



DS3: Grid Code Workstream (2014 - 2015)

CONTEXT

The purpose of the Grid Codes in Ireland and Northern Ireland is to set the (minimum) standards relating to the operation and use of the Transmission System and define material technical aspects relating to the use of plant or apparatus connected to the Transmission or Distribution system. The Grid Codes are active documents that are continuously under review and modification. This reflects the dynamic nature of the power system where technology is continuously evolving and operating practices and procedures are updated in tandem. There is a process in place for modifying the Grid Codes via the Grid Code Review Panels. Common sections of the codes can be modified via the Joint Grid Code Review Panel. The Grid Codes have already undergone many changes to incorporate and reflect the particular technical characteristics of wind generation.

OBJECTIVES

In recent times, government policy has placed an emphasis on connecting renewable generation to the grid, particularly wind. Technical studies carried out by the TSOs and their consultants showed that very high wind penetrations necessitated Grid Code changes to ensure system stability, and that these changes should be harmonised as much as possible between Ireland and Northern Ireland to achieve an all-island effect. The required changes to both the Ireland and Northern Ireland Grid Codes are discussed and managed through this workstream. This includes all relevant consultations, recommendations and Grid Code Working Group meetings and required implementation steps following regulatory approval.

In addition, this workstream will look at potential Grid Code modifications regarding new technologies, such as waste-to-energy generation, marine energy, electric vehicles, and smart grid devices. Any subsequent changes required to the Distribution Codes will be co-ordinated through this workstream.

Ireland and Northern Ireland form a single synchronous system. It is therefore imperative that a consistent approach is applied in both jurisdictions. In addition, it is important that application of Grid Code standards is consistently applied at Distribution System-level where required.

The impact of the European Network Code adoption on the existing and proposed Grid Code standards will also be assessed. The Network Code adoption process will be handled outside of the DS3 Programme, however, this workstream will aim to keep abreast of proposed changes and ensure that any DS3 modifications align with proposed changes in Grid Code text, principles and business processes resulting from the Network Codes.

WORK COMPLETED TO DATE

In February 2013 the Ireland Grid Code modifications regarding wind farm power stations agreed by the DS3 Joint Grid Code Working Group were approved by the CER. In Northern Ireland the Wind Farm Power Station Setting Schedule was approved by URegNI in November 2013. In Ireland the Distribution Code modifications for these wind farm standards have been agreed by the Distribution Code Review Panel.

In September 2013 a modification on the Grid Code requirements for Demand Side Units was approved by the CER in Ireland. The modification is still awaiting decision in Northern Ireland. Further to this, a Joint Grid Code Working Group has been established to further assess how the Ireland and Northern Ireland Grid Codes need to evolve in the DSU space.

A letter was issued to the CER outlining and providing clarity on EirGrid's views on Grid Code application to new technologies including CHP plant.

In addition to these approved modifications, other modifications have been presented to the respective GCRPs in Ireland and Northern Ireland. A proposed modification on dynamic models is currently being reviewed by GCRP members and is under consultation in Northern Ireland.

The modification on Rate-of-Change-of Frequency (RoCoF) was consulted on by the regulators in Ireland and Northern Ireland. The regulators are currently considering a decision on this modification. A similar modification to the Distribution Code was also sent to the regulator.

FOCUS AREAS IN 2014-2015

Wind Farm modifications

With the modifications for wind farm requirements approved the focus for this workstream will be about providing clarity on the implementation of the new standards. A guidance notes document has been provided to industry to provide clarity and further engagement on the interpretation of these new standards will continue throughout 2014.

In addition to this, the implementation of the modifications on the Distribution System will also involve engagement with the DSO and industry. It will be important to ensure the consistent and co-ordinated implementation of these modifications over the coming months.

Rate-of-Change-of-Frequency

The modification for Rate-of-Change-of-Frequency (RoCoF) has been consulted on by the regulators in Ireland and Northern Ireland. In addition to this, the distribution code modification has been agreed by the DCRP and has been submitted to the regulators for review. A decision from both regulators is expected by early 2014.

Dynamic Models

A Grid Code modification for dynamic model requirements has been drafted and was discussed at the December 2013 Ireland Grid Code Review Panel meeting. In Northern Ireland, a consultation on dynamic model requirements has also been initiated. It is proposed that the modification will be finalised in Ireland and Northern Ireland in 2014. Significant engagement with industry will be required in order to get the modifications approved and also implemented throughout 2014. Modifications to the respective distribution codes may be required at a future date.

Demand Side Units

A Joint Grid Code Working Group has been established to further assess how the Ireland and Northern Ireland Grid Codes need to evolve in the DSU space. The DS3 Demand Side Management workstream will be leading the management of this work.

Distribution Code Modifications

EirGrid and SONI will continue to engage with the DSOs on DS3 Programme related modifications.

EUROPEAN NETWORK CODES

A separate body of work outside of the DS3 Programme has been initiated to consider the adoption of the European Network Codes into the Grid Codes of Ireland and Northern Ireland. As this project develops there may be instances where certain clauses relating to the DS3 Programme may require changes. This workstream will be required to consider the proposed changes to the Grid Codes due to the adoption of the Network Codes and assess whether this impacts any of the modifications brought forward in the DS3 programme.

FUTURE OF WORKSTREAM

Considering that the majority of the modifications related to the DS3 programme have been approved or are under consideration by the regulator it is envisaged that this workstream will begin to conclude. Over the next twelve months Grid Code modifications relating to DS3 will decline.

