanding that typically an intermediary would aggregate a number of demand sites to reach this minimum threshold. From a system operation perspective, dispatching units less than 4 MW would pose a logistical challenge for the operators in the Control Centres.

The lack of predictability in revenues from Demand Side participation was also highlighted as an issue. We do not believe there is an issue in this regard in the SEM. From our discussions with potential Demand Side participants, one of the most attractive components of the SEM is the presence of a Capacity Payment Mechanism (CPM). It would be important to ensure that any changes arising from the CPM Medium Term review take this into consideration. Demand side can also earn revenue through the provision of ancillary services. As stated previously, EirGrid would view that capturing the true value of ancillary services becomes essential as the levels of non-synchronous renewable generation increases. Allied with this, better long term signals need to be provided to industry about the potential revenue earning capability from Ancillary Services. This would increase the predictability of revenue for Demand Side participants.

With this in mind the focus on the establishment of a firm ex-ante price in the immediate term may be misplaced as the revenue streams from the CPM and potentially from Ancillary Services are viewed as the primary revenue streams for Demand Side participation with revenue from energy payments a secondary consideration.

The annual education campaign for WPDRS has been very successful in encouraging participation. It is essential in advance of any suspension of the WPDRS that the barriers to current Demand side participation in the SEM have been understood and removed. An education campaign to promote and develop Demand Side participation in the SEM would also be needed. Otherwise there may be a significant reduction in the amount of demand response available to the system. In addition, the system conditions in terms of plant availability would have to be taken into account before removing WPDRS for a given winter period.

QUESTION 13: Do you agree with our identified market issues for each specific demand side measure and our proposed remedies to address these?

ANSWER:

Yes, we would broadly agree with the market issues identified with the following more detailed comments below.

Smart Metering

EirGrid would agree that if smart meters are rolled out (pending a cost benefit analysis), there may be benefits in allowing for advanced information displays and incorporating the facility for dynamic time of use tariffs which vary with the conditions on the day.

Home and Office automation

EirGrid would be interested in the results of the dynamic demand trial being carried out in Great Britain.

Industrial and Commercial Demand Side Response via AGUs and DSUs

Yes, we would agree with the market issues with the following comments.

- 01- The creation of a firm day-ahead price is currently being considered as part of the SEM – BETTA market coupling. However, this is at the exploratory stage. The focus of this work is on intraday trading at present. As such we would view this as a medium term rather than immediate objective. It is also worth bearing in mind that for DSUs and AGUs, the revenue from energy payments would be considered secondary to capacity and ancillary services revenue. As such, we would regard these two revenue streams as being of more importance when considering Industrial and Commercial Demand participation.
- 02- EirGrid would support a review of the Trading and Settlement Code with a view to analyzing the existing governance arrangements for DSUs and AGUs and the rules and legal frameworks where appropriate.
- 03- EirGrid would also support a review of the Irish and Northern Irish Grid Codes in relation to DSUs and AGUs. It is important that EirGrid can monitor and communicate with Demand Side response centrally dispatched from the Control Centres via either a DSU or AGU.
- 04- EirGrid would support a study of the volume of flexible demand available in the SEM. EirGrid would be happy to facilitate engagement with our WPDRS industry contacts to support this study.
- 05- EirGrid would also be happy to partake in a programme of engagement with firms in the Industrial and Commercial sectors.

QUESTION 14: What are your views on the likelihood and effectiveness of the identified policy options addressing the specified market issue and delivering the desired change?

ANSWER:

DESIRED CHANGE: GREATER PARTICIPATION OF INDUSTRIAL AND COMMERCIAL DEMAND:

Specified Market Issue: Overly Restrictive Rules

Policy option: In our opinion, the review of the governance arrangements for AGUs and DSUs should not be restricted in its scope to a review of the TSC and Grid Codes.

Specified Market Issue: Inability to finance investments due to a short view of benefits

Policy option: The establishment of ancillary services arrangements that adequately value the long term benefits to the system of the system support services **Specified Market Issue: Imperfect information**

Policy option: The establishment of a firm ex-ante price **in our view would not be effective** as this revenue is secondary to capacity payments and ancillary services revenue.

