

DS3 Programme Status Update

5th March 2013

General

- The third System Services Review consultation paper was published to the website on 19/12/2012. 20 bilateral meetings between the TSOs and interested parties were held and 26 responses were received to the consultation. Further info available [here](#).
- The three Ireland Grid Code modifications regarding wind farm steady-state reactive power, ramping and fault ride-through have been approved by the CER, effective 26/02/2013.
- The [Annual Renewable Report 2012](#) was launched by Minister Pat Rabbitte in the Alexander Hotel in Dublin on 05/11/2012.
- The All Island Renewable Connection Report - 36 Month Forecast (Q3 2012) has been published to the EirGrid website [here](#).
- The All-Island Wind and Fuel Mix Report Annual Summary for 2012 has been published to the website [here](#).
- A Joint Grid Code Working Group meeting was held in Dundalk on 11/02/2013. DNV KEMA presented on the findings of their RoCoF study into the ability of generators to ride through high RoCoF events. Their report can be found [here](#).
- An EirGrid DS3 and Smart Grids presentation was given to Engineers Ireland on 6/2/2013. A presentation entitled 'Integrating Renewables – What Europe Needs' was given by EirGrid to the IET on 21/2/2013.
- All Island WSAT went live on the 19/11/2012 and is now available in both Control Centres.
- The TSOs' recommendations on the Ireland RoCoF modifications were sent to the RAs for decision on 21/12/2012. The Northern Ireland RoCoF modification consultation has been completed. There were 5 responses received to the consultation. This modification was also sent to the RAs on 21/12/2012.

Status

Workstream	Commentary
Communications	<ul style="list-style-type: none"> • A DS3 Industry Forum took place on 05/11/2012 in the Alexander Hotel, Dublin. There were over 90 attendees. • The DS3 Section of EirGrid website is being updated regularly. The Advisory Council and JGCWG meeting documents and minutes are published to the website after every meeting. Details on Consultations, Technical Studies and Grid Code modifications are also published. • Following an open invitation, two demonstration projects to develop, trial and prove new transmission system concepts and technologies were announced at the EirGrid Customer Conference. The projects chosen were Glen Dimplex (Distributed Energy Storage Demand Side Management) and SSE / GE Wind (Emulated Inertia). These projects are now underway. • The DS3 Programme was referenced several times in the Utility Regulator's Annual Report. • All 2013 DS3 Workstream plans except Control Centre Tools & Capability have been published to the website.
System Services	<ul style="list-style-type: none"> • The third System Services Review consultation paper was published on the

	<p>EirGrid website on the 19/12/2012, available here. A supplementary note was also published on the 11/02/2013 providing further information with regard to modelling information used. KEMA has also completed an assessment of the capital costs for plant investment for the third consultation paper. The report can be found here. The consultation closed on 20/02/2013. 20 bilateral meetings were held with interested parties over the consultation period and 26 responses were received in total.</p> <ul style="list-style-type: none"> • Drafting of the recommendations paper and supplementary documentation has commenced. The recommendations paper will take account of feedback from bilateral meetings and the consultation process. A meeting with the RAs has been held to discuss the scope of the recommendations paper and agree the next steps. This recommendations paper will be sent to the RAs by 31/03/2013. • The RAs plan to issue a proposed decision for consultation after the May SEM Committee meeting and a final decision by the SEM Committee on the new System Services arrangements is planned for September 2013.
RoCoF	<ul style="list-style-type: none"> • The DNV KEMA Report on RoCoF capability of conventional generators has been received and indicates potential difficulties with conventional generators riding-through a RoCoF of 1.5 – 2 Hz/s. The report can be found here. • Both the Ireland and Northern Ireland Grid Code RoCoF modifications and supporting documentation were submitted to CER/UREg for decision on 21/12/2012. A RoCoF standard of 1 Hz/s averaged over 500 ms has been sought in both Ireland and Northern Ireland. The 2 Hz/s requirement previously sought in Northern Ireland has not been requested at this stage. Further studies are required before a final decision is made on increasing the RoCoF requirement above 1 Hz/s in Northern Ireland. Both the Ireland and Northern Ireland modifications were published to the EirGrid website here with supporting documentation including the JGCWG Position Paper and the TSOs' Opinion Paper. • At the JGCWG on 11/02/2013 the CER stated that a consultant has been engaged by CER to review the detail of the RoCoF modifications and it is possible that there will be some conclusion of this by Q2 2013 although no timeframe has been specified at present. • The DSOs have stated that they are currently not in a position to publish their reports to determine maximum RoCoF capability of the distribution system and how to increase the standard.
Grid Code	<ul style="list-style-type: none"> • The three Ireland Grid Code wind farm modifications that were approved by the Ireland GCRP have also been approved by the CER, effective 26/02/2013. • The Ireland Grid Code wind farm modification documents now need to be adopted into the Distribution Code in Ireland. • The Northern Ireland Wind Farm Power Station Settings Schedule is due to be submitted to UReg for decision by the week ending 08/02/2013. • A further Joint Grid Code Working Group meeting took place on 11/02/2013. Some of the topics which were addressed are outlined below: <ul style="list-style-type: none"> ○ The results of the DNV KEMA study on RoCoF capabilities of generators were presented. ○ Working Group participants gave an update on progress with RoCoF issues. ○ TSOs agreed to send more information on vector shifts due to system events to DSOs. ○ NIE / SONI will give an update on National Grid's proposed study into RoCoF issues. NIE / SONI met National Grid who are commencing

