Workshop Findings

DS3
Enhanced Performance Monitoring

Revision History

Date	Version	Author	Description of Changes
01/08/2013	V1.0	David Carroll	First Version

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1. Introduction

The purpose of this document is to summarise the findings from the Enhanced Performance Monitoring workshops. These were hosted by EirGrid and SONI, as part of the DS3 programme[1], on the 6th of June 2013 in Belfast and the 11th of June 2013 in Dublin. The workshops presented the current performance monitoring approach, included presentations from four customers on their perspective of performance monitoring and finally the EirGrid and SONI aspirations for the Enhanced Performance Monitoring approach were presented. It was noted at the workshops that the business processes associated with the Enhanced Performance Monitoring process would be addressed through later workshops. The workshops were well attended and there was excellent engagement and participation from the attendees.

2. Workshop Findings

The findings presented in this document are those which were noted by EirGrid and SONI at the workshops and from the responses received from Industry following the workshops. Section 2.1 covers comments raised on the existing Performance Monitoring process, Section 2.2 addresses issues raised about the proposed Enhanced Performance Monitoring process while Section 2.3 covers items that were raised about the business process for the enhanced system.

[1] Further information on the DS3 programme can be found at http://www.eirgrid.com/operations/ds3/ or http://www.soni.ltd.uk/Operations/sg/DS3/

2.1. Existing Performance Monitoring

NO	ISSUED RAISED	RESPONSE
2.1.1	Industry asked what role the control centres play in performance monitoring. Specific examples of the control centres using incorrect reason codes and not informing generators if they do not follow dispatch instructions were raised.	The TSOs have raised the concern of reason codes to the control centres and a list of all chargeable reason codes and when they should be used has been circulated and this can be found in Appendix A. It should be noted that the responsibility of ensuring all reason codes are correct is with the generating station and there is a facility in EDIL to allow retrospective changes to be made up to four hours following the effective time of the declaration. The control centres endeavour to inform stations if they do not respond to dispatch instructions, however the responsibility of ensuring that dispatch instructions are complied with is with the generating station per the Grid Codes.
2.1.2	Discrepancies in relation to whether testing is allowed during shutdown and what is allowed needs to be clarified e.g. secondary fuel test and safety value testing	The control centres facilitate testing if a unit is desynchronising if it does not materially impact on the shutdown process (e.g. timelines and reserve provision). The same criteria apply to this period as would do under normal operations.
2.1.3	The delay in implementing requested EDIL upgrades was raised and examples such as reason codes for hydro units, an email facility to stations when the TSOs make retrospective EDIL declarations, an automatic feed to allow real-time ambient declarations.	The TSOs are currently carrying out impact assessments to incorporate these changes in EDIL. An update will be provided in due course when timelines are available.
2.1.4	The delay in issuing Dispatch Test Reports arising from windfarm non-compliance issues was raised by Industry. It was noted by Industry that these can take up to two months to be issued. A request to make test reports available one business day following a dispatch test was requested.	The TSOs will endeavour to have the dispatch test reports issued to windfarms 10 business days following the test. One business day is currently too onerous as the TSOs need to carry out checks and analysis on the data and this is a resource intensive task.
2.1.5	It was noted by Industry that the control centres often contact the operators directly for issues and the performance monitoring teams may not be aware of these issues.	As presented in the workshops the existing process has many manual aspects which rely on the control centres logging items for follow up. We have requested the control rooms to ensure any performance issues are appropriately logged for follow up. Due to the automated nature of the enhanced process it is expected that any issues should be automatically identified as part of this process.
2.1.6	The wind industry had made a request for an additional relay to be installed in the RTU to allow them have read only access to all dispatch instructions to facilitate trouble shooting.	An additional relay will be installed on EirGrid RTUs as the opportunity arises. The relay being used will have a spare dry contact which a windfarm would be available to use. To connect to this relay the windfarm will need to provide cabling up to the ETI enclosure which may involve additional parties. This would also require coordination with ESB Telecoms to facilitate connection of the cabling to the relay.

