

Aggregated Generator Units (AGU) & Demand Side Units (DSU) Licensing Arrangements

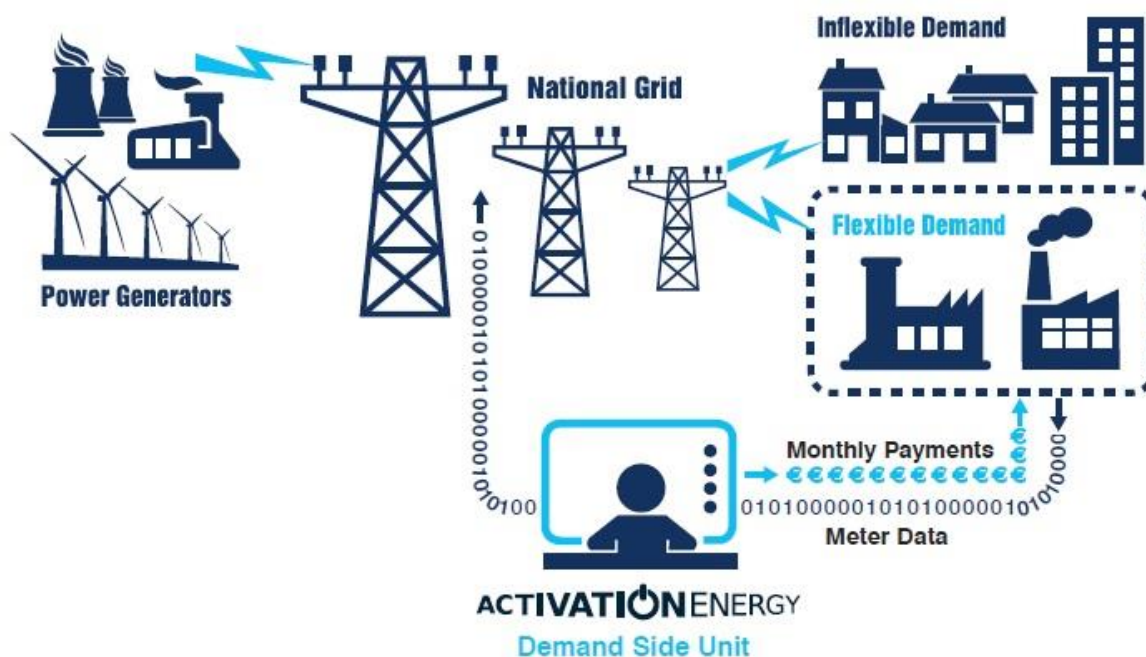
Consultation on Licensing to facilitate Participation in the Wholesale Market

Dear Sir/Madam,

Activation Energy and EnerNOC are pleased to have the opportunity to comment on this consultation and thank the Regulatory Authorities for the time it has spent putting together this document. Activation Energy plays a leading role in the development of Demand Response and the Smart Grid in Ireland. Its parent company [EnerNOC Inc](http://www.enernoc.com) (Nasdaq:ENOC) is a world leading Energy Intelligence Software provider with businesses across 4 continents.

Demand Response refers to changes in electric usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time, or to incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardised.

Demand Response makes energy markets more cost-effective for consumers and reduces stress on the electric grid. With the proper planning, demand response resources can meet a variety of needs on the grid, including providing capacity, energy, and ancillary services. Demand response also allows customers to reduce their electricity bills through peak load management, and other facility management tools.



Background

We believe it is critical that Demand Side Response be facilitated in the Wholesale Market in Northern Ireland. This is due to the wide range of benefits they provide to the system, electricity customers, and the country as a whole. Some of these benefits are set out below.

- Provision of Capacity
- Reduction of energy costs for all
- Facilitation of Renewables
- Improvement of system security
- Returning of funds to energy users
- Increasing flexibility on the electricity system
- Diversification of energy sources
- Improvement of energy efficiency on users sites
- No RoCoF Problem

Provision of capacity

Capacity is required in an electrical system to adequately meet the maximum demand of the system. Demand Response offers the ability to reduce this maximum in a way that provides the same net result but without having to build and support peaker power plants.

