



DS3: Performance Monitoring & Generator Testing Workstream

BACKGROUND

The nature of the all island power system is changing to meet both Governments policies with respect to renewable energy. The recent Delivering a Secure, Sustainable System (DS3) report has indicated that the nature of the power system in Ireland and Northern Ireland will change significantly by 2020. At the core of this change is the replacement of large thermal synchronous plant with variable non synchronous renewable power plants. To manage this transformation it is essential that a detailed understanding of the changing characteristics of the power system is developed. At the core of this understanding is the need to systematically monitor the actual performance of all users of the power system over a wide range of operating conditions and disturbances. This performance monitoring supports three core aspects of facilitating this transformation namely:

- increasing certainty of how the system is performing,
- using this information to improve the modelling of the power system in order to provide greater certainty in how the power system is likely to behave with higher penetrations of wind power plant and
- facilitating the appropriate regulation and incentivisation of necessary products to ensure that the necessary aggregate portfolio performance is delivered.

Performance monitoring, including both commissioning and on-going testing of generators, needs to evolve in the coming years to meet these challenges.

APPROACH

The approach proposed in this 3 year plan is to advance the performance monitoring activities in each jurisdiction on generators and demand side plant, to harmonise across jurisdictions where appropriate on performance monitoring approaches and testing procedures and to develop a long term view of the requirements of performance monitoring including the required instrumentation, sampling speeds and measurands required. The output from the performance monitoring work-stream will provide information on an individual plant and system performance level, which can feed into generator testing and dispatch.

SCOPE

The proposed high level scope of this development plan has been broken into the following four components.

1. Performance Monitoring and Testing Standardisation for connected generators

This section of the plan is aiming to leverage existing practices and processes in performance monitoring and testing regimes in both jurisdictions and where possible document and standardise these without any major harmonisation. This will include developing necessary standard performance monitoring reports to be produced on a regular basis by the TSOs and shared with participants. In addition, operational testing regimes will be documented and developed. The aggregated performance of the system will also be reported which will serve as a baseline of the existing capability of the system.

2. Performance Monitoring and Testing Harmonisation for connected generators

This part of the DS3 programme will seek to develop an all-island approach to performance monitoring and testing for both transmission and, where required by Grid Code, distribution connected generators. It will leverage the deliverables from part 1 of the plan, but will also be informed by interactions with the DSOs and industry participants to determine a

pragmatic balance between cost of implementation, harmonisation and long term system benefit. This will include, where necessary, standardisation and harmonisation of testing requirements. Grid and Distribution Code changes in both jurisdictions may be required to achieve this objective.

3. Long term Performance Monitoring requirement Development

This part of the plan will examine the longer term needs in terms of performance monitoring and seek to define the requirements and equipment for this which will last for at least the next 10 years. This requirement will consider the quality, accuracy and reliability of the data, the different metrics that need to be recorded, the systems for managing the level of data required, archiving and access to data.

In addition, it will consider the regulatory and licence modifications required for any new equipment to ensure that there is sufficient obligation, authority and remuneration to cover the installation and on-going maintenance of necessary measuring equipment on site at both transmission and distribution units.

4. Unit and System Reporting Development

The systematic reporting on performance at a unit level will be augmented to include trending and system level information that can feed into Operational Policy development, model validation and parameter identification improvements and performance incentive implementation.

HIGH LEVEL PLAN

Performance Monitoring and Testing Deliverables	Responsible	Target Date
Documentation All-Island Performance Monitoring process and reports		
Defining the current processes in EirGrid and SONI	TSOs	May-12
All-Island Performance Monitoring Reporting		
Publish All-Island monthly system level Performance Monitoring statistics	TSOs	Dec-11
Delivery of EirGrid unit level quarterly Performance Monitoring reports	TSOs	Dec-11
Delivery of All-Island unit level quarterly Performance Monitoring reports	TSOs	May-12
Enhanced All-Island Performance Monitoring		
Development of requirements for standardized Performance Monitoring on All-Island basis	TSOs	Sep-12
Development of requirements for standardized Performance Monitoring for new system services products	TSOs	Sep-12
Implementation plan for roll-out of new Performance Monitoring approach	TSOs	Jan-13
All-Island enhanced Performance Monitoring rolled out	TSOs	Jan-14
Feedback of Performance Monitoring results into Operational Policy		
EirGrid Performance Monitoring results tracked	TSOs	Dec-11
All Island Performance Monitoring results tracked	TSOs	May-12
Operational Policy Review	TSOs	May-12
Enhanced Performance Monitoring capability tracked	TSOs	May-12
Standardised and documented All-Island testing process		
Industry review of Commissioning and Testing process as working group to Joint Grid Code Review Panel (JCRP)	TSOs	Jun-12
Documented All-Island commissioning testing procedures for generating units and identification where harmonisation not possible	TSOs	Aug-12
All-Island enhanced commissioning testing rolled out	TSOs	Jan-14