		Please note that the roll out of the additional relay is work in progress and may not yet be installed at each site. Note that wind dispatch instructions in SONI are currently published through EDIL.
2.1.7	The wind industry noted that the 10 day notification process for rectifying controllability issues can be onerous for getting OEM support. It was requested whether the 10 days could be expanded if the windfarm could show their plan for rectifying the issue.	The TSOs are currently considering this and will provide an update at the next Joint Grid Code Review Panel Meeting on 11/09/2013.
2.1.8	The current tolerance for compliance with windfarm active power setpoints is set to ± 1 MW in EirGrid and 3% in SONI. The wind industry noted issues complying with this for smaller windfarms and requested a larger tolerance.	The existing performance monitoring tolerances will be reviewed.
2.1.9	The wind industry requested for worked examples of how the NRMSD methodology is applied to monitoring of the Available Active Power signal.	A worked example of the NRMSD approach used by the TSOs to assess the compliance of the Available Active Power signal for windfarms has been developed. Please email DS3@EirGrid.com for a copy of this worked example. A document describing the assessment methodology and signal standard for EirGrid can be found here while the SONI document can be found here.
2.1.10	The wind industry noted that single instances of failure to comply with an active power setpoint are still receiving formal notification for the 10 day process from EirGrid.	Information on the daily windfarm performance monitoring process used by EirGrid can be found here and this process remains unchanged. A single non-compliance of active power control identified through the daily process can result in a change to the windfarm controllability category if not rectified within the allowed timeframes. The monthly windfarm performance reports use trends to identify any dispatch instructions that were not identified through the daily process. Currently the monthly reports do not result in changes to controllability categories.
2.1.11	The wind industry requested on whether met mast data was still required.	The requirement to have a met mast is outlined in the Grid Codes. This data is utilised in the event of a transmission outage affecting the windfarm per the process document here.
2.1.12	The TSOs were requested to provide the link for where category information is published.	This can be found under General Publications on the EirGrid website here or on the SONI website under Publications here.
2.1.13	Industry commented on the OSC consultation paper and the proposed increase in trip charging.	In the recent 2013/2014 AS/OSC Decision Paper, found here, the Regulatory Authorities commented that they would like to see this consultation on refining the trip charge be progressed so that any changes, if required, can be implemented in time for the 2014/15 tariff year.
2.1.14	The systems in the TSOs should allow the use of multiple reserve curves to reflect the actual capabilities of the units.	This was raised by the TSOs in the recent 2012/2013 AS/OSC Recommendations Paper which the Regulatory Authorities have approved. The TSOs have endeavoured to have this change implemented by the 2014/2015 tariff year as found here .

2.1.15	A comment was made that the change in controllability category for windfarms was disproportionate compared to conventional units.	The TSOs actively follow up with conventional generating units if there is an issue in relation to compliance with dispatch instructions. To date the non-compliances in this area has been very small. Through operation it was determined that there were instances whereby a number of windfarms had compliance issues relating to dispatch instructions and their available active power signal which had an impact on controllability of the system. As all centrally dispatchable wind was originally being dispatched on a pro-rata basis the non compliance of a number of windfarms resulted in increased curtailment/constraint of other compliant windfarms. In March 2012 the TSOs published the Wind Farm Controllability Categorisation Policy which outlined the controllability categorisation of wind farms and this document can be found here.

