DS3 Programme Advisory Council Status Update

8th October 2012

General

The DS3 Programme is progressing well. Key milestones achieved since the last Advisory Council meeting include:

- The second System Services Review consultation paper regarding product options and contractual arrangements was published on 08/06/2012. The third System Services Review consultation paper is drafted and is being actively reviewed by the Regulatory Authorities.
- The proposed draft of the updated Northern Ireland Wind Farm Power Station Settings Schedule was published for consultation on 16/07/2012.
- Following extensive consultation with industry through the Joint Grid Code Working Group (JGCWG), three Grid Code modifications regarding wind farm steady-state reactive power, ramping and fault ride-through were brought to the Ireland Grid Code Review Panel (GCRP) meeting on 03/10/2012.
- The proposed RoCoF modification was discussed at both the Ireland and Northern Ireland GCRP meetings.
- Ireland's first Demand Side Unit (DSU) became operational on 29/06/2012.
- The All-Island Curtailment Report for 2011, the All-Island Renewable Connection Report - 36 Month Forecast and the High Wind Speed Shutdown Report for 2011 have been produced.
- The first All-Island Generator Performance Monitoring reports have been produced.

Status

Workstream	Commentary
Communications	• 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. • A DS3 brochure providing a high-level overview of the programme has been produced and is available on the website here. • Members of the DS3 team were in attendance at Euroscience Open Forum (ESOF) to answer questions about the programme. ESOF took place in the Convention Centre Dublin from 12/07/2012 – 16/07/2012. • A DS3 industry forum is planned for 05/11/2012 in Dublin. • Following an open invitation by the TSOs last April to take part in demonstration projects to develop, trial and prove new transmission system concepts and technologies, two projects have initially been chosen. Further details will follow.
System Services	• The second System Services Review consultation paper regarding product options and contractual arrangements was published on 08/06/2012. The consultation remained open for eight weeks until 03/08/2012. In conjunction with publication of the paper an industry forum was held on 04/07/2012. 26 responses were received to the consultation. • The third System Services Review consultation paper is drafted and is being actively reviewed by the Regulatory Authorities. This paper concerns

	financial arrangements. Detailed financial analysis has been performed involving extensive Plexos (power market modelling software) dispatch runs. Bilateral meetings will be offered to all respondents of the third consultation.
RoCoF	• Following completion of studies based on a fully integrated power system the TSOs are proposing an all-island RoCoF standard of 1 Hz/s averaged over 500 ms. However, until the second North-South line is operational the TSOs are proposing a Northern Ireland standard of 2 Hz/s, both averaged over 500 ms. • The RoCoF Grid Code modification was discussed at the Ireland GCRP meeting on 03/10/2012. It is expected to be formally proposed and voted on at the next meeting. SONI brought their modification to the Northern Ireland GCRP meeting on 03/10/2012 and it will now be published for consultation. 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. • NIE and ESB Networks are investigating the maximum RoCoF capability of the Distribution System and how to increase the standard. • Conventional generators are concerned about catastrophic plant failure and reduced lifespan due to higher and more frequent RoCoF events. The RAs have requested information from conventional generators regarding the nature of the studies required to assess RoCoF capability of the plant and a breakdown of the costs. • There will be no change to the current SNSP level without sufficient information from the conventional generators and the DSOs regarding compliance with the proposed RoCoF Grid Code modifications and appropriate testing by the TSOs. • EirGrid and SONI are considering other methods to help manage the RoCoF issue, e.g. new System Services products and Control Centre tools. • A report on historical frequency events on the Ireland and Northern Ireland Power System and events from similar island systems has been produced.