	<p>drafting of study scopes now but it may be some time before any further developments are made.</p> <ul style="list-style-type: none"> • A DSU modification and a Dynamic Models modification were both presented at the Ireland GCRP which was held on 20/02/2013.
DSM	<ul style="list-style-type: none"> • Two DSUs are now live in the SEM. Grid Code testing is due to commence for the third DSU in the next 4 – 6 weeks. • A proposed DSU modification was presented at the JGCRP and Ireland GCRP meetings on 20/02/2013. The majority of the modification consists of house-keeping / tidy-up. The Planning Code Appendix is updated with the data requested in the Demand Side Unit Application Form. The most significant changes are those regarding Initial Demand Side Unit Response Time and Minimum off time. A number of edits will be made to the modification and circulated to the Grid Code Review Panels, DSU participants and potential DSU participants for comment prior to a final modification being brought to the May GCRP meetings. • In Northern Ireland a consultation on the modification is being prepared. • To align with the DSU Grid Code modifications, the TSOs are working on developing a DSU interface agreement. • An IT project has been established for the design and implementation of a new communications mechanism from Demand Side Unit Control Centres to the TSO Control Centres.
Voltage Control	<ul style="list-style-type: none"> • A visit to ESBN Leopardstown took place on 06/02/2013 to gain a better understanding of the distribution control systems and procedures with respect to distribution connected generation. • A meeting was held between SONI / EirGrid and NIE on 07/02/2013 to discuss voltage control of distribution connected generation. Another meeting has been planned for 12/03/2013 to present respective considerations of the issues.
Frequency Control	<ul style="list-style-type: none"> • An audit / gap analysis of all the frequency sensitive devices on the system has been initiated. • A demonstration project with SSE / GE investigating wind emulated inertia is underway. • A meeting with ESB / NIE DSOs was undertaken to advance active power distribution system interface issues. • The Frequency Regulation Study and recommendations are currently being reviewed.
Control Centre Tools & Capability	<ul style="list-style-type: none"> • Work on the implementation of the online short circuit analysis tool in Dublin Control Centre is progressing. • Implementation of a new Wind Dispatch Tool will now need to recommence following the SEM Committee decision on Tie-Breaks (SEM-11-105). • Work on All Island demand forecasts is ongoing and has now been included as part of the EMS Integration Project (EIP project). • Currently developing the All Island EMS user interface for alarms, single line diagrams, wall overviews etc.
Model Development & Studies	<ul style="list-style-type: none"> • Powertech are working on developing the generic wind farm models (based on the wind Grid Code modifications), it is expected that the TSOs will receive these models in May. • The exciter model validation process to be used at the commissioning stage is now complete. • Review and sign-off of the process for Validating the All-Island Model against System Events has been delayed. • Some preliminary work has been done on the Voltage Dip- Induced

	<p>Frequency Dip study which confirms the Facilitation of Renewables Study results that large energy imbalances can occur if windfarms do not recover their active power quickly.</p> <ul style="list-style-type: none"> Studies are underway to consider the minimum conventional generation requirements.
WSAT – Wind Security Assessment Tool	<ul style="list-style-type: none"> The All Island WSAT tool went live on the 19/11/2012 and is now available in both Control Centres. The second stage of All-Island WSAT has started to extend the functionality e.g. improving governor models and including frequency criterion and frequency stability monitoring.
Renewable Data	<ul style="list-style-type: none"> The All Island Renewable Connection Report - 36 Month Forecast (Q3 2012) has been published to the EirGrid website here. The Annual Renewable Report 2012 was launched by Minister Pat Rabbitte in the Alexander Hotel in Dublin on 05/11/2012. The All-Island Wind and Fuel Mix Report Annual Summary for 2012 has been published to the website here. A RES Strategy Paper to provide an overview of the different aspects of work underway in EirGrid and SONI that contribute to fulfilling the 2020 renewable electricity objectives in Ireland and Northern Ireland is currently under review. The RES Curtailment Report for 2012 is currently under development.
Performance Monitoring & Testing	<ul style="list-style-type: none"> A high level requirements document for the enhanced Performance Monitoring process has been developed. Work was carried out to identify differences in Grid Code definitions in Ireland and Northern Ireland which could impact on Performance Monitoring implementation. This work was carried out during three all-island workshops. The enhanced performance monitoring process has been specified in such a way that it can take into account the different Grid Code requirements in each jurisdiction. The final All-Island Wind Farm Commissioning and Testing workshop was held in EirGrid on 23/01/2013. The presentations and recommendations were published on the website. A high-level project plan for roll out of new Performance Monitoring approach was published in January 2013. This plan will be updated throughout the year as the more detailed plan project plan is developed. A briefing session will be held with industry in Q2 2013 on the Enhanced Performance Monitoring process. An agenda and invitations will be circulated to the Joint Grid Code Review Panel and DS3 communications list in advance of the briefing session. The session will cover the context for the performance monitoring under the Grid Codes, the current process carried out by the TSOs and the proposed enhanced process which will be rolled out in Q3 2014. Industry will be invited to give feedback on the proposed enhanced process and to suggest improvements.

