# DS3 Programme Advisory Council Status Update

## 15th May 2012

## General

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

- A DS3 Industry Forum was held on 14/03/2012 focusing on System Services and Grid Code. Over eighty people attended this event.
- Details on demonstration projects have been published to the EirGrid and SONI websites.
- Grid Code testing of Ireland's first DSU is scheduled for the end of May.
- Voltage Control discussion paper has been circulated.
- Preparation of System Services second consultation including technical analysis is progressing well.
- DS3 Joint Grid Code Working Group has been established. There have been 4 meetings of this group and some Grid Code modifications have now been proposed for the Grid Code Review Panel.

## Status

| Workstream | Commentary |
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| Communications | • EirGrid and SONI have issued a press release regarding demonstration projects. Full details are available on the EirGrid website at: http://www.eirgrid.com/operations/demonstrationprojects/<br>• Updates were made to the DS3 section of the EirGrid website. All documents from the Advisory Council meetings, Industry Forums and Joint Grid Code Working Group meetings are available on the website.<br>• A System Services Industry Forum is being planned for July.<br>• Regular meetings between the DSOs and TSOs are taking place. |
| System Services | • The System Services preliminary consultation closed on the 03/02/2012 and following this, bilateral meetings were held with consultation respondents.<br>• Preparation of the second System Services consultation is in progress. The consultation document will contain a summary of the International Review, a summary of the responses from the preliminary consultation and proposed product options. |
| RoCoF | • Some generator owners on the Island have stated that they cannot support any changes to the Grid Code in relation to higher RoCoF values until a detailed review has been performed on their plant.<br>• This review would need to cover the control, instrumentation, mechanical and electrical impacts. This is likely to require 8-10 months to complete per generator. For some generator owners with large portfolios, there is a working assumption that this process could take take longer to complete. Preliminary results might be achievable in 12-14 months if prioritization of generators for RoCoF investigation occurs.<br>• The DSOs have advised that a report in which they will provide their |

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| | position on RoCoF will be delivered in Q4 2012.<br>• SONI have received responses from almost all Northern Ireland generators regarding Loss of Mains protection settings. The majority use Vector Shift and not RoCoF protection. The impact of Vector Shift protection is being investigated.<br>• An all-island report on historical frequency events including high RoCoF events is being prepared.<br>• An EirGrid/SONI position paper has been drafted outlining the current position of all relevant parties regarding RoCoF.<br>• Based on the above, there are likely to be delays to the timelines originally published for this RoCoF workstream. |
| Grid Code | • Monthly Joint Grid Code Working Group meetings have been taking place since February. Minutes are available on the EirGrid website here: http://www.eirgrid.com/operations/ds3/industryengagement/jointgridcodeworkinggroup/<br>• Universal Wind Farm Standards were drafted and discussed at two Joint Grid Code Working Group meetings. Input was also received from wind turbine manufacturers.<br>• Modifications regarding steady-state reactive power, ramping and fault ride-through from the Universal Wind Farm Standards have been drafted and will be presented at next Ireland Grid Code Review Panel meeting.<br>• The SONI Wind Farm Settings Schedule will be used to implement the Universal Wind Farm Standards in parallel with the Ireland Grid Code modifications<br>• The first meeting of the Ireland Distribution Code Review Panel was held 22/03/2012. The Northern Ireland Distribution Code has been separated out from the Northern Ireland Grid Code. |
| DSM | • Testing of Ireland's first DSU is scheduled for the end of May. SONI currently have 1 application from a potential DSU and 1 further application from a potential AGU.<br>• A registration pack for DSUs including an all-island application form is being finalised for publication to the EirGrid and SONI websites.<br>• Demand Side Management workshops for potential DSUs/AGUs are planned for June.<br>• There are high levels of interest from customers in becoming a DSU.<br>• A review of this workstream content will be carried out in Q3 2012 based on progress to date. |
| Voltage Control | • Many aspects of this workstream are dependent on the outcomes of the Grid Code workstream and will feed into operational polices in the Control Centres.<br>• The focus at present is on voltage control standards for wind farms.<br>• A voltage control discussion paper has been drafted and circulated.<br>• There are no planned changes to dynamic reactive power provision for conventional plant. |
| Frequency Control | • Ramping, inertia and frequency regulation studies are progressing well and are on schedule.<br>• An inertia monitor has been added to the Energy Management System and a corresponding inertia policy is currently being drafted. |
| Control Centre Tools & Capability | • The Workstream plan has been published to the EirGrid website. See link: http://www.eirgrid.com/operations/ds3/ds3programmeoffice/ |
| Model Development & Studies | • A process for Generation Excitation Model validation has been prepared.<br>• Scope documents have been prepared for all studies and resources have |