2.2. Proposed Enhanced Performance Monitoring System

NO	ISSUE RAISED	RESPONSE
2.2.1	TSOs were asked to share the aggregated portfolio performance and TSO performance following frequency events with industry including scheduled reserve, actual reserve, expected performance, achieved performance, RoCoF, SNSP and inertia.	This will be included in the specification of the system. As discussed at the workshop the performance of individual units cannot be published due to confidentially requirements.
2.2.2	Industry noted that the Technical Offer Data (TOD), which they submit to the market, has no facility to submit anything less than the maximum capabilities.	Under 4.26 of the Trading and Settlement Code generators are required to represent the *"real capabilities"* of the unit in their TOD. There is also a requirement for the participant to ensure that they carry out a review of their approved sets at least every three months (3.42N). We would expect that all participants comply with this.
2.2.3	Industry raised concerns in relation to expected vs. actual performance for certain warmth conditions. They believe the current Grid Codes are too onerous, especially for CCGTs, and do not provide enough granularity for warmth states. They agreed that the Grid Code Modification submitted needed to be revisited as this sought to increase all time boundaries.	The TSOs will action this as part of the next Joint Grid Code Review Panel (JGCRP) Meeting on 11/09/2013.
2.2.4	The under frequency calculation was discussed and specifically the following items: 1. The changing nature of frequency transients during system events and the expected performance; 2. Where the pre-event output and frequency should be measured. Industry deemed the current methodology of averaging 30 to 60 seconds before an event as being insufficient due to ramping to dispatch instructions amongst one of the reasons; 3. What constitutes the end of a frequency event; 4. That any worked examples are discussed as part of a sub committee of the Joint Grid Code Review Panel or as part of further work shops.	The TSOs will consider the feedback. The TSOs are analysing the events from October 2010 to June 2013 to determine whether the nature of transient events has changed and this will be shared with industry. The TSOs propose the course of action will be determined with Industry through the JGCRP.
2.2.5	The importance of transparency in relation to the assessment methodologies employed by the TSOs as part of the enhanced process was raised by	This is one of the key objectives of the enhanced process as presented at the workshops. The TSOs will make the assessment methodologies available prior to go-live of the system.

	Industry.	
2.2.6	The TSOs noted that these workshops are part of the requirements gathering phase and all requirements captured may not be implementable due to cost benefit reasons. Industry requested the TSOs to publish a high level cost benefit analysis of what is/is not included in the final system.	The TSOs will be holding workshops with Industry to discuss the business processes associated with the enhanced performance monitoring system before Q1 2014. As part of these workshops the TSOs propose that an overview is given of what will be included in the enhanced system as a detailed IT assessment should be carried out by this point.
2.2.7	The TSOs were requested to provide clarification on how the loading and ramp rate assessments will be calculated and to provide worked examples on this.	As discussed at the workshops the TSOs are currently beginning the detailed design phase of the enhanced system. As part of this process the TSOs will publish detailed worked examples of the loading and ramp rate calculations. The TSOs propose to publish these before Q1 2014.
2.2.8	Generators with dual fuel capability requested that the enhanced system should be able to benchmark their performance based on the respective fuel they are running on.	As part of the detailed development of the enhanced performance monitoring process the design to incorporate both single and dual fuel units will be included.
2.2.9	Industry noted that quick reporting of events is essential to allow timely follow up for any performance issues and for all data to be made available. This should include access to high speed data recording. Access arrangements to certain information should also be made available to OEMs if required through the generator.	An objective of the enhanced system is to make information available in the most timely manner. As part of the development the TSOs are considering how close to real time this can be made available, whilst also respecting data quality control processes. It is also being proposed that the triggered high speed files will be made fully available to the users. It will also be added to the specification that OEMs should be able to see certain information, as sent by the users.
2.2.10	Industry noted that recording speeds of 6 kHz would be required for transient events.	The TSOs have included this requirement in the business case for the high speed recorders which is being developed.
2.2.11	Industry requested for the proposed RoCoF assessment methodology to be made available.	The proposed RoCoF assessment methodology can be found under MPID 229 on the EirGrid website here.
2.2.12	The wind industry requested whether there were plans to provide dispatch instruction information to non-market participants (i.e. windfarms greater than 5% but less than 10%).	Active Power setpoints are currently published by the SEM to the SEM-O website for all market windfarms. Under the enhanced performance monitoring project we are proposing to include the Active Power setpoints for all centrally dispatchable windfarms.
2.2.13	Industry requested whether overall trends in compliance issues across the entire portfolio should be made available.	This will be included in the specification of the system

