



# DS3: Control Centre Tools & Capabilities Workstream

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## 2013 Update

## **BACKGROUND**

The output of this workstream is to ensure the timely provision of Control Centre tools and capability that will be required to operate the power system in line with the growth of renewable generation on the power system. The tools available to the operators in both the Control Centres on the island of Ireland need to be updated and in some cases, new tools need to be developed to allow new operational policies to be implemented. It is important to note that the future requirements for the Control Centres are not yet fully defined and will continue to evolve.

## **APPROACH**

Work has already begun on many areas associated with this workstream e.g. Wind Dispatch Tool, the creation of the all-island study environment and new features within the Energy Management System (EMS). This workstream will build on existing work and initiate work in other areas where required. In addition, the anticipated Control Centre environment with the expected level of renewable generation will be examined to ensure consideration of any other requirements; which may not be generated by other work streams. It should be noted that this workstream document contains only a subset of the development work that is ongoing in the Control Centres in Dublin and Belfast - it contains those items which are relevant for the DS3 programme.

## **KEY WORK AREAS**

### **Energy Management System (EMS)**

A major upgrade of the EMS is due to be completed by the end of Q1 2015. The EMS Integration Project (EIP) is outside the scope of the DS3 programme - it is a separate project that is being undertaken by the EirGrid Group, but will facilitate the DS3 programme.

### **Wind Dispatch**

The publication of the SEM Decision paper on the "Treatment of Price Taking Generation in Tie-Breaks in Dispatch in the SEM and Associated Issues" (SEM-11-105) means that substantial changes are required in terms of the functionality of the Wind Dispatch Tool used in the control centres. Following publication of SEM 13-010 on 1<sup>st</sup> March 2013; it is envisaged that the new wind dispatch tool will be operational in Q2 2014. The new tool will be installed in both the EirGrid National Control Centre (NCC) in Dublin and the SONI Castlereagh House Control Centre (CHCC) in Belfast.

### **Operational Policies/Tools**

There are eleven workstreams within the DS3 programme and within each of these there are tasks which will impact on the operational policies and/or tools in the Control Centres (e.g. Grid Code changes). In some cases, changes in operational policy will need to be implemented, resulting in the requirement for new tools, updates to the EMS, Reserve Constrained Unit Commitment (RCUC) tool or by other means in the Control Centres.

### **TSO/DSO Interactions**

As part of the DS3 programme, significant work is underway to review the voltage standards for Wind Farm Power Stations and embedded plant in conjunction with the DSOs. In addition, the

RoCoF relays used for islanding protection on the distribution network are being evaluated in the context of their impact on frequency management on the synchronous power system. The results from this work may result in changes in the tools required in the Control Centres.

### **Wind Forecasting**

A number of initiatives are being carried out to improve the accuracy of the current wind forecasting system and these initiatives have been grouped together to form one project. This project is well underway and key elements include implementing a vendor performance incentive scheme by which forecast suppliers are rewarded for delivering a forecast that is within a pre-determined accuracy benchmark.

The tool itself will also be upgraded with new features added; including individual wind farm forecasts and short term forecast optimisation based on live SCADA MW data being delivered to the vendors. Finally in addition to the SCADA MW feed, other SCADA signals like wind speed, direction, air temperature/pressure, wind dispatch, high speed shutdown and wind farm availability are being delivered to our forecast suppliers which will result in improved modelling of the wind farms on our system and improved forecasts presented to control centre engineers.

The project will also deliver enhancements to the graphical user interface used by the operators in the Control Centres to inform dispatch decisions. Such enhancements include all-island forecasts, forecast confidence interval display and regional forecasts. This project is a joint project between SONI and EirGrid and the application is common to both jurisdictions.

## **APPENDIX 1 – HIGH-LEVEL PROJECT PLAN**

<b>TASK NO.</b>	<b>TASK / DELIVERABLE</b>	<b>DS3 WORKSTREAM DEPENDENCIES</b>	<b>RESPONSIBLE</b>	<b>ORIGINAL DUE DATE</b>	<b>DUE DATE</b>
<b>Wind Dispatch Tool</b>					
CCTC.1	Drafting business rules for wind dispatch into business requirement specification (BRS) (SEM -11-105)				COMPLETE
CCTC.2	Costs and timelines for implementation of BRS (SEM -11-105)				COMPLETE
CCTC.3	Implementation of new EMS wind dispatch tool to comply with SEM 13-010				Q2 2014
<b>EMS</b>					
CCTC.4	Implementation of online short circuit analysis tool in Dublin Control Centre		TSOs	31/05/2013	Q2 2013
CCTC.5	Inclusion of an Inertia Monitoring Capability in Control Centres				COMPLETE
CCTC.6	Scoping of EMS integration project		TSOs	Q3 2012	COMPLETE
CCTC.7	EMS Integration Project*			New Task	Q1 2015
<b>Operation Policy Updates</b>					
CCTC.8	Implementation of operational policy updates arising from DS3 programme into Control Centre tools		TSOs	As Required	As Required
<b>TSO/DSO Voltage Control Mechanisms</b>					
CCTC.9	Implementation of any agreed changes in voltage control arising out of TSO/DSO interactions		TSOs	As Required	As Required
<b>Wind Forecasting</b>					
CCTC.10	Implementation of incentives for forecasting accuracy of service providers		TSOs	Q1 2013	Q3 2013
CCTC.11	Implementation of regional forecasting		TSOs	Q1 2013	Q1 2014
CCTC.12	Sending live wind farm signals to wind forecast service providers to improve modelling		TSOs	Q1 2013	COMPLETE

\* The EMS Integration Project is outside the scope of the DS3 programme, it is a separate project that is being undertaken by EirGrid Group.