



DS3: Demand Side Management Workstream Plan 2015

CONTEXT

This workstream, together with the other DS3 workstreams, considers the integration of renewables in terms of the operational management of demand side activity.

There is provision within the SEM for Demand Side Units (DSU) and Aggregated Generator Units (AGU). Essentially these units are the aggregation of small loads/generators by an intermediary actor in the market. These units operate commercially within the SEM and are centrally dispatched. Units like these can assist with the operational integration of renewable generation by providing flexible system services. At present, there are a number of AGUs and DSUs operational in SEM, with DSU licensing issues in Northern Ireland in the process of being addressed by DETI NI and URegNI.

Demand Side Management (demand flexibility in its broadest context – the ability to control the increase and/or decrease of demand) will play a role in facilitating the management of more renewables. In addition, the future role of domestic appliances, electric vehicles, heat pumps etc. also needs to be factored into the DS3 programme.

The RAs have undertaken a programme of work to develop a Strategic Demand Response Programme for the island of Ireland. In this regard, a Decision Paper entitled “Demand Side Vision for 2020”¹ was published in May 2011 and follows a Consultation Paper (SEM-10-052) published in August 2010. This Decision Paper is a key driver of the DSM workstream.

OBJECTIVE

A key objective of this workstream is to increase participation of DSUs and AGUs in the SEM. To date this has resulted in and may require further changes to the Grid Codes, Trading and Settlement Code and the Regulatory Authorities’ Supply Licence.

WORK COMPLETED

In late 2011 and early 2012, the Regulatory Authorities/SEM Committee approved changes to the Ireland and Northern Ireland Grid Codes, the Trading and Settlement Code and the CER Supply Licence which removed many of the barriers to DSUs and AGUs participating in the SEM and becoming operational.

In 2012, two DSUs became operational in Ireland in addition to the existing AGU in Northern Ireland. A [DSU section](#) of the EirGrid website was developed, a key component of which is a DSU [application form](#). Grid Code testing procedures were put in place by EirGrid and SONI. [DSU Workshops](#) were held in Dublin, Cork and Belfast during the summer and autumn to promote demand side participation in the SEM. A review and analysis of more appropriate communications mechanisms for aggregated units from the Control Centres was completed; in addition to the existing Remote Terminal Unit (RTU) option, a Secure ICCP connection over the Internet has now been implemented.

In 2013, following the experience gained from the application process and operation of DSUs, a review of the Grid Code standards took place. A proposed DSU Grid Code modification was brought

¹http://www.allislandproject.org/en/overview_1.aspx?article=185b17f5-e666-4943-8237-f2bdbd3df33f&mode=author

to the Ireland and Northern Ireland Grid Code Review Panels in May 2013. The Ireland DSU Grid Code modification was approved by the CER in autumn 2013 and it is anticipated that URegNI will make a decision on the Northern Ireland Grid Code modifications shortly. A decision was made to trial the Secure ICCP connection over the Internet for real-time communications between aggregators and EirGrid's National Control Centre. The new mechanism has been fully implemented since September 2013 and is currently waiting on a DSU to become operational in order to begin an evaluation period. [DSU Workshops](#) were again held in Dublin and Cork during the summer and autumn to promote demand side participation in the SEM. EirGrid and SONI also developed a DSU System Operator Interface Agreement which covers liabilities on both sides. In November 2013 a DSU Joint Grid Code Working Group was established with the aim of reviewing and discussing current and future requirements for DSUs in the Ireland and Northern Ireland Grid Codes.

In the year 2014, work in the following areas has taken place:

DSU Joint Grid Code Working Group

A number of DSU modifications were presented at the June Grid Code Review Panel (GCRP) meetings which were held on 11/06/2014 in Dublin. Four of the six modifications were approved by the members of the GCRP in Ireland for submission to the CER for decision, subject to an edit to the wording in one. These four modifications were Application Form Data Requirements, Signal Requirements, Notice Time and a further Housekeeping Modification. Two further modifications (Performance Monitoring of DSU Dispatch Instructions and Frequency Requirements) were approved (subject to industry comment) at the Ireland Grid Code Review Panel on 12/11/2014. The corresponding SONI DSU Grid Code Modification Consultation closed on 12/12/2014.

Throughout 2014, there has also been further engagement with the DSOs and Industry on formulating an All-Island DSU application process. Additionally there have been discussions with industry on streamlining some aspects of the existing DSU commissioning and testing process. Through the DSU working group, a DSU switchover document was also developed which allows an individual site switch from one DSU to another.

Papers/Reports

Additionally, a number of reports were completed during 2014, including:

- The impact of large scale, coordinated demand switching on system frequency stability
- EirGrid/SONI/ESBN/NIE report on the impact of DSUs on load shedding
- A review of the existing GASOA (Generator Aggregator System Operator Agreement) and DSUSOIA (Demand Side Unit System Operator Interface Agreement) from an Ireland and Northern Ireland perspective
- Comprehensive review and removal of administrative barriers to service provision from non-conventional plant (e.g. DSU, AGU, windfarms)

FOCUS AREAS IN 2015-2017

Looking forward, some of the key areas of focus will include:

- Completion of DSU Joint Grid Code Working Group review of Ireland and Northern Ireland Application and Commissioning and Testing process

- Development of high level principles for Ancillary/System Service provision by DSUs and AGUs
- Review of communications requirements for large-scale DSM penetration
- Develop long-term Operational Policy and Tools for large-scale DSM penetration