DS3 List of Deliverables to June 2013

Key: Complete Due Q2 2013 Due Q1 2013 Overdue Due date changed by Change Request

Task no.	Workstream	Work area	Decision/Deliverable/Task	Responsible	Original Due by Date	Due by
CCTC.1.2	Control Centre Tools & Capabilities	All-Island Operations	Development of all-island EMS screens	TSOs	31/12/2014	31/12/2014
CCTC.2.1	Control Centre Tools & Capabilities	Wind Dispatch Tool	Drafting business rules for wind dispatch into business requirement specification (BRS) (SEM-11-105)	TSOs	Complete	Complete
CCTC.2.2	Control Centre Tools & Capabilities	Wind Dispatch Tool	Costs and timelines for implementation of BRS (SEM-11-105)	TSOs / RAs	Complete	Complete
CCTC.3.1	Control Centre Tools & Capabilities	EMS	Implementation of online short circuit analysis tool in Dublin Control Centre	TSOs	31/05/2013	30/06/2013
CCTC.3.2	Control Centre Tools & Capabilities	EMS	Inclusion of Inertia Monitoring Capability in Control Centres	TSOs	Complete	Complete
CCTC.3.3	Control Centre Tools & Capabilities	EMS	Scoping of EMS Integration Project	TSOs	30/09/2012	30/09/2012
CCTC.3.4	Control Centre Tools & Capabilities	EMS	EMS Integration Project *	TSOs	31/12/2014	31/12/2014
CCTC.6.1	Control Centre Tools & Capabilities	Wind Forecasting	Implementation of incentives for forecasting accuracy of service providers	TSOs	31/03/2013	31/03/2013
CCTC.6.2	Control Centre Tools & Capabilities	Wind Forecasting	Implementation of regional forecasting	TSOs	31/03/2013	31/03/2013
CCTC.6.3	Control Centre Tools & Capabilities	Wind Forecasting	Investigation potential of sending live wind farm signals to wind forecast service providers	TSOs	31/03/2013	31/03/2013
DSM.1.1	DSM	DSU Readiness Project	Approval of Grid Code Modification for DSU (MOD_36_10)	CER	31/12/2011	31/12/2011
DSM.1.2	DSM		Northern Ireland Grid Code Modification Consultation	TSOs / RAs	31/12/2011	31/12/2011
DSM.1.3	DSM		Northern Ireland Approval of DSU Modification	NIAUR	31/03/2012	31/03/2012
DSM.1.4	DSM		Delivering T & SC Modification	SEMC	31/03/2012	31/03/2012
DSM.1.5	DSM		System Services Consultation #1	TSOs / RAs	31/12/2011	31/12/2011
DSM.1.6	DSM		System Services Consultation #2	TSOs / RAs	10/07/2012	10/07/2012
DSM.1.8	DSM		DSU Operation (ROI Pilot)	TSOs / Industry	30/06/2012	30/06/2012
DSM.2.1	DSM		Review of licensing arrangements for AGU	RAs	30/06/2012	30/06/2012
DSM.2.2	DSM	Contracts & Licensing	Review of existing GASOA	TSOs	30/09/2012	31/03/2013
DSM.2.3	DSM	Contracts & Licensing	Development of regulatory contract for AGU	RAs	30/06/2012	30/06/2012
DSM.2.4	DSM	Contracts & Licensing	Decision on DSU supplier license & tie in with Bidding Code of Practice	RAs	31/12/2011	31/12/2011
DSM.2.5	DSM	Contracts & Licensing	Review if a DSU - SO contract is required	TSOs	31/03/2013	31/03/2013
DSM.3.1	DSM	DSU Commissioning & Testing	Review and analysis of appropriate communications mechanisms for aggregated units from the Control Centres	TSOs	31/12/2012	31/12/2012
DSM.3.2	DSM	DSU Commissioning & Testing	Decision on communications mechanisms from Control Centres	TSOs	31/03/2013	31/03/2013
DSM.3.2.1	DSM	DSU Commissioning & Testing	Design and implementation of new communications mechanism from Control Centres	TSOs	30/06/2013	30/06/2013
DSM.3.3	DSM	DSU Readiness Project	Investigate metering mechanisms for AGU	TSOs	31/03/2012	31/03/2012
DSM.3.4	DSM		Develop Grid Code testing procedures for AGU/DSU	TSOs	31/03/2012	31/03/2012
DSM.3.5	DSM		Development of process for performance validation for DSU	TSOs	30/06/2012	31/03/2013
DSM.4.1	DSM	Grid Code	Review of Grid Code standards for AGUs and DSUs	TSOs	31/12/2012	31/12/2012
DSM.4.2	DSM	Grid Code	Bring modification to Grid Code Review Panel based on review	TSOs	31/03/2013	31/03/2013
DSM.4.3	DSM	Grid Code	Make decision on modification	RAs	30/06/2013	30/06/2013
FC.1.0	Frequency Control	DS3 Grid Code Workstream		TSOs / RAs / Industry	30/06/2012	COMPLETE
FC.1.1	Frequency Control	Operational Policy: RoCoF	Assessment of outputs from RoCoF Workstream	TSOs	31/12/2012	30/06/2013
FC.1.3	Frequency Control	Operational Policy: RoCoF	Assessment of Renewable Data Workstream output	TSOs	31/12/2012	COMPLETE
FC.1.4	Frequency Control	Operational Policy: RoCoF	6-monthly assessment of Renewable Data Workstream output	TSOs	New Task	30/06/2013
FC.2.1	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Study the frequency response to large disturbances based on historical data	TSOs	30/06/2012	COMPLETE
FC.2.2	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Look at long-term System Services implications for inertia provision	TSOs	30/06/2012	COMPLETE