2.2.14	The Industry noted that Performance Monitoring of TSOs should also be completed	Under Condition 18 of the TSO Licence, EirGrid's performance is monitored against a set of Commission for Energy Regulation (CER) approved System Performance Criteria. The criteria were approved by the (CER) in 2007 and EirGrid reports annually on its performance against same. These Transmission System Performance Reports are published on the EirGrid website here. In addition to the annual monitoring of performance against the criteria the CER places a number of incentives on EirGrid across a range of its activities from System performance measures such as System Minutes Lost (SML) and System Frequency, to elements of Grid Delivery and management of Dispatch Balancing Costs (DBC). Note that DBC is an all island incentive on both Transmission System Operators (TSOs). EirGrid's performance against such incentives (with the exception of DBC which is the subject of separate reporting under the Single Electricity Market (SEM)) form part of the annual TSO (and Transmission Asset Owner (TAO)) Revenue Review process as carried out by the CER. Under Condition 20 of the Licence to Participate in the Transmission of Electricity, SONI's performance is monitored against a given set of criteria as approved by the Utility Regulator Northern Ireland (URegNI). On an annual basis SONI prepare a Transmission System Performance Report (TSPR) outlining its performance against the criteria. These reports are published on the SONI website here.
2.2.15	A comment was received from Industry that due to the increased cost to Industry that the TSOs should make a publicly available measurable goal relating to the increase in performance monitoring in an attempt to provide clarity and a rationale for the increased requests. They further noted that there should be transparency on the link between financial incentives, the non-provision of services and the impact on the system including how the failure to provide a particular service impacts Dispatch Balancing Costs.	The TSOs have an obligation to ensure that users of the Grid Code meet the minimum requirements set out in the Codes. Furthermore where users have a contracted requirement to provide a product, such as the Harmonised Ancillary Services, then the TSOs also monitor the delivery of this contracted value. As part of the enhanced process a business process will be developed which will assign trends, actions and timelines to non-compliance issues. The TSOs will engage with Industry during this time in developing these business processes. The Other System Charges which are currently levied on users of the Grid Code are used to offset the Imperfections Tariff. These charges were approved by the Regulatory Authorities as part of the Harmonised Ancillary Services Arrangements in 2010. The market systems carry out an unconstrained unit commitment to schedule plant in the most efficient manner. This schedule takes in unit Technical Offer Data (TOD) and Commercial Offer Data (COD). This TOD should meet the minimum requirements set out in the Grid Codes and furthermore deviation from the TOD will result in changes to Dispatch Balancing Costs.
2.2.16	Industry suggested that a MW tolerance is applied for Enhanced Performance Monitoring e.g. A 5 MW trip is less onerous to the system than a 400 MW trip.	The TSOs will consider this feedback in the design of the Enhanced Performance Monitoring business processes. Note that the TSOs do not currently discriminate against the type and size of technology, however this prioritisation of issues could incorporate this threshold.
2.2.17	Industry noted that any compliance issues should be clearly noted so that there is no ambiguity	This will be included in the specification of the system

2.2.18	Industry requested that a consultation should be carried out in relation to the requirements for high speed data recorders.	The TSOs are currently preparing an internal business case for the roll out of high speed data recorders. Further updates on this will be made at the relevant Industry Forums.

2.3. Enhanced Performance Monitoring Business Processes

NO	ISSUE RAISED	RESPONSE
2.3.1	Industry like regular meetings as part of the existing performance monitoring process and want to keep this under the enhanced process	The TSOs will include this in the Enhanced Performance Monitoring processes which will be developed in late 2013/early 2014. There will be a workshop with Industry to discuss these processes at this time.
2.3.2	The importance of using trends and prioritisation in relation to the TSOs raising performance monitoring non-compliances was raised by Industry.	This is one of the key objectives of the enhanced process as presented at the workshops. As discussed at the workshops the TSOs will hold future workshops to present the criteria for when trends become non-compliance issues, how these will be prioritised and the actions arising from these.
2.3.3	Industry requested whether the enhanced process could be utilised to reduce the scope of testing required.	This is being covered under the Enhanced Grid Code Testing workstream under DS3. As part of the published recommendations this will be clarified under the enhanced testing procedures. These recommendations can be found here.
2.3.4	Industry noted that the enhanced process should allow for the creation of two way events i.e. the generator should be able to raise issues.	The TSOs will include this in the Enhanced Performance Monitoring processes which will be developed in late 2013/early 2014. There will be a workshop with Industry to discuss these processes at this time.
2.3.5	Industry queried whether Enhanced Performance Monitoring would drive changes to Grid Code	One of the objectives of the Enhanced Performance Monitoring project is to determine whether any changes are required to the Grid Code. As an example one of the possible changes, as discussed at the workshops, was the reserve Grid Code requirements. The TSOs are looking into this and will revert with further details on the reserve design through the Joint Grid Code Review Panel meetings.