Grid Code	• The proposed draft of the updated Northern Ireland Wind Farm Power Station Settings Schedule for connecting Wind Farm Power Stations to the transmission system or the distribution system in Northern Ireland was published for consultation on 16/07/2012. 6 responses were received.
	• Following six JGCWG meetings, a number of Ireland Grid Code modifications regarding wind farm steady-state reactive power, ramping and fault ride-through and RoCoF were written and published with supporting documentation to the EirGrid website here on 06/09/2012. The Northern Ireland RoCoF modification was issued to GCRP members on 24/09/2012. Bilateral meetings were held with all major wind turbine manufacturers to discuss the proposed Grid Code modifications.
	• The wind farm modifications were discussed at the Ireland GCRP meeting on 03/10/2012. The modifications were agreed in principle subject to minor edits and are scheduled to be sent to the CER for approval in November.
	• The following reviews have been completed:
	  ○ Review of Biomass Technologies and Characteristics
	  ○ Review of International Best Practice on Over-Frequency Response
	  ○ International Requirements on Dynamic Models

DSM	• Following Grid Code Testing, Ireland's first Demand Side Unit (DSU), Activation Energy, became operational on 29/06/2012. • There are high levels of interest from customers in becoming a DSU. Two

	further applications have been received. • DSU Workshops were held in Dublin, Belfast and Cork. • A DSU webpage has been created containing an all-island application form. • A review and analysis of appropriate communications mechanisms for aggregated units from the Control Centres has commenced.
Voltage Control	• Proposed Grid Code modifications covering both static and dynamic reactive power capability from transmission-connected wind farms were brought to the Ireland GCRP meeting on 03/10/2012. • Discussions ongoing with the DSOs regarding reactive power control of distribution-connected wind farms. • Reactive power control for embedded conventional plant was discussed at the JGCRP meeting on 03/10/2012. It was decided at the meeting not to proceed with developing standards for reactive power control for embedded conventional plant as it was agreed that the current level of plant is not material. It will be kept under review.
Frequency Control	• Ramping and inertia studies have been completed and were used to inform the product options in the second System Services Review consultation paper. • The Frequency Regulation Study and the Frequency Response to Large Disturbances based on Historical Data Study are complete. • A working all-island system model has been developed for WSAT and PSS®E.
Control Centre Tools & Capability	• Work on the implementation of the online short circuit analysis tool in Dublin Control Centre is progressing. User Acceptance Testing is expected to commence by 31/01/2013. • Development of all-island demand forecasts is nearing completion. It is planned to cut over to the all-island application by 30/11/2012. • Progress on the Wind Dispatch Tool has stalled pending the SEM Committee decision on Tie-Breaks. • All DS3 inputs have been provided to the scoping of the EMS Integration Project. • The three wind forecasting deliverables are on schedule.

Model Development & Studies	• The following studies have been completed:
	  ○ Study of Ramping Requirements. The results have informed the product options for the System Services Review consultation
	  ○ Frequency Regulation Study
	  ○ Frequency Response to Large Disturbances based on Historical Data
	• The following processes have been drafted and are under review:
	  ○ Generation Excitation Model Validation
	  ○ Validating the All–Island Model against System Events
	• An all-island WSAT/PSS®E model has been completed. All-island PSS®E models for 2016 and 2020 are nearing completion.
	• The Voltage Dip-Induced Frequency Dip Study has been scoped and is underway.
	• The focus of this workstream will be to take the outputs of the Grid Code and System Services workstreams and perform further studies to determine system stability in high wind scenarios.

WSAT – Wind Security Assessment Tool	• Official Launch of the All-Island WSAT tool simultaneously in Dublin and Belfast Control Centres has been delayed until 16/11/2012. This is due to a combination of access to staff for training with the recent East-West Interconnector and Intraday Trading go-live. The all island model for WSAT

	has been validated and approved.The updated schedule can be seen below.
Renewable Data	• The All-Island Renewable Connection Report - 36 Month Forecast has been finalised and sent to the RAs, DCENR and DETI. • The All-Island Curtailment Report for 2011 has been produced. • The Annual Renewable Report 2012 is nearing completion and a provisional date of 05/11/2012 has been selected for the launch. • The High Wind Speed Shutdown report has been produced for 2011.
Performance Monitoring & Testing	• The Q1 and Q2 2012 All-Island Generator Performance Monitoring reports have been produced and issued to generators. • The high-level requirements document being developed to provide a design specification for the Enhanced Performance Monitoring System has been delayed until 12/2012. • The requirements for standardised Performance Monitoring for new system services products have been delayed until these services are approved by the RAs. • An industry review of the Commissioning and Testing process for both conventional generators and wind farms is in progress. Two workshops for conventional generators have taken place with two more planned for wind farms.