FC.2.3	Frequency Control		Derive a working all-island system model of the Power System	TSOs	30/06/2012	COMPLETE
FC.2.4	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Obtain dynamic models that include emulated inertia	TSOs	31/12/2012	31/03/2013
FC.2.4.1	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Audit / review system frequency- and voltage-sensitive protection device settings	TSOs	New Task	30/06/2013
FC.2.5	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Look at mitigation scenarios for frequency response in conjunction with wind industry	TSOs / Wind Industry	31/12/2012	30/06/2013
FC.2.5.1	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Investigate Over-Frequency Response requirement	TSOs	New Task	30/06/2013
FC.3.0	Frequency Control		Derive a working all-island system model	TSOs	30/06/2012	COMPLETE
FC.3.1	Frequency Control	Operational Policy: Voltage-dip induced frequency dips	Obtain dynamic models that includes wind governing and emulated inertia	TSOs	31/12/2012	31/03/2013
FC.3.2.1	Frequency Control	Operational Policy: Voltage-dip induced frequency dips	Analyse and assess potential for voltage-induced frequency dips in short -term	TSOs	31/03/2013	30/06/2013
FC.3.3	Frequency Control	Operational Policy: Voltage-dip induced frequency dips	Make decision on how this issue needs to be progressed	TSOs	30/06/2013	30/06/2013
FC.4.1	Frequency Control	Operational Policy: Frequency Regulation	Study the frequency regulation issue / historical data / likely issues	TSOs	30/06/2012	31/10/2012
FC.4.2	Frequency Control	Operational Policy: Frequency Regulation	Look at long-term System Services implications for frequency regulation provision	TSOs	30/06/2012	30/11/2012
FC.4.3	Frequency Control	Operational Policy: Frequency Regulation	Look at mitigation scenarios in conjunction with wind industry	TSOs	31/12/2012	30/06/2013
FC.4.4	Frequency Control	Operational Policy: Frequency Regulation	Kick off governor test on wind farms	TSOs / Wind Industry	31/03/2013	31/03/2013
FC.4.6	Frequency Control	Operational Policy: Frequency Regulation	Discuss wind governing proposals with regulators and wind industry	TSOs / Wind Industry / RAs	31/03/2014	31/03/2014
FC.4.7	Frequency Control	Operational Policy: Frequency Regulation	Agree best way forward and new operational policies that include wind governing	All	30/09/2014	30/09/2014
FC.5.1	Frequency Control	Operational Policy: Ramping Services	Analysis of historical data and studies on expected ramping requirements in the future	TSOs	30/06/2012	30/06/2012
FC.5.2	Frequency Control	Operational Policy: Ramping Services	Look at long-term System Services for ramping services provision	TSOs	30/06/2012	30/06/2012
FC.5.5	Frequency Control	Operational Policy: Ramping Services	Approved Ramping Operational Policy	TSOs	New Task	31/03/2014
GC.01.1	Grid Code	Wind farm Steady-state control modes	Follow up on Grid Code changes with performance monitoring and testing	TSOs	31/03/2012	31/03/2012
GC.01.2	Grid Code	Wind farm Steady-state control modes	Discuss WFPS voltage control modes with DSOs – and develop changes to Distribution Codes as necessary	TSOs	30/06/2012	30/06/2012
GC.01.2.1	Grid Code	Wind farm Steady-state control modes	Develop modification to Ireland Distribution Code and bring to Distribution Code Review Panel	ESBN	New Task	30/06/2013
GC.01.2.2	Grid Code	Wind farm Steady-state control modes	Send modification to CER for approval	ESBN	New Task	30/06/2013
GC.01.3	Grid Code	Wind farm Steady-state control modes	Bring any further changes to GCRPs / DCRPs and RAs as appropriate	TSOs	31/12/2012	31/12/2012
GC.02.01	Grid Code	Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant	Decision on WFPS Reactive Power Modes in Grid Code	CER	Complete	Complete
GC.02.02	Grid Code	Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant	Draft proposal on WFPS Dynamic Reactive Power	TSOs	31/03/2012	31/03/2012
GC.02.03	Grid Code	Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant	Agree all-island position on WFPS Reactive Power	TSOs	31/03/2012	31/03/2012
GC.02.04	Grid Code	Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant	Draft proposal for Ireland and Northern Ireland Grid Code Review Panels and present	TSOs	30/06/2012	30/06/2012
GC.02.05	Grid Code	Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant	Engagement with stakeholders	TSOs	30/06/2012	30/06/2012
GC.02.06	Grid Code	Dynamic Active and Reactive Power Response – Wind farms	Final proposal for Ireland and Northern Ireland GCRPs and RAs for approval	TSOs	30/09/2012	30/09/2012
GC.02.07	Grid Code	Dynamic Active and Reactive Power Response – Wind farms	Decision on proposals	RAs	31/12/2012	31/03/2013
GC.02.08	Grid Code	Dynamic Active and Reactive Power Response – Wind farms	Discuss changes with DSOs & Plan Distribution Code Change	TSOs / DSOs	31/12/2012	31/12/2012
GC.02.09.1	Grid Code	Dynamic Active and Reactive Power Response	Develop modification to Ireland Distribution Code and bring to Distribution Code	ESBN	31/03/2013	30/06/2013