HIGH-LEVEL PLAN

TASK NO.	TASK	RESPONSIBLE	ORIGINAL DUE DATE	DUE DATE
Wind farm Steady-state control modes				
GC.1.2	Discuss WFPS voltage control modes with DSOs	TSOs	Q2 2012	Complete
GC.1.2.1	Develop modification to Ireland Distribution Code and bring to Distribution Code Review Panel	ESBN	New Task	Complete
GC.1.2.2	Send modification to CER for approval	ESBN	New Task	Complete
GC.1.2.3	RA decision on Distribution Code modification	CER	New Task	Complete
GC.1.3	TSOs and DSOs to engage on implementation of modifications for Transmission and Distribution Codes	TSOs/NIE/SONI	New Task	Ongoing
Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant				
GC.2.1	Decision on Grid Code proposals	RAs	Q4 2012	Complete
GC.2.2.1	Develop modification to Ireland Distribution Code and bring to Distribution Code Review Panel	ESBN	Q1 2013	Complete
GC.2.2.2	Send modification to CER for approval	ESBN	New Task	Complete
GC.2.2.3	RA decision on Distribution Code modification	CER	New Task	Complete
GC.2.3.1	NIE to carry out review of Distribution Code prior to bringing in new standards (non-DS3 related)	NIE	New Task	Complete
GC.2.3.2	Develop modification to Northern Ireland Distribution Code and bring to Distribution Code Review Panel	NIE	New Task	Complete
GC.2.3.3	Send modification to UReg for approval	NIE	New Task	Q1 2014
GC.2.3.4	RA decision on Distribution Code modification	UReg	New Task	Q2 2014
Rate of Change of Frequency Ride-Through Ability				
GC.3.1.1	Decision on proposals	CER	Q4 2012	Q1 2014
GC.3.1.2	Decision on proposals	UReg	Q4 2012	Q1 2014
GC.3.2.1	Review RoCoF standard in Ireland Distribution Code	ESBN	New Task	Complete
GC.3.2.2	Review RoCoF standard in Northern Ireland Distribution Code	NIE	New Task	Complete
GC.3.2.3	Bring new RoCoF standard to Ireland Distribution Code if approved for Grid Codes	ESBN	New Task	Complete
GC.3.2.4	Bring new RoCoF standard to Northern Ireland Distribution Code if approved for Grid Codes	NIE	New Task	Q2 2013
GC.3.2.5	Send modification to CER for approval	ESBN	New Task	Complete
GC.3.2.6	Send modification to UReg for approval	NIE	New Task	Q1 2014
GC.3.2.7	RA decision on new Ireland Distribution Code RoCoF Standards	CER	New Task	Q1 2014
GC.3.2.8	RA decision on new Northern Ireland Distribution RoCoF Code Standards	UReg	New Task	Q1 2014
Dynamic Model Requirements				
GC.4.1	Bring proposal to Ireland GCRP	TSOs	New Task	Q4 2014

GC.4.2	Send modification to CER for approval	TSOs	New Task	Q4 2014
GC.4.3	RA decision on proposal	CER	New Task	Q1 2015
GC.4.4	Get Dynamic Models Modifications tabled at Distribution Code	TSOs/ESBN/NIE	New Task	Q1 2015
GC.4.5	Get Dynamic Models modification approved at Distribution Code	TSOs/ESBN/NIE	New Task	Q2 2015
GC.4.6	Bring Proposal to Northern Ireland GCRP	TSOs	New Task	Q1 2014
GC.4.7	Consult on modification to Northern Ireland Grid Code	TSOs	New Task	Q1 2014
GC.4.8	Send modification to UReg for approval	TSOs	New Task	Q4 2014
GC.4.9	RA decision on proposal	UReg	New Task	Q1 2015
Demand-Side Management				
GC.5.01	Develop modification to Ireland Grid Code and bring to Grid Code Review Panel	TSOs	New Task	Complete
GC.5.02	Develop modification to Northern Ireland Grid Code and bring to Grid Code Review Panel	TSOs	New Task	Complete
GC.5.03	Consult on modification to Northern Ireland Grid Code	TSOs	New Task	Complete
GC.5.04	Send modification to CER for approval	TSOs	New Task	Complete
GC.5.05	Send modification to UReg for approval	TSOs	New Task	Complete
GC.5.06	RA decision on proposal	CER	New Task	Complete
GC.5.07	RA decision on proposal	UReg	New Task	Q1 2014
GC.5.08	Develop modification to Ireland Grid Code and bring to Grid Code Review Panel	TSOs	New Task	Q4 2014
GC.5.09	Develop modification to Northern Ireland Grid Code and bring to Grid Code Review Panel	TSOs	New Task	Q4 2014
GC.5.10	Consult on modification to Northern Ireland Grid Code	TSOs	New Task	Q4 2014
GC.5.11	Send modification to CER for approval	TSOs	New Task	Q4 2014
GC.5.12	Send modification to UReg for approval	TSOs	New Task	Q4 2014
GC.5.13	RA decision on proposal	CER	New Task	Q1 2015
GC.5.14	RA decision on proposal	UReg	New Task	Q1 2015
Grid Code Development and New Technologies				
GC.6.1	Monitor output from DS3 Workstreams to identify further Grid Code Changes	TSOs	On-going	On-going
GC.6.2	Watching brief on new technologies: Marine Energy / Off-shore Wind / Smart Devices	TSOs	On-going	On-going
GC.6.3	Tentative proposals for integrating new technologies into the grid	TSOs	On-going	On-going
Over-Frequency Reserve (formerly Negative Reserve)				
GC.7	Review if a Grid Code modification is required.	TSOs	Q4 2012	Q4 2014
European Network Code				
GC.8	Consider the impact of Network Code Adoption on DS3 modifications	TSOs	New Task	Ongoing