3. Next Steps

Updates on progress and any open items will be presented at the various DS3 Industry Forums and also at the Joint Grid Code Review Panel (JGCRP) meetings where relevant.

Any questions or comments should be addressed to DS3@EirGrid.com or DS3@SONI.ltd.uk.

Appendix A – SND Information Sheet

A Short Notice Declarations (SNDs) is a charge which is levied for downward declarations of MW availability at short notice.

SND Charge = MW Reduction * Rate * Notice Time Weight

Important Information:

1. The downward MW declaration must exceed 15 MW in one hour for a charge to occur;
2. The charge rate is currently €70/MW;
3. The charge is time weighted. There is no charge if more than 8 hours advanced notice is given. The maximum charge is levied if less than 5 minutes prior notice is given as displayed in Figure 1. **It is therefore important to enter in the verbal send time if declarations are agreed over the phone**;
4. The settlement systems are designed not to levy SNDs if certain reason codes are used per the published list in Table 1. Examples include scheduled outages which have been agreed in advance where the reason code 'SA' should be utilised. **If making declarations on behalf of the station please ensure the correct reason code is used per Table 1**;
5. The ultimate responsibility for ensuring that all declarations are correct is with the generating unit. EDIL has a facility to allow the generating unit to make retrospective declarations per the Station EDIL Userguide: Time limits (relative to current time): the Effective Time for a new Declaration must not be more than 4 hours in the past or 180 days in the future.

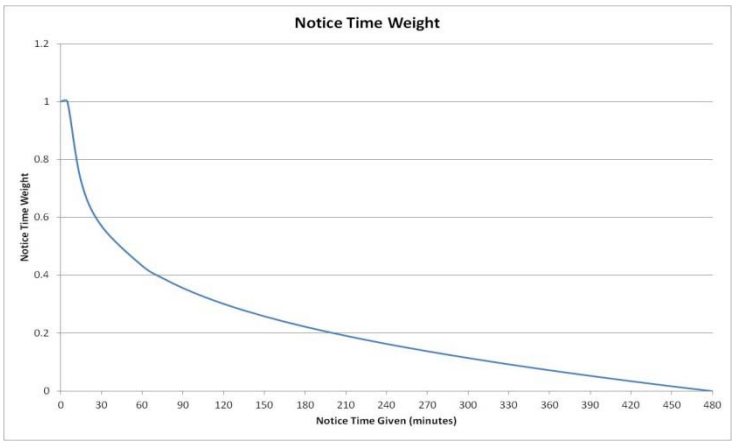

Figure 1: Notice Time Weight

Short code	Full name	SND Applicable		
		Common	SONI	EirGrid
	Frequent Reason Codes			
AM	Ambient conditions	No		
FF	Forced, external fuel reasons	Yes		
FPO	Flexible planned outage		No	N/A
FT	Forced: set trip	Yes		
FZ	Forced: any other reason	Yes		
IPO	Inflexible planned outage		No	N/A
NRA	Notice of revised availability		Yes	N/A
NUO	Notified unplanned outage		Yes	N/A
RTS	Return to service from outage		No	N/A
SA	Long term scheduled outage (COP)	No		
ST	Scheduled testing at generator's request		N/A	No
STP	Short term planned maintenance outage		No	N/A
TG	General transferable Outage (< 4 weeks notice)	No		
No	No reason	No		
	Infrequent Reason Codes			
FD	Forced: Delayed (can't go beyond 6 hrs)	Yes		
FI	Forced: manually initiated immediate shutdown	Yes		
FL	Forced: Late start associated	Yes		
FN	Forced: non plant reason	Yes		
FP	Forced: Postponed	Yes		
FW	Forced: fast wind down	Yes		
OA	Overrun on long term scheduled outage	Yes		
OS	Overrun on short term scheduled outage	Yes		
OT	Overrun on transferable scheduled outage	Yes		
SX	Long term scheduled outage (not in COP)	No		
XA	Forced: Extension of long term scheduled outage	Yes		
XS	Forced Extension of short term scheduled out	Yes		
XT	Forced: extension of transferable scheduled outage	Yes		

Table 1: Chargeable and Non-Chargeable EDIL Reason Codes