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| | been assigned. |
| WSAT – Wind Security Assessment Tool | • There are a number of changes to the tasks and delivery dates in the WSAT workstream that are going through the change control process. Updated tasks and dates are shown below.<br>• The installation of WSAT in the Control Centre in Belfast is still on target for the end of September. |
| Renewable Data | • A Curtailment report has been sent to the RAs for review.<br>• All-Island Wind and Fuel Mix Reports are published to the EirGrid website monthly. http://www.eirgrid.com/operations/systemperformancedata/all-islandwindandfuelmixreport/<br>• All internal reports are being compiled and circulated on schedule.<br>• Meeting held with SEAI outlining areas for potential further co-operation. |
| Performance Monitoring & Testing | • All-island system-level Performance Monitoring statistics are published to the EirGrid and SONI websites monthly. http://www.eirgrid.com/media/AS_OSC_ReportMar2012.pdf<br>• A working group under the Joint Grid Code Review Panel will be established in May to carry out a review of the Commissioning and Testing processes. |

# DS3 List of Deliverables to September 2012

Key: Complete | Due Q2 2012 | Due Q3 2012 | Overdue

| Task no. | Workstream | Work area | Decision/Deliverable/Task | Description | Responsible | Due by | Comment |
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| DSM.1.1 | DSM | | Approval of Grid Code Modification for DSU (MOD_36_10) | To allow a DSU to have an export capability | CER | 31/12/2011 | |
| DSM.1.2 | DSM | | Northern Ireland Grid Code Modification Consultation | There is a requirement to consult for any Grid Code changes in Northern Ireland. | TSOs / RAs | 31/12/2011 | |
| DSM.1.3 | DSM | | Northern Ireland Approval of DSU Modification | To allow a DSU to have an export capability | NIAUR | 31/03/2012 | |
| DSM.1.4 | DSM | | Delivering T & SC Modification | To allow a DSU to have an export capability | SEMC | 31/03/2012 | Modification approved and effective 09/02/2012. (MOD_04_11) |
| DSM.1.5 | DSM | | System Services Consultation #1 | | TSOs / RAs | 31/12/2011 | Published |
| DSM.1.6 | DSM | | System Services Consultation #2 | | TSOs / RAs | 10/07/2012 | |
| DSM.1.8 | DSM | DSU Readiness Project | DSU Operation (ROI Pilot) | | TSOs / Industry | 30/06/2012 | Grid Code testing scheduled for the end of May |
| DSM.2.1 | DSM | Contracts & Licensing | Review of licensing arrangements for AGU | Currently there is no requirement for an AGU to have a license. In lieu of this two contracts are required one with the Regulator and the other with the System Operator | RAs | 30/06/2012 | |
| DSM.2.3 | DSM | Contracts & Licensing | Development of regulatory contract for AGU | | RAs | 30/06/2012 | SEM-08-178, SEM-08-178a, SEM-08-178b |
| DSM.2.4 | DSM | Contracts & Licensing | Decision on DSU supplier license & tie in with Bidding Code of Practice | To facilitate the operation of DSUs in the SEM the CER is proposing a new condition to introduce an obligation on any Demand Side Unit to comply with the Bidding Code of Practice | RAs | 31/12/2011 | CER/12/018 This obligation for a Demand Side Unit to comply with the Bidding Code of Practice is not in place in Northern Ireland. |
| DSM.3.3 | DSM | | Investigate metering mechanisms for AGU | | TSOs | 31/03/2012 | Draft document has been produced |
| DSM.3.4 | DSM | DSU Readiness Project | Develop Grid Code testing procedures for AGU/DSU | | TSOs | 31/03/2012 | Dependent on customer schedule. Due to be completed by the end of May |
| DSM.3.5 | DSM | DSU Readiness Project | Development of process for performance validation for DSU | | TSOs | 30/06/2012 | |
| 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 | |
| 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 | |
| FC.2.3 | Frequency Control | | Derive a working all-island system model of the Power System | | TSOs | 30/06/2012 | |
| FC.4.1 | Frequency Control | Operational Policy: Frequency Regulation | Study the frequency regulation issue / historical data / likely issues | Volume of regulating capability required with changing portfolio of plant and increased wind generation | TSOs | 30/06/2012 | |
| FC.4.2 | Frequency Control | Operational Policy: Frequency Regulation | Look at long-term System Services implications for frequency regulation provision | | TSOs | 30/06/2012 | |