GC.02.09.2	Grid Code	– Wind farms Dynamic Active and Reactive Power Response	Review Panel Send modification to CER for approval	ESBN	New Task	30/06/2013
GC.02.10.1	Grid Code	– Wind farms Dynamic Active and Reactive Power Response	NIE to carry out review of Distribution Code prior to bringing in new standards (non-DS3 related)	NIE	New Task	31/03/2013
GC.02.10.2	Grid Code	– Wind farms Dynamic Active and Reactive Power Response	Develop modification to Northern Ireland Distribution Code and bring to Distribution Code Review Panel	NIE	New Task	30/06/2013
GC.02.10.3	Grid Code	– Wind farms Dynamic Active and Reactive Power Response	Send modification to UReg for approval	NIE	New Task	30/06/2013
GC.02.12	Grid Code	Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant	Bring proposals to industry / GCRPs / RAs as appropriate	TSOs	31/12/2014	31/12/2014
GC.03.1	Grid Code	Rate of Change of Frequency Ride-Through Ability	Bring proposal on change to RoCoF to Ireland Grid Code Review Panel	TSOs	31/12/2011	31/12/2011
GC.03.2	Grid Code	Rate of Change of Frequency Ride-Through Ability	SONI to investigate how RoCoF can be implemented in NI Grid Code	SONI	Complete	Complete
GC.03.3	Grid Code	Rate of Change of Frequency Ride-Through Ability	Present proposal to DS3 Advisory Council	TSOs	31/12/2011	31/12/2011
GC.03.4	Grid Code	Rate of Change of Frequency Ride-Through Ability	Establish DS3 Grid Code Working Group	TSOs / RAs / Industry	31/03/2012	31/03/2012
GC.03.5	Grid Code	Rate of Change of Frequency Ride-Through Ability	Discuss RoCoF with industry / stakeholders and agree a common position	RoCoF WG	30/06/2012	30/06/2012
GC.03.6	Grid Code	Rate of Change of Frequency Ride-Through Ability	Bring final proposal on RoCoF to GCRP / RAs for approval	TSOs	30/09/2012	30/09/2012
GC.03.7.1	Grid Code	Rate of Change of Frequency Ride-Through Ability	Decision on proposals	CER	31/12/2012	31/03/2013
GC.03.7.2	Grid Code	Rate of Change of Frequency Ride-Through Ability	Decision on proposals	UReg	31/12/2012	31/03/2013
GC.03.8	Grid Code	Rate of Change of Frequency Ride-Through Ability	Discuss changes with DSOs & Plan Distribution Code Changes for RoCoF relays	TSOs / DSOs	31/12/2012	31/12/2012
GC.03.8.1	Grid Code	Rate of Change of Frequency Ride-Through Ability	Review RoCoF standard in Ireland Distribution Code	ESBN	New Task	31/03/2013
GC.03.8.2	Grid Code	Rate of Change of Frequency Ride-Through Ability	Review RoCoF standard in Northern Ireland Distribution Code	NIE	New Task	31/03/2013
GC.03.8.3	Grid Code	Rate of Change of Frequency Ride-Through Ability	Bring new RoCoF standard to Ireland Distribution Code if approved for Grid Codes	ESBN	New Task	30/06/2013
GC.03.8.4	Grid Code	Rate of Change of Frequency Ride-Through Ability	Bring new RoCoF standard to Northern Ireland Distribution Code if approved for Grid Codes	NIE	New Task	30/06/2013
GC.03.8.5	Grid Code	Rate of Change of Frequency Ride-Through Ability	Send modification to CER for approval	ESBN	New Task	30/06/2013
GC.03.8.6	Grid Code	Rate of Change of Frequency Ride-Through Ability	Send modification to UReg for approval	NIE	New Task	30/06/2013
GC.04.1	Grid Code	Waste-to-Energy	Draft internal discussion document on different approaches	TSOs	31/12/2011	31/12/2011
GC.04.2	Grid Code	Waste-to-Energy	Bring proposal to Ireland Grid Code Review Panel (Grid Code modification or derogation option)	TSOs	31/12/2011	31/12/2011
GC.04.3	Grid Code	Waste-to-Energy	Decision on Waste-to-Energy proposals that were brought to the Grid Code Review Panel	CER	31/03/2012	31/03/2012
GC.05.1	Grid Code	Dynamic Model Requirements	Look at international requirements (UK/US/Australia/Europe etc.) on dynamic models	TSOs	31/03/2012	31/03/2012
GC.05.2	Grid Code	Dynamic Model Requirements	Review current requirements and collate ideas	TSOs	30/06/2012	30/06/2012
GC.05.3	Grid Code	Dynamic Model Requirements	Draft Grid Code modification / discuss with relevant parties	TSOs	31/12/2012	31/12/2012
GC.05.4	Grid Code	Dynamic Model Requirements	Bring proposal to Ireland GCRP	TSOs	31/03/2013	31/03/2013
GC.05.4.1	Grid Code	Dynamic Model Requirements	Send modification to CER for approval	TSOs	New Task	31/03/2013
GC.05.5.1	Grid Code	Dynamic Model Requirements	RA decision on proposal	CER	New Task	30/06/2013

GC.06.1	Grid Code	Demand-side Management	Bring modifications on Demand-side unit MEC to Grid Code Review Panel	TSOs	31/12/2011	31/12/2011
GC.06.2	Grid Code	Demand-side Management	Review of Grid Code standards for DSU and AGU	TSOs	31/12/2012	31/12/2012
GC.06.3	Grid Code	Demand-side Management	Develop modification to Ireland Grid Code and bring to Grid Code Review Panel	TSOs	New Task	31/03/2013
GC.06.4	Grid Code	Demand-side Management	Develop modification to Northern Ireland Grid Code and bring to Grid Code Review Panel	TSOs	New Task	31/03/2013
GC.06.5	Grid Code	Demand-side Management	Consult on modification to Northern Ireland Grid Code	TSOs	New Task	30/06/2013
GC.06.6	Grid Code	Demand-side Management	Send modification to CER for approval	TSOs	New Task	30/06/2013
GC.06.7	Grid Code	Demand-side Management	Send modification to UReg for approval	TSOs	New Task	30/06/2013
GC.08.1	Grid Code	Over-Frequency Response	Carry out a review of international best practice on Over-Frequency Response	TSOs	30/06/2012	30/06/2012
GC.08.2	Grid Code	Over-Frequency Response	Develop an appropriate modification to the Grid Code(s) to cover off this area	TSOs	31/12/2012	30/06/2013
GC.09	Grid Code	Storage Devices	Review of storage technologies	TSOs	31/12/2012	31/12/2012
GC.10.1	Grid Code	Biomass	Review of biomass technologies and characteristics	TSOs / Industry	30/09/2012	30/09/2012
GC.10.2	Grid Code	Biomass	Develop appropriate modifications to the Grid Codes to cover off this area	TSOs	31/12/2012	31/12/2012
GC.10.3	Grid Code	Biomass	Decision on proposals	RAs	30/06/2013	30/06/2013
GC.11.1	Grid Code	European Network Code	Develop plan on how to incorporate future network code requirements into Grid Codes	TSOs	New Task	30/06/2013
MDV.1.1	Model Development and Studies	Model Development and Validation	Develop all-island model for PSS/E / WSAT	TSOs	30/06/2012	30/06/2012
MDV.1.2	Model Development and Studies	Model Development and Validation	Develop process for Generation Excitation Model validation	TSOs	30/06/2012	30/06/2012
MDV.1.3	Model Development and Studies	Model Development and Validation	Develop process for validating all-island model against system events	TSOs	30/09/2012	28/02/2013
MDV.1.4	Model Development and Studies	Model Development and Validation	Develop streamlined process for carrying out large-scale system studies	TSOs	31/12/2012	30/06/2013
MDV.2.06.1	Model Development and Studies	System Studies	Investigate voltage dip induced frequency dip in the short-term	TSOs	31/03/2013	30/06/2013
MDV.2.07.1	Model Development and Studies	System Studies	Distributed Voltage Control and Dynamic Voltage Support Study Scoping	TSOs	2013	30/06/2013
MDV.2.09	Model Development and Studies	System Studies	Follow-up analysis based on DSO RoCoF Report	TSOs	New task	30/06/2013
MDV.2.1	Model Development and Studies	System Studies	Frequency Response following a large disturbance	TSOs	30/06/2012	30/06/2012
MDV.2.2	Model Development and Studies	System Studies	Loss of Largest In-feed Study	TSOs	31/03/2012	31/03/2012
MDV.2.3	Model Development and Studies	System Studies	Frequency Regulation Study	TSOs	30/06/2012	31/03/2013
MDV.2.4	Model Development and Studies	System Studies	Study of Ramping Requirements	TSOs	30/06/2012	30/06/2012
MDV.2.5.1	Model Development and Studies	System Studies	Develop streamlined approach to studies: pilot version	TSOs	31/12/2012	30/06/2013
PMT.1.1	Performance Monitoring and Testing	Documentation All-Island Performance Monitoring process and reports	Defining the current processes in EirGrid and SONI	TSOs	31/05/2012	31/05/2012
PMT.2.1	Performance Monitoring and Testing	All-Island Performance Monitoring Reporting	Publish all-island monthly system level Performance Monitoring statistics	TSOs	31/12/2011	31/12/2011
PMT.2.2	Performance Monitoring and Testing	All-Island Performance Monitoring Reporting	Delivery of EirGrid unit level quarterly Performance Monitoring reports	TSOs	31/12/2011	31/12/2011
PMT.2.3	Performance Monitoring and Testing	All-Island Performance Monitoring Reporting	Delivery of all-island unit level quarterly Performance Monitoring reports	TSOs	31/05/2012	31/05/2012
PMT.3.01	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Development of requirements for standardized Performance Monitoring on All-Island basis	TSOs	30/09/2012	31/03/2013
PMT.3.02	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Development of requirements for standardized Performance Monitoring for new system services products including engagement with industry	TSOs	30/09/2012	31/03/2014
PMT.3.03	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Implementation plan for roll-out of Enhanced Performance Monitoring system	TSOs	31/01/2013	31/03/2013
PMT.3.04	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Hold briefing sessions with Industry on performance monitoring approach and the high-level proposals for the enhanced Performance Monitoring system	TSOs, Industry	New Task	30/06/2013
PMT.3.05	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Development, Testing and Implementation of new IT Systems for enhanced performance monitoring system	TSOs	New Task	30/09/2014
PMT.3.06	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Roll out of data recording devices required for enhanced performance monitoring system	TSOs, DSOs	New Task	30/09/2014
PMT.3.07	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Documenting and publication of enhanced performance monitoring system and on new processes	TSOs	New Task	30/09/2014
PMT.3.08	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Testing by Industry users of enhanced performance monitoring system	Industry	New Task	30/09/2014
PMT.3.09	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Hold briefing sessions on enhanced performance monitoring system and on new processes	TSOs, Industry	New Task	30/09/2014
PMT.3.10	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	All-Island enhanced Performance Monitoring rolled out	TSOs	31/03/2014	31/12/2014
PMT.4.1	Performance Monitoring and Testing	Feedback of Performance Monitoring results into Operational Policy	EirGrid System Portfolio Performance Monitoring results aggregated	TSOs	31/12/2011	31/12/2011