DS3 List of Deliverables to March 2013

Key: Complete | Due Q1 2013 | Due Q4 2012 | Overdue | Due date changed by Change Request

Task no.	Workstream	Work area	Decision/Deliverable/Task	Responsible	Original Due by Date	Due by
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.3.2	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.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		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 Readiness Project	DSU Operation (ROI Pilot)	TSOs / Industry	30/06/2012	30/06/2012
DSM.2.1	DSM	Contracts & Licensing	Review of licensing arrangements for AGU	RAs	30/06/2012	30/06/2012
DSM.2.2	DSM		Review of existing GASOA	TSOs	30/09/2012	31/12/2012
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.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.3.3	DSM		Investigate metering mechanisms for AGU	TSOs	31/03/2012	31/03/2012
DSM.3.4	DSM	DSU Readiness Project	Develop Grid Code testing procedures for AGU/DSU	TSOs	31/03/2012	31/03/2012
DSM.3.5	DSM	DSU Readiness Project	Development of process for performance validation for DSU	TSOs	30/06/2012	30/11/2012
FC.1.1	Frequency Control	Operational Policy: RoCoF	Assessment of outputs from RoCoF Workstream	TSOs	31/12/2012	31/12/2012
FC.1.3	Frequency Control	Operational Policy: RoCoF	Assessment of Renewable Data Workstream output	TSOs	31/12/2012	31/12/2012
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	30/06/2012
FC.2.2	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Look at long-term System Services implications for inertia provision	TSOs	31/05/2012	31/05/2012
FC.2.3	Frequency Control		Derive a working all-island system model of the Power System	TSOs	30/06/2012	30/06/2012
FC.2.4	Frequency Control	Operational Policy: Frequency Response to Large Disturbances	Obtain dynamic models that include emulated inertia	TSOs	31/12/2012	31/12/2012
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	31/12/2012

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	31/12/2012
FC.3.2	Frequency Control	Operational Policy: Voltage-dip induced frequency dips	Analyse and assess potential for voltage-induced frequency dips in short to medium term	TSOs	31/03/2013	31/03/2013
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	31/12/2012
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.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.5.3	Frequency Control	Operational Policy: Ramping Services	Development of System Services policy	TSOs	31/12/2012	31/12/2012
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.01.3	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	31/12/2012
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	Grid Code	Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant	DSOs to bring forward proposals for Distribution Code Change	DSOs	31/03/2013	31/03/2013
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	Grid Code	Rate of Change of Frequency Ride-Through Ability	Decision on proposals	RAs	31/12/2012	31/12/2012
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.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 GCRP/JGCRP, regulators	TSOs	31/03/2013	31/03/2013
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.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	31/12/2012
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
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	31/12/2012
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	31/12/2012
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	31/12/2012
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	31/10/2012
MDV.2.4	Model Development and Studies	System Studies	Study of Ramping Requirements	TSOs	30/06/2012	30/06/2012
MDV.2.5	Model Development and Studies	System Studies	Develop streamlined approach to studies	TSOs	31/12/2012	31/12/2012
MDV.2.6	Model Development and Studies	System Studies	Investigate voltage dip induced frequency dip	TSOs	31/03/2013	31/03/2013
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	All-Island Performance Monitoring	Publish all-island monthly system level Performance Monitoring statistics	TSOs	31/12/2011	31/12/2011

	and Testing	Reporting				
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.3.1	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Development of requirements for standardized Performance Monitoring on All-Island basis	TSOs	30/09/2012	14/12/2012
PMT.3.2	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Development of requirements for standardized Performance Monitoring for new system services products	TSOs	30/09/2012	Dependent on System Services workstream
PMT.3.3	Performance Monitoring and Testing	Enhanced All-Island Performance Monitoring	Implementation plan for roll-out of new Performance Monitoring approach	TSOs	31/01/2013	31/01/2013
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.5.1	Performance Monitoring and Testing	Standardised and documented All-Island testing process	Industry review of Commissioning and Testing process through All-Island workshops	TSOs	30/06/2012	31/01/2013
PMT.5.2	Performance Monitoring and Testing	Standardised and documented All-Island testing process	Documented All-Island recommendations to improve and harmonise (where possible) commissioning and testing process	TSOs	31/08/2012	31/01/2013
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	31/12/2012
RCF.1.10	RoCoF	Setting appropriate RoCoF standards on all generators	Approve modification to appropriate regulatory instrument	NIAUR	31/12/2012	31/12/2012
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	30/06/2012
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	30/06/2012