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| 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 | |
| FC.5.2 | Frequency Control | Operational Policy: Ramping Services | Look at long-term System Services for ramping services provision | | TSOs | 30/06/2012 | |
| 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 | |
| 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 | Covered in Universal Wind Farm Standards |
| 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 | |
| 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 | Covered in Universal Wind Farm Standards |
| 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 | Covered in Universal Wind Farm Standards |
| 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 | |
| GC.02.05 | Grid Code | Dynamic Active and Reactive Power Response – Wind farms and Conventional Plant | Engagement with stakeholders | Accommodated through Joint Grid Code Working Group | TSOs | 30/06/2012 | |
| 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 | |
| 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 | Investigation complete. Awaiting industry feedback. |
| GC.03.3 | Grid Code | Rate of Change of Frequency Ride-Through Ability | Present proposal to DS3 Advisory Council | | TSOs | 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 | Members selected and ToR circulated |
| GC.03.5 | Grid Code | Rate of Change of Frequency Ride-Through Ability | Discuss RoCoF with industry / stakeholders and agree a common position | Accommodated through Joint Grid Code Working Group | RoCoF WG | 30/06/2012 | |
| GC.04.1 | Grid Code | Waste-to-Energy | Draft internal discussion document on different approaches | | TSOs | 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 | |
| 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 | Not to be pursued |
| GC.05.1 | Grid Code | Dynamic Model Requirements | Look at international requirements (UK/US/Australia/Europe etc.) on dynamic models | | TSOs | 31/03/2012 | |
| GC.05.2 | Grid Code | Dynamic Model Requirements | Review current requirements and collate ideas | | TSOs | 30/06/2012 | |
| GC.06.1 | Grid Code | Demand-side Management | Bring modifications on Demand-side unit MEC to Grid Code Review Panel | | TSOs | 31/12/2011 | |
| GC.08.1 | Grid Code | Negative Reserve | Carry out a review of international best practice on negative reserve | | TSOs | 30/06/2012 | |
| MDV.1.1 | Model Development and Studies | Model Development and Validation | Develop all-island model for PSS/E / WSAT | | TSOs | 30/06/2012 | |

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| MDV.1.2 | Model Development and Studies | Model Development and Validation | Develop process for Generation Excitation Model validation | | TSOs | 30/06/2012 | |
| MDV.2.1 | Model Development and Studies | System Studies | Frequency Response following a large disturbance | | TSOs | 30/06/2012 | |
| MDV.2.2 | Model Development and Studies | System Studies | Loss of Largest In-feed Study | Study that investigates the implications of increasing the largest infeed on the power system | TSOs | 31/03/2012 | Study Complete. |
| MDV.2.3 | Model Development and Studies | System Studies | Frequency Regulation Study | Investigation of frequency regulation requirements and changes due to variability of wind | TSOs | 30/06/2012 | |
| MDV.2.4 | Model Development and Studies | System Studies | Study of Ramping Requirements | Investigation of ramping requirements and changes due to variability of wind | TSOs | 30/06/2012 | |
| 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 | |
| PMT.2.1 | Performance Monitoring and Testing | All-Island Performance Monitoring Reporting | Publish all-island monthly system level Performance Monitoring statistics | | TSOs | 31/12/2011 | |
| 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 | |
| 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 | |
| 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 | |
| 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 | |
| PMT.4.3 | Performance Monitoring and Testing | Feedback of Performance Monitoring results into Operational Policy | Operational Policy Review | | TSOs | 31/05/2012 | |
| PMT.4.4 | Performance Monitoring and Testing | Feedback of Performance Monitoring results into Operational Policy | Enhanced System Portfolio Performance Monitoring capability aggregated | | TSOs | 31/05/2012 | |
| PMT.5.1 | Performance Monitoring and Testing | Standardised and documented All-Island testing process | Industry review of Commissioning and Testing process by working group to Joint Grid Code Review Panel (JGCRP) | | TSOs | 30/06/2012 | |
| PMT.5.2 | Performance Monitoring and Testing | Standardised and documented All-Island testing process | Documented All-Island commissioning testing procedures for generating units and identification where harmonisation not possible | | TSOs | 31/08/2012 | |
| 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 | |
| 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 | Entry in Grid Code required |
| 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 | To Be Covered by Grid Code Working Group |
| RCF.1.04 | RoCoF | Setting appropriate RoCoF standards on all generators | Establish DS3 Grid Code Working Group | | TSOs / Industry | 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 | |