PMT.4.2	Performance Monitoring and Testing	Feedback of Performance Monitoring results into Operational Policy	All-Island System Portfolio Performance Monitoring results aggregated	TSOs	31/05/2012	18/07/2012
PMT.4.3	Performance Monitoring and Testing	Feedback of Performance Monitoring results into Operational Policy	Operational Policy Review	TSOs	31/05/2012	18/07/2012
PMT.4.4	Performance Monitoring and Testing	Feedback of Performance Monitoring results into Operational Policy	Enhanced System Portfolio Performance Monitoring capability aggregated	TSOs	31/05/2012	31/12/2014
PMT.5.1	Performance Monitoring and Testing	Standardised and documented All-Island testing process	Update on Industry review of Commissioning and Testing process to Joint Grid Code Review Panel (JGCRP)	TSOs	30/06/2012	31/03/2013
PMT.5.2	Performance Monitoring and Testing	Standardised and documented All-Island testing process	Documented All-Island recommendations (wind and conventional) to improve and harmonise (where possible) commissioning and testing process	TSOs	31/08/2012	31/03/2013
RCF.1.01	RoCoF	Setting appropriate RoCoF standards on all generators	Bring RoCoF modification to the Grid Code Review Panel meeting	TSOs	31/12/2011	31/12/2011
RCF.1.02	RoCoF	Setting appropriate RoCoF standards on all generators	Identify regulatory mechanism for implementing RoCoF standard in Northern Ireland	SONI	31/12/2011	31/12/2011
RCF.1.03	RoCoF	Setting appropriate RoCoF standards on all generators	Formal response from generators and wind farms to modification	All generators	31/12/2011	31/12/2011
RCF.1.04	RoCoF	Setting appropriate RoCoF standards on all generators	Establish DS3 Grid Code Working Group	TSOs / Industry	31/03/2012	31/03/2012
RCF.1.05	RoCoF	Setting appropriate RoCoF standards on all generators	Working group develops proposals on RoCoF standards for Conventional and Wind Generators	TSOs / Industry	30/06/2012	30/06/2012
RCF.1.06	RoCoF	Setting appropriate RoCoF standards on all generators	Review of Working Group summary paper	TSOs	30/09/2012	30/09/2012
RCF.1.07	RoCoF	Setting appropriate RoCoF standards on all generators	Modification approval by GCRP	TSOs	30/09/2012	30/09/2012
RCF.1.08	RoCoF	Setting appropriate RoCoF standards on all generators	Bring modification to appropriate fora for Northern Ireland	SONI	30/09/2012	30/09/2012
RCF.1.09	RoCoF	Setting appropriate RoCoF standards on all generators	Approve modification to Grid Code and Distribution Code	CER	31/12/2012	30/06/2013
RCF.1.10	RoCoF	Setting appropriate RoCoF standards on all generators	Approve modification to appropriate regulatory instrument	NIAUR	31/12/2012	30/06/2013
RCF.1.11	RoCoF	Setting appropriate RoCoF standards on all generators	Review and Implementation of new standards	TSOs / DSOs / Industry	31/12/2013	30/06/2014
RCF.2.01	RoCoF	Ensuring appropriate RoCoF on distribution protection	Kick-off and scope TSO-DSO RoCoF working groups	TSOs / DSOs	31/12/2011	31/12/2011
RCF.2.02	RoCoF	Ensuring appropriate RoCoF on distribution protection	Examine safety implications and security impact on changes to G10, G59 protection settings including RoCoF and voltage	DSOs	30/06/2012	31/03/2013
RCF.2.03	RoCoF	Ensuring appropriate RoCoF on distribution protection	Provide written report on implications for RoCoF setting to loss of mains protection including implementation strategy	DSOs	30/06/2012	31/03/2013
RCF.2.04	RoCoF	Ensuring appropriate RoCoF on distribution protection	Decision on change to RoCoF protection settings	ESB Networks	30/09/2012	30/06/2013
RCF.2.05	RoCoF	Ensuring appropriate RoCoF on distribution protection	Decision on change to RoCoF protection settings	NIE	30/09/2012	30/06/2013
RCF.2.06	RoCoF	Ensuring appropriate RoCoF on distribution protection	Review and Implementation of new standards	TSOs / DSOs / Industry	31/12/2013	30/06/2014
RD.1.2	Renewable Data	Operational Policy (Internal Use Only)	High Wind Reports into Annual Summary Report	TSOs	31/03/2013	31/03/2013
RD.1.3	Renewable Data	Operational Policy (Internal Use Only)	High Wind Speed Shutdown Report	TSOs	30/06/2013	30/06/2013
RD.2.3	Renewable Data	System Records	Annual All-Island Wind and Fuel Mix Summary (External)	TSOs	31/03/2013	31/03/2013
RD.2.4	Renewable Data	System Records	Internal Wind Records Repository	TSOs	Complete	Complete
RD.2.5a	Renewable Data	System Records	Quarterly Wind Curtailment Report	TSOs	31/03/2013	31/03/2013
RD.2.5b	Renewable Data	System Records	Quarterly Wind Curtailment Report	TSOs	30/06/2013	30/06/2013
RD.2.6	Renewable Data	System Records	Meet with industry to develop the design of an All-Island RES Curtailment Analysis Report (including content and frequency of publication)	TSOs / Industry	31/03/2013	31/03/2013
RD.2.8	Renewable Data	System Records	CO2 and High Wind Correlation Report	TSOs	31/03/2013	31/03/2013

