



DS3: Performance Monitoring & Testing Workstream – 2015

CONTEXT

The nature of the all-island power system is changing to meet both Governments' policies with respect to renewable energy. The *"Ensuring a Secure, Reliable and Efficient Power System in a Changing Environment"*¹ report indicated that the power system in Ireland and Northern Ireland would 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 over a wide range of operating conditions and disturbances. Performance monitoring, including both commissioning and on-going testing of generators, needs to evolve in the coming years to meet these challenges.

OBJECTIVE

The Performance Monitoring aspects of the workstream have the following objectives:

- Standardise the existing performance monitoring processes on an all-island basis;
- Develop the business processes and operational policies required for an enhanced performance monitoring process;
- Develop requirements for and build an IT system to monitor the performance of users of the system;
- Engage with stakeholders throughout the project to ensure their requirements are captured; and
- Investigate the use of improved data such as high speed data recording devices.

The testing aspects of the workstream have the following objectives:

- Carry out a review of the existing testing processes with stakeholders;
- Develop and implement recommendations to improve and standardise the testing processes; and
- Develop standardised testing processes arising from new Grid Code modifications.

The following benefits are expected if the objectives are achieved:

- Provide understanding and certainty as to how the system and the users connected to the power system are performing;
- Provide objective information on the actual performance of users of the system and use this to enforce all relevant Grid Code standards, and where appropriate Distribution Code standards;
- Using this information to inform operational policies and 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

¹ [Ensuring a Secure, Reliable and Efficient Power System in a Changing Environment](#), June 2011

- Facilitating the appropriate regulation and incentivisation of Generator Performance Incentives and System Services products to ensure that the necessary aggregate portfolio performance is delivered.

WORK COMPLETED IN 2012

The first phase of the Performance Monitoring aspects of the workstream focused on standardising and documenting the existing processes in EirGrid and SONI. Monthly and quarterly all-island reports are now produced on the aggregated portfolio performance which feed into the development of operational policy. The initial phase of Performance Monitoring also focused on identifying and documenting the TSO high-level business requirements for an enhanced all-island performance monitoring process.

The workstream also focused on carrying out an industry review of the current Commissioning and Testing process and presenting recommendations to industry on areas for improvement in the current processes. The industry review was discussed at the Joint Grid Code Review Panel meeting in May 2012 and it was agreed to set up all-island workshops to review the current processes employed for both conventional and wind farm power stations. The conventional generator testing review workshop and the publication of the recommendations took place in late 2012. The windfarm testing review workshop took place in late 2012.

WORK COMPLETED IN 2013

The high level requirements for the enhanced performance monitoring system, developed in 2012, were presented to industry for comment in 2013 through a number of all-island workshops. The findings from these workshops were published by the TSOs and where applicable were incorporated into the enhanced process. Following this, the TSOs worked on development of the detailed IT design specification for the new system.

The wind farm testing review recommendations were published in January 2013. Regular updates on the project progress and upcoming work were presented at the various DS3 Industry Forums and also at each Joint Grid Code Review Panel meeting.

WORK COMPLETED IN 2014

The TSOs completed the detailed IT design specification at the beginning of 2014. Following this, development of the new IT system commenced and is on-going.

Report templates for the new system were published and industry feedback was received through a series of bi-lateral meetings. An industry workshop took place in Belfast on 24th June where the primary focus was in presenting the TSOs' proposed process for how performance issues will be

classified and followed up under the new approach and to seek feedback from Industry on these proposals. Acting on feedback received, the TSOs committed to reviewing the proposed tolerances and priorities during the trial run of the new system, when live data will be available.

Work completed in the Testing and Commissioning section of the workstream included the standardisation of testing procedures, where applicable, on an all-island basis. A number of Test Procedure Templates for both wind farms and conventional units were published for comment and are now in use during testing.

FOCUS AREAS IN 2015

The main focus for the Performance Monitoring & Testing workstream in 2015 will be:

- Continuing development of the Enhanced Performance Monitoring IT System
- Remaining Test Procedure Templates and the Test Report Templates for both wind farms and conventional units published

It is expected that the Performance Monitoring and Testing Workstream Plan will be updated in Q1 2015 to take account of the December 2014 SEM Committee System Services decision. This revised plan will outline specific deliverables related to incorporation of the performance monitoring of the proposed new System Services into the Enhanced Performance IT System.

HIGH-LEVEL PLAN

It is expected that the Performance Monitoring and Testing Workstream Plan will be updated in Q1 2015 to take account of the December 2014 SEM Committee System Services decision. This revised plan will outline specific deliverables related to incorporation of the performance monitoring of the proposed new System Services into the Enhanced Performance IT System.