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| RCF.2.01 | RoCoF | Ensuring appropriate RoCoF on distribution protection | Kick-off and scope TSO-DSO RoCoF working groups | | TSOs / DSOs | 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 |
| 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 |
| SS.01 | System Services | | Project establishment | | TSOs | 31/10/2011 |
| SS.02 | System Services | | Publish International System Services Review report | | TSOs | 20/01/2012 |
| SS.03 | System Services | | Studies and Analysis | | TSOs | 15/08/2012 |
| SS.04 | System Services | | System Services Consultation #1 | | TSOs | 31/01/2012 |
| SS.05 | System Services | | Bilateral Meetings on System Services consultation | TSO will offer opportunity of bilateral meetings to stakeholders to discuss System Services | TSOs | 29/02/2012 |
| SS.06 | System Services | | Industry workshop | | TSOs | 15/03/2012 |
| SS.07 | System Services | | Review of Harmonised Ancillary Services and Generator Performance Incentives since introduction | | TSOs | 29/02/2012 |
| SS.08 | System Services | | Development of system services product options | | TSOs | 15/05/2012 |
| SS.09 | System Services | | System Services Consultation #2 | | TSOs | 31/05/2012 |
| SS.10 | System Services | | Development of final proposals | | TSOs | 31/08/2012 |
| 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 |
| VC.03 | Voltage Control | | Grid Code and Distribution code changes brought to industry for discussion | Accommodated through Joint Grid Code Working Group | TSOs / DSOs / All | 30/06/2012 |
| VC.04 | Voltage Control | | Decision: Steady-state Reactive Power Control for embedded conventional plant | | TSOs / DSOs | 30/06/2012 |
| 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 |
| WSAT.1.2 | WSAT | All-Island EMS Snapshot | Developing interface between WSAT and new EMS | | TSOs | 31/10/2011 |
| WSAT.1.3 | WSAT | All-Island EMS Snapshot | Comparison of all-island power flow against state estimator | | TSOs | 30/11/2011 |
| WSAT.1.4 | WSAT | All-Island EMS Snapshot | Final approval of functioning new snapshots in WSAT | | TSOs | 15/06/2012 |
| WSAT.1.5 | WSAT | All-Island EMS Snapshot | Installation of redundant server | | TSOs | 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 |
| 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 |
| WSAT.2.3 | WSAT | Merging SONI model and all-island wind forecast data into WSAT | All-Island Wind Forecast streaming to WSAT | | TSOs | 30/06/2012 |
| WSAT.2.4 | WSAT | Merging SONI model and all-island wind forecast data into WSAT | Implement All-Island system WSAT in the pre-prod and NCC server | | TSOs | 15/09/2012 |
| WSAT.3.1 | WSAT | Validation and tuning on-line all-island TSAT dynamic models | Dynamic model validation against PSS/e | | TSOs | 31/07/2012 |

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| WSAT.4.1 | WSAT | Implementation WSAT in CHCC | Install WSAT pre-prod monitor at near-time section in SONI | TSOs | 15/09/2012 | Test monitor installed. |
| WSAT.4.2 | WSAT | Implementation WSAT in CHCC | Install WSAT NCC monitor in CHCC | TSOs | 30/06/2012 | |
| WSAT.4.3 | WSAT | Implementation WSAT in CHCC | Run WSAT pre-prod in test mode, correct errors | TSOs | 30/09/2012 | |
| WSAT.4.4 | WSAT | Implementation WSAT in CHCC | Establish if WSAT is performing as per SONI acceptance criteria | TSOs | 31/08/2012 | |
| WSAT.4.5 | WSAT | Implementation WSAT in CHCC | Install All-island WSAT at NCC server and launch monitor in CHCC | TSOs | 30/09/2012 | |