HIGH-LEVEL PLAN

TASK NO.	TASK	RESPONSIBLE	ORIGINAL DUE DATE	DUE DATE
DSU and AGU Readiness				
DSMS.1.1	Approval of Grid Code Modification for DSU (MOD_36_10)	CER	Q4 2011	Complete
DSMS.1.2	Northern Ireland Grid Code Modification Consultation	TSOs & RAs	Q4 2011	Complete
DSMS.1.3	System Services Consultation #1	TSOs / RAs	Q4 2011	Complete
DSMS.1.4	Northern Ireland Approval of DSU Modification	URegNI	Q1 2012	Complete
DSMS.1.5	Delivering T&SC Modification	SEMC	Q1 2012	Complete
DSMS.1.6	DSU Operation (Ireland Pilot)	TSOs / Industry	Q2 2012	Complete
DSMS.1.7	System Services Consultation #2	TSOs / RAs	Q3 2012	Complete
DSMS.1.8	WPDRS phase out	EirGrid / CER	2012 – 2013	Complete
DSMS.1.9	Review of System Services arrangements for DSUs and AGUs	TSOs	Q3 2013	Complete
DSM Evolution				
DSMS.2.1	DS3 TSO-DSO Engagement Strategy modified to take account of DSM	TSOs/DSOs	New Task	Complete
DSMS.2.2	Review of relevant Network Codes from perspective of DSM	TSOs	New Task	Complete
DSMS.2.3	Joint report on impact of DSUs on load shedding	TSOs/ESBN	New Task	Complete
DSMS.2.4	Joint report on impact of DSUs on load shedding	TSOs/NIE	New Task	Complete
DSMS.2.5	Remove barriers to DSU and AGU System Service provision	TSOs	New Task	Complete
DSMS.2.6	TSO review of long-term operational issues associated with DSM	TSOs	New Task	Q1 2015
DSMS.2.7	Final DSO-TSO Workshop on TSO-DSO interaction for DSU application process	TSOs/NIE /ESBN	New Task	Q1 2015
DSMS.2.8	Agreed DSO-TSO process for DSU applications	TSOs/NIE	New Task	Q1 2015
DSMS.2.9	Agreed DSO-TSO process for DSU applications	TSOs/ESBN	New Task	Q1 2015
DSMS.2.10	Present DSU Application Process at DSU JGCWG	TSOs/NIE /ESBN	New Task	Q1 2015
DSMS.2.11	Assessment of need for DSM Tool in Control Centres	TSOs	New Task	Q2 2015
DSMS.2.12	Development of high level principles for ancillary and system service performance monitoring by DSUs and	TSOs	New Task	Q2 2015

	AGUs			
DSMS.2.13	Review of existing TSO DSU performance monitoring of dispatch instructions, application and commissioning and testing processes for large-scale DSM penetration	TSOs	New Task	Q2 2016
DSMS.2.14	Review communications requirements for large-scale DSM penetration	TSOs	Q2 2015	Q2 2016
DSMS.2.15	Develop long-term Operational Policy for large-scale DSM penetration	TSOs	Q4 2015	Q2 2016
Contracts & Licensing				
DSMS.3.1	Review of licensing arrangements for AGU	RAs	Q2 2012	Complete
DSMS.3.2	Development of regulatory contract for AGU	RAs	Q2 2012	Complete
DSMS.3.3	Decision on DSU supplier license & tie in with Bidding Code of Practice	RAs	Q4 2011	Complete
DSMS.3.4	Review if a DSU – SO contract is required		New Task	Complete
DSMS.3.5	Review of existing GASOA (Generator Aggregator System Operator Agreement) from Ireland and Northern Ireland perspective	TSOs	Q3 2012	Complete
Commissioning & Testing				
DSMS.4.1	Review and analysis of appropriate communications mechanisms for aggregated units from the Control Centres	TSOs	Q4 2012	Complete
DSMS.4.2	Decision on communications mechanisms from Control Centres	TSOs	Q1 2013	Complete
DSMS.4.3	Design and implementation of new communications mechanism from Control Centres	TSOs	New Task	Complete
DSMS.4.4	Investigate metering mechanisms for AGU	TSOs	Q1 2012	Complete
DSMS.4.5	Develop Grid Code testing procedures for AGU/DSU	TSOs	Q1 2012	Complete
DSMS.4.6	Development of process for performance validation for DSU	TSOs	Q2 2012	Complete
Grid Code				
DSMS.5.1	Review of Grid Code standards for AGUs and DSUs	TSOs	New Task	Complete
DSMS.5.2	Bring modification to Grid Code Review Panel based on review	TSOs	New Task	Complete
DSMS.5.3	Decision on Ireland Grid Code DSU modification	CER	New Task	Complete
DSMS.5.4	Bring DSU modifications arising from DSU JGCRP WG to Ireland and Northern Ireland GCRP for review	TSOs	New Task	Complete

DSMS.5.5	Decision on DSU Grid Code modifications (as submitted in 2013)	URegNI	Q1 2014	Q1 2015
DSMS.5.6	Decision on DSU modifications arising from DSU JGCRP WG	CER	Q4 2014	Q1 2015
DSMS.5.7	Decision on DSU modifications arising from DSU JGCRP WG	URegNI	Q4 2014	Q1 2015