RD.2.9a	Renewable Data	System Record	6-Monthly Wind Capacity Factor Report (year-on-year comparison)	TSOs	31/03/2013	31/03/2013
RD.3.1a	Renewable Data	Renewable Outlook	All-Island Renewable Connection Report – 36-Month Forecast	TSOs	31/03/2013	31/03/2013
RD.3.1b	Renewable Data	Renewable Outlook	All-Island Renewable Connection Report – 36-Month Forecast	TSOs	30/06/2013	30/06/2013
SS.1.01	System Services		Project establishment	TSOs	31/10/2011	31/10/2011
SS.1.02	System Services		Publish International System Services Review report	TSOs	20/01/2012	20/01/2012
SS.1.03	System Services		Studies and Analysis	TSOs	15/08/2012	15/08/2012
SS.1.04	System Services		System Services Consultation #1	TSOs	31/01/2012	31/01/2012
SS.1.05	System Services		Bilateral Meetings on System Services consultation	TSOs	29/02/2012	29/02/2012
SS.1.06	System Services		Industry workshop	TSOs	15/03/2012	15/03/2012
SS.1.07	System Services		Review of Harmonised Ancillary Services and Generator Performance Incentives since introduction	TSOs	29/02/2012	29/02/2012
SS.1.08	System Services		Development of system services product options	TSOs	15/05/2012	15/05/2012
SS.1.09	System Services		System Services Consultation #2	TSOs	31/05/2012	31/05/2012
SS.1.10	System Services		Development of final proposals	TSOs	31/08/2012	31/08/2012
SS.1.11	System Services		Final consultation	TSOs	15/11/2012	15/11/2012
SS.1.11.1	System Services		Industry consultation periods (8 weeks)	TSOs	13/02/2013	20/02/2013
SS.1.11.2	System Services		Bilateral Meetings	TSOs	New task	31/12/2012
SS.1.12	System Services		Final proposals to SEMC	TSOs	30/11/2012	31/03/2013
SS.1.13	System Services		SEMC issue Proposed Decision paper	SEM Committee	New task	03/06/2013
SS.1.14	System Services		Phase 2 Implementation Project Plan published	TSOs / RAs	New task	30/06/2013
SS.2.0	System Services		Publish Phase II deadlines	TSOs	New task	30/06/2013
VC.01	Voltage Control		Decision: Steady state Reactive Power Control from Wind farms	TSOs / DSOs	30/09/2012	30/09/2012
VC.02	Voltage Control		Engagement between TSOs and DSOs on universal wind farm standard including dynamic reactive power provision and appropriate controls for embedded conventional plant	TSOs / DSOs	31/03/2012	31/03/2012
VC.03	Voltage Control		Grid Code and Distribution code changes brought to industry for discussion	TSOs / DSOs / All	30/06/2012	30/06/2012
VC.04	Voltage Control		Decision: Steady-state Reactive Power Control for embedded conventional plant	TSOs / DSOs	30/06/2012	31/12/2012
VC.05	Voltage Control		Decision: Dynamic Reactive Power Provision for transmission and distribution conventional plant	TSOs / DSOs	30/09/2012	30/09/2012
VC.06	Voltage Control		Decision: Dynamic Reactive Power Provision from transmission and distribution connected wind farms	TSOs / DSOs	31/12/2012	31/12/2012
VC.10.1	Voltage Control		Review of relevant ENTSO-E Network Codes	TSOs, DSOs	New task	31/03/2013
VC.10.10	Voltage Control		Finalise TSO/DSO principles for voltage/reactive power control	EirGrid, ESNB	New task	31/03/2013
VC.10.11	Voltage Control		Develop TSOs voltage/reactive power control policy	TSOs	31/03/2014	30/06/2014
VC.10.12	Voltage Control		Draft TSO/DSO voltage/reactive power control protocol	SONI, NIE	New task	31/03/2014
VC.10.13	Voltage Control		Consideration of different network design methodologies	SONI, NIE	New task	31/03/2014
VC.10.14	Voltage Control		Consideration of different network design methodologies	EirGrid, ESNB	New task	31/03/2014
VC.10.15	Voltage Control		Draft TSO/DSO voltage/reactive power control protocol	EirGrid, ESNB	New task	31/03/2014
VC.10.16	Voltage Control		Finalise TSO/DSO voltage/reactive power control protocol	SONI, NIE	31/03/2014	31/12/2014
VC.10.17	Voltage Control		Finalise TSO/DSO voltage/reactive power control protocol	EirGrid, ESNB	31/03/2014	31/12/2014
VC.10.2	Voltage Control		Review relevant legislation in Northern Ireland	SONI, NIE	New task	31/03/2013
VC.10.3	Voltage Control		Review relevant legislation in Ireland	EirGrid, ESNB	New task	31/03/2013
VC.10.4	Voltage Control		Consolidate Network Code / legislation reviews	TSOs, DSOs	New task	31/03/2013
VC.10.5	Voltage Control		Review of system voltage sensitive device settings (link to frequency control setting review)	TSOs, DSOs	New task	31/03/2013
VC.10.6	Voltage Control		Draft TSO/DSO principles for voltage/reactive power control	SONI, NIE	New task	31/03/2013