TASK NO.	DELIVERABLE	RESPONSIBLE	ORIGINAL DUE DATE	DUE DATE
Documented All-Island Performance Monitoring process and reports				
PM&T.1.1	Defining the current processes in EirGrid and SONI	TSOs	Q2 2012	Complete
All-Island Performance Monitoring Reporting				
PM&T.2.1	Publish all-island monthly system level Performance Monitoring statistics	TSOs	Q4 2011	Complete
PM&T.2.2	Delivery of EirGrid unit-level quarterly Performance Monitoring reports	TSOs	Q4 2011	Complete
PM&T.2.3	Delivery of all-island unit-level quarterly Performance Monitoring reports	TSOs	Q2 2012	Complete
Enhanced All-Island Performance Monitoring				
PM&T.3.01	Development of requirements for standardized Performance Monitoring on All-Island basis	TSOs	Q1 2013	Complete
PM&T.3.02	Implementation plan for roll-out of Enhanced Performance Monitoring system	TSOs	Q1 2013	Complete
PM&T.3.03	Hold briefing sessions with Industry on new approach and the high-level proposals for the new system	TSOs/Industry	Q2 2013	Complete
PM&T.3.04	Publish findings and actions arising from workshops on the high-level proposals for the enhanced system	TSOs	Q3 2013	Complete
PM&T.3.05	Delivery of Performance Monitoring IT System	TSOs	Q3 2014	Q3 2016
PM&T.3.06	Develop business case and scope for trial roll out of high speed data recorders	TSOs	Q1 2014	Complete
PM&T.3.07	Development of Performance Monitoring Business Processes			
PM&T.3.07.1	TSO/DSO agree on enhanced process and engagement plan	TSOs/DSOs	New	Complete
PM&T.3.07.2	Engagement with Industry on workflow and report templates	TSOs/Industry	New	Complete
PM&T.3.07.3	Engagement with Industry through workshops to present proposed business processes and worked examples	TSOs/Industry	Q1 2014	Complete
PM&T.3.07.4	Engagement with Industry through workshops to present final business processes	TSOs/Industry	New	Complete
PM&T.3.07.5 (TDP.12)	Develop and raise Modification to the Grid Codes and Distribution Codes where relevant	TSOs/DSOs/Industry	Q1 2015	Q1 2017

PM&T.3.07.6 (TDP.13)	Development of detailed user guide and business processes for enhanced system	TSOs	Q3 2014	Q4 2016
PM&T.3.07.7 (TDP.17)	Determination of final tolerances and priorities for business process.	TSOs/DSOs/Industry	New	Q4 2016
PM&T.3.08 (TDP.15)	Parallel run of enhanced system through trial run with any interested customers	TSOs/DSOs/Industry	Q3 2014	Q4 2016
PM&T.3.09 (TDP.16)	Industry training of enhanced system through one-to-one sessions	TSOs/Industry	Q3 2014	Q4 2016
PM&T.3.10	Go-Live of enhanced performance monitoring system	TSOs	Q4 2014	Q4 2016
Feedback of Performance Monitoring results into Operational Policy				
PM&T.4.1	EirGrid System Portfolio Performance Monitoring results aggregated	TSOs	Q4 2011	Complete
PM&T.4.2	All-Island System Portfolio Performance Monitoring results aggregated	TSOs	Q2 2012	Complete
PM&T.4.3	Operational Policy Review	TSOs	Q2 2012	Complete
PM&T.4.4	Enhanced system portfolio performance monitoring capability aggregated	TSOs	Q4 2014	Q4 2016
Enhanced Testing Processes				
PM&T.5.1	Update on Industry review of Commissioning and Testing process to Joint Grid Code Review Panel	TSOs	Q1 2013	Complete
PM&T.5.2	Documented All-Island recommendations to improve and harmonise (where possible) commissioning and testing process	TSOs	Q1 2013	Complete
PM&T.5.3	Implement enhanced testing recommendations received from workshops			
PM&T.5.3.1	WFPS standard test procedure templates developed and published for use	TSOs	Q4 2013	Q1 2015
PM&T.5.3.2	WFPS standard test report templates developed and published for use	TSOs	Q4 2013	Q3 2015
PM&T.5.3.3	CDGU standard test procedure templates developed and published for use	TSOs	Q4 2013	Q3 2015
PM&T.5.3.4	CDGU standard test report templates developed and published for use	TSOs	Q4 2013	Q3 2015
PM&T.5.4	Develop standard testing processes based on new Grid Code modifications where applicable	TSOs	Q4 2013	Complete
PM&T.5.5	Consideration of standardised testing processes arising from Distribution Code modifications	DSOs	Q4 2013	Complete