Reduction of energy costs

By reducing the need for costly peakers to run in the electricity system, the cost of generation can be lowered for all. This saving can then be reflected to all consumers, not just those who provide demand response. Furthermore as demand response is lower in cost than peakers, it has been shown to reduce capacity costs in many markets where the service has matured

Facilitation of Renewables

Intermittent energy resources can be challenging for system operators to manage as the natural demand curve of the system may not match the availability of generation. Demand Response and the Smart Grid offers a way to manipulate this load curve and so allow for increased integration of renewables.

Improvement of system security

As Demand Response can be faster acting than tradition generation it can improve the resilience of the system significantly. Furthermore the dispersed nature of the service means that there is a lower risk of an interruption of supply. Finally due to the diverse range of the fuel provision (from Diesel to simply switching off loads), the risk to the fuel supply is greatly reduced.

Returning of funds to energy users

Demand Response is provided to the Grid by the users themselves. This means that industrial and commercial users who are struggling with high energy prices can offset these costs against the payments they receive from the grid. This can mean the difference between increasing demand in a jurisdiction (and the associated jobs) or moving to a lower cost economy.

Increasing flexibility on the electricity system

Some electricity systems can struggle with the rapid ramp rates required by quickly changing loads or changes in generation. Demand Response is generally fast acting and so can better facilitate these changes than larger slower traditional generators. Further flexibility can be provided by the geographically spread nature of Demand Response, whereby local area schemes can be used to avoid system constraints and local grid loading problems.

Diversification of energy sources

Demand Response is provided by a range of provider types. These can range from simply switching off non-essential equipment such as pumps, chillers or process equipment, or by using local energy resources such as backup diesel generators. These diverse sources demonstrate the diversity provided by Demand Response and the resulting improvement it provides to Security of Supply.

Improvement of energy efficiency on users sites

As consumers focus attention on their energy usage as part of Demand Response and the Smart Grid, it has been shown that this also results in the consumer carrying out energy reducing projects onsite. This reduces Ireland's energy demand generally, reduces greenhouse gas emissions and reduces energy imports.

No RoCoF Problem

As Demand Response is generally provided by loads which reduce (or disconnect) when called upon, or by generators which disconnect from the Grid, they are not effected by Rate of Change of Frequency (RoCoF) effects. As they are not connected to the grid when they are providing their services they are not at risk of disconnecting due to systems faults.

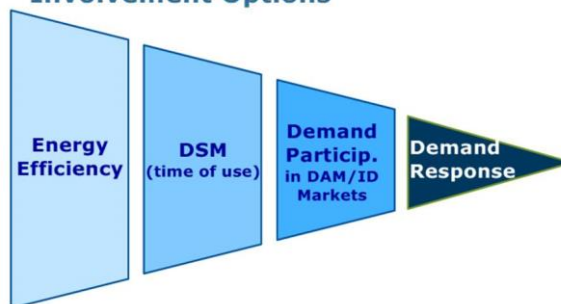
European Recognition of Demand Response Internationally

The beneficial nature of Demand Response is shared by ACERs, who view Demand Response as the most valuable opportunity which the Smart Grid can provide to the system. This view is demonstrated in the slides below which consider all parts of Demand Side involvement and rank these on the basis of the value they could provide.

Demand Response (DR)

- The most valuable service Demand can provide
- Demand capabilities compete only with storage and selected generation technologies (reservoir hydro, ...)
- Requires:
 - » Demand "being there"
 - » A business model with clear roles (aggregators)
 - » A clear regulatory framework
 - » Consumers' buy-in

A continuum of Demand-Side Involvement Options



Alberto Pototschnig - Types and Profiles of Demand Response: the Vision of ACER – 6/11/2013

These slides set out the hierarchy of value of which ACER expect from Demand Side Participation. At the peak of these expectations is Demand Response, the reduction of load on the electricity system at times of system stress. The value of the opportunity has already been measured internationally with Demand Response providing significant savings to markets where it provides a large proportion of the capacity, notably in parts of USA and Australia.