VC.10.7	Voltage Control		Draft TSO/DSO principles for voltage/reactive power control	EirGrid, ESBN	New task	31/03/2013
VC.10.8	Voltage Control		Scope 'Distributed Voltage Control and Dynamic Voltage Support Study' (link to Model Development & Studies workstream)	TSOs	New task	31/03/2013
VC.10.9	Voltage Control		Finalise TSO/DSO principles for voltage/reactive power control	SONI, NIE	New task	31/03/2013
VC.11.04	Voltage Control		Conclusion of demonstration projects	SONI, NIE	New task	31/12/2014
VC.11.04	Voltage Control		Conclusion of demonstration projects	EirGrid, ESBN	New task	31/12/2014
WSAT.01.1	WSAT	All-Island EMS Snapshot	Tests of the all-island EMS generated snapshots of system to ensure accuracy	TSOs	31/10/2011	31/10/2011
WSAT.01.2	WSAT	All-Island EMS Snapshot	Developing interface between WSAT and new EMS	TSOs	31/10/2011	31/10/2011
WSAT.01.3	WSAT	All-Island EMS Snapshot	Comparison of all-island power flow against state estimator	TSOs	30/11/2011	30/11/2011
WSAT.01.4	WSAT	All-Island EMS Snapshot	Final approval of functioning new snapshots in WSAT	TSOs	31/01/2012	15/06/2012
WSAT.01.5	WSAT	All-Island EMS Snapshot	Installation of redundant server	TSOs	30/04/2012	30/06/2012
WSAT.02.1	WSAT	Merging SONI model and all-island wind forecast data into WSAT	Creating all-island dynamic and contingency files	TSOs	29/02/2012	29/02/2012
WSAT.02.2	WSAT	Merging SONI model and all-island wind forecast data into WSAT	Implement All-Island system WSAT in the test server	TSOs	31/03/2012	31/03/2012
WSAT.02.3	WSAT	Merging SONI model and all-island wind forecast data into WSAT	All-Island Wind Forecast streaming to WSAT	TSOs	30/04/2012	30/04/2012
WSAT.03.1	WSAT	Validation and tuning on-line all-island TSAT dynamic models	Dynamic model validation against PSS/e	TSOs	31/07/2012	12/10/2012
WSAT.04.1	WSAT	Implementation WSAT in CHCC	Install WSAT pre-prod monitor at near-time section in SONI	TSOs	30/04/2012	30/04/2012
WSAT.04.2	WSAT	Implementation WSAT in CHCC	Install WSAT NCC monitor in CHCC	TSOs	30/06/2012	05/10/2012
WSAT.04.3	WSAT	Implementation WSAT in CHCC	Implement and run all-island WSAT pre-prod in test mode, correct errors	TSOs	30/06/2012	31/10/2012
WSAT.04.4	WSAT	Implementation WSAT in CHCC	Establish if WSAT is performing as per SONI acceptance criteria	TSOs	31/07/2012	31/10/2012
WSAT.04.4.1	WSAT	Implementation WSAT in CHCC	All-Island WSAT Manual	TSOs	02/11/2012	02/11/2012
WSAT.04.4.2	WSAT	Implementation WSAT in CHCC	All-Island WSAT Training for CHCC Staff	TSOs	13/11/2012	13/11/2012
WSAT.04.5	WSAT	Implementation WSAT in CHCC	Install All-island WSAT at NCC server and launch monitor in CHCC	TSOs	31/08/2012	16/11/2012
WSAT.05	WSAT		Official Launch WSAT simultaneously in NCC and CHCC	TSOs	30/09/2012	16/11/2012
WSAT.06.1	WSAT	Get buy-in to approach for functionality extensions from stakeholders	Set-up Acceptance criteria for extended AI WSAT	TSOs	31/05/2013	31/05/2013
WSAT.07.1	WSAT	Validation and tuning of on-line all-island TSAT dynamic models	Update TSAT Model Comparison Process and Reports to include All-island model	TSOs	28/02/2013	28/02/2013
WSAT.07.2a	WSAT	Validation and tuning of on-line all-island TSAT dynamic models	Complete all-island TSAT comparison versus frequency events reports	TSOs	31/05/2013	31/05/2013
WSAT.10	WSAT	WSAT Performance	Confirm that AI WSAT is performing as expected and has improved on previous WSAT version	TSOs	30/06/2013	30/06/2013