QUESTION 15: Are there any unintended undesirable consequences that any of the options might create elsewhere?

ANSWER:

As always, EirGrid would recommend that a review of this work is carried out in the context of other policies that

are under review by the SEM Committee notably:

1. Dispatch and Scheduling
2. Capacity Payment Mechanism Medium Term Review
3. Regional Integration including Intraday Trading and Market Coupling
4. Market Power and Liquidity

SECTION 5

QUESTION 16: Do you agree with our identified specific demand side measures and our assessment of the different types of benefits each demand side measure provides?

ANSWER:

No comment

QUESTION 17: Are there any additional demand side measures that we should individually identify and assess? If so, what type of benefit(s) is it felt they provide?

ANSWER:

No

QUESTION 18: Have we identified all of the relevant criteria for assessing the individual and comparative merits of the demand side measures?

ANSWER:

Other metrics could be the provision of other ancillary services such as ramping capability and the provision of both positive and negative operating reserve.

QUESTION 19: What are your views about our approach to high level assessment of different demand side options?

ANSWER:

It is not clear how the criteria were weighted to derive the answer.

QUESTION 20: Do you agree with our assessment of each demand side measure against each of the identified factors?

ANSWER:

We do not have access to the details of the analysis; it is not clear how the Demand Side measures were ranked. Some explanation of this would be useful.

QUESTION 21: Do you agree with our overall assessment of the relative merits of the different demand side options?

ANSWER:

We would disagree with the ranking of storage as low. As stated previously, it is not clear how the criteria were weighted to derive the answer. EirGrid consider that the type of flexibility that storage can provide as very useful in terms of system operation. EirGrid would support a review of the payments made to all storage plant.

QUESTION 22: Do you have any comments on our high level assessment of the benefits of different demand side measures?

ANSWER:

No comment

SECTION 6

QUESTION 23: Do you agree with our assessment of the relative priorities of different demand side options in developing a 2020 Demand Side Vision?

ANSWER:

We would agree that the review of the TSC and Grid Codes in relation to increasing participation of Industrial and Commercial demand is identified as a high value and immediate priority.

We would disagree that the creation of a firm ex-ante price, in relation to increasing participation of Industrial and Commercial demand, is a high value and immediate priority. Specifically, in relation to increasing participation of Industrial and Commercial demand, we would see it as a low priority. The above point is also valid for the creation of a firm ex-ante price in relation to greater participation of AGUs.

We would disagree with the low value categorization of storage. In the case of pumped storage, it can be operated in a number of different modes and there is unlimited capability to switch between operating modes. There are no restrictions on this operation and this flexibility is highly valued in terms of system balancing and post disturbance response and would be difficult to replicate. We would like further information on the classification of storage as having negative energy efficiency. We would be interested to know whether storage was considered in isolation or in the context of total system efficiency.

QUESTION 24: What alternative views do you have on relative (merits and) priorities?

ANSWER:

The EirGrid view would be that the development of ancillary services should feature in the Demand Side vision.

QUESTION 25: Do you agree with our proposed high level 2020 Demand Side Vision as described above?

ANSWER:

Yes, we would broadly agree with the proposed Demand Side Vision but believe the development of Ancillary Services should feature. We would like further information on the categorization of storage.

QUESTION 26: What alternative vision would you put forward?

ANSWER:

None

QUESTION 27: Do you agree with our proposed policy pathways for implementation of the identified different policy options for realising our proposed 2020 Demand Side Vision?

ANSWER:

Please note our earlier comment regarding the firm day-ahead price.

QUESTION 28: What alternative policy pathways would you propose based on your previous comments and responses?

ANSWER:

No comment

SECTION 7

QUESTION 29: Do you have any additional view or comments you feel are important/useful for us in (a) establishing a Demand Side Vision for 2020; (b) identifying associated policy development and (c) determining policy pathways?

ANSWER:

No

QUESTION 30: Are there any final comments industry stakeholders wish to make about this consultation and the proposed next steps in the consultation process?

ANSWER:

We think it would be useful to set up a working group with interested stakeholders to progress this. Active stakeholder engagement is essential.