DR in Global Capacity Markets

Given market access, DR has proven to be an important resource in capacity markets

Market	DR capacity	% of total
PJM	14,118 MW	8.6%
NYISO	2,248 MW	6.7%
ISO-NE	2,164 MW	7.4%
WEM	499 MW	8.2%



Activation Energy

Activation Energy aggregates customers who can provide Demand Response and provides the service to the electricity system operators. The company currently work with 100MW of customers who can reduce their load on the electricity system for short periods by switching off equipment like chillers or pumps, or switching on their backup generators. This extra flexibility allows the system operator to facilitate more renewables onto the system while also earning a “Capacity Payment” for the customers.

The company which began to develop the project in 2007 worked with the Electricity System Operator, the Electricity Regulators and the Electricity Market Operator to develop the rules and regulations around this area of the market. Operation of the “Demand Side Unit” began in 2012 and has since returned in excess of £1,000,000 to electricity users who participate in the programme.

The company continues to be an innovator in the area, holding seats on the SEM Trading and Settlement Code Modification Committee and the Grid Code Review Panel. They are also in ongoing talks with the system operator to identify other services which the Demand Side of the system can offer to the market.

EnerNOC

[EnerNOC Inc](#) (Nasdaq:ENOC) is a leading provider of energy intelligence software (EIS). EnerNOC’s EIS solutions for enterprises include applications that help organizations procure energy, manage utility bills, optimize energy consumption, manage peak demand, and participate in demand response. EnerNOC’s EIS solutions for utilities, grid operators and energy retailers include EnerNOC Demand Resource™, a turnkey demand response resource with firm capacity commitment, and EnerNOC Demand Manager™, a software-as-a-service (SaaS) application that provides utilities and retailers with underlying technology to manage their demand response programs.

EnerNOC, which stands for Energy Network Operations Center, has won numerous awards for its technology, customer service, and industry leadership.

Specific Concerns on this consultation

Welcome to this timely introduction

EnerNOC and Activation Energy welcome this timely modification which facilitates the introduction of DSUs into Northern Ireland. As a first mover in the Republic of Ireland we have been interested in entering the Northern market for some time. We are concerned however with other potential delays which may occur to continue the disadvantage currently suffered by Northern electricity users. We therefore request that the regulator is mindful of the following issues we have identified along with any others which may remain unforeseen.

Implementation of this modification – The Regulator must swiftly implement this modification in whatever form is agreed with stakeholders that allows the practical entry of DSUs in Northern Ireland. If this is delayed we urge the regulator to consider implementation of an interim measure in its place.

Awarding of Licences to interested parties – Following the successful conclusion of this it seems likely that numerous licence applications will be submitted to the regulator. We encourage a swift resolution to this process

Delays in processing by the TSO – Similar to licencing, it is likely that the TSO will receive a significant number of applications for market entry. We encourage the regulator to instruct the TSO to carry out this process quickly and without undue delay.

Concerns of the DNO – During recent JGCRP meetings NIE have voiced concerns regarding the processing of some types of DSU. Where DSUs require changes to the connection agreements such as the awarding of a MEC, we believe this should follow the normal procedure currently in place. In other cases we do not believe any delays should be expected.

Dispatchable Demand Customer

The Term "Dispatchable Demand Customer" is confusing as it is no longer a defined term in the Grid Code (as per SONI modification of 2013 which is awaiting ratification by yourselves). Please clarify that in all cases the reference is appropriate for an Aggregated Demand Side Unit. If this is the case we propose to that all references of this should be changed to Demand Side Unit.

Conclusion

In conclusion we would like to summarise the main points which should be considered by the RAs when finalising the regulations around the provision of System Services for the Irish System.

- Demand Side Resources should be facilitated in providing system services wherever possible
- All providers should be treated equitably in the market proposed
- For Availability based procurement Model, Demand Side Resources should be considered available at all times that they are declared as available to the TSO
- Auctions should be held with a regularity greater than annually to facilitate new or growing technologies
- Where providers meet the spirit of the requirements but do not necessarily meet the wording, The RAs should provide an alternative route to service provision for new technologies