RCF.2.04	RoCoF	Ensuring appropriate RoCoF on distribution protection	Decision on change to RoCoF protection settings	ESB Networks	30/09/2012	30/09/2012
RCF.2.05	RoCoF	Ensuring appropriate RoCoF on distribution protection	Decision on change to RoCoF protection settings	NIE	30/09/2012	30/09/2012
SS.01	System Services		Project establishment	TSOs	31/10/2011	31/10/2011
SS.02	System Services		Publish International System Services Review report	TSOs	20/01/2012	20/01/2012
SS.03	System Services		Studies and Analysis	TSOs	15/08/2012	15/08/2012
SS.04	System Services		System Services Consultation #1	TSOs	31/01/2012	31/01/2012
SS.05	System Services		Bilateral Meetings on System Services consultation	TSOs	29/02/2012	29/02/2012
SS.06	System Services		Industry workshop	TSOs	15/03/2012	15/03/2012
SS.07	System Services		Review of Harmonised Ancillary Services and Generator Performance Incentives since introduction	TSOs	29/02/2012	29/02/2012
SS.08	System Services		Development of system services product options	TSOs	15/05/2012	15/05/2012
SS.09	System Services		System Services Consultation #2	TSOs	31/05/2012	31/05/2012
SS.10	System Services		Development of final proposals	TSOs	31/08/2012	31/08/2012
SS.11	System Services		Final consultation	TSOs	15/11/2012	15/11/2012
SS.12	System Services		Final proposals to SEMC	TSOs	30/11/2012	30/11/2012
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	Voltage Control		Demonstration Projects	TSOs / DSOs	31/03/2013	31/03/2013
WSAT.1.1	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.1.2	WSAT	All-Island EMS Snapshot	Developing interface between WSAT and new EMS	TSOs	31/10/2011	31/10/2011
WSAT.1.3	WSAT	All-Island EMS Snapshot	Comparison of all-island power flow against state estimator	TSOs	30/11/2011	30/11/2011
WSAT.1.4	WSAT	All-Island EMS Snapshot	Final approval of functioning new snapshots in WSAT	TSOs	31/01/2012	15/06/2012
WSAT.1.5	WSAT	All-Island EMS Snapshot	Installation of redundant server	TSOs	30/04/2012	30/06/2012
WSAT.2.1	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.2.2	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.2.3	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.3.1	WSAT	Validation and tuning on-line all-island TSAT dynamic models	Dynamic model validation against PSS/e	TSOs	31/07/2012	04/10/2012
WSAT.4.1	WSAT	Implementation WSAT in CHCC	Install WSAT pre-prod monitor at near-time section in SONI	TSOs	30/04/2012	30/04/2012
WSAT.4.2	WSAT	Implementation WSAT in CHCC	Install WSAT NCC monitor in CHCC	TSOs	30/06/2012	31/07/2012
WSAT.4.3	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.4.4	WSAT	Implementation WSAT in CHCC	Establish if WSAT is performing as per SONI acceptance criteria	TSOs	31/07/2012	31/10/2012
WSAT.4.4.1	WSAT	Implementation WSAT in CHCC	All-Island WSAT Manual	TSOs	02/11/2012	02/11/2012
WSAT.4.4.2	WSAT	Implementation WSAT in CHCC	All-Island WSAT Training for CHCC Staff	TSOs	13/11/2012	13/11/2012
WSAT.4.5	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.5	WSAT		Official Launch WSAT simultaneously in NCC and CHCC	TSOs	30/09/2012	16/11/2012