



DS3: Control Centre Tools & Capabilities Workstream

BACKGROUND

In line with the growth of renewable generation on the power system, the tools available to the operators in the Control Centres need to be updated and in some cases, new tools need to be developed.

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 EMS. This workstream will build on existing work and initiate work in other areas where required. 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

EMS

A major upgrade of the EMS is due to be completed by the end of 2014. 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. In advance of this upgrade, a detailed scope will have to be prepared, however it is important that any significant functionality changes that are required in terms of the DS3 programme are incorporated into the scope of EIP.

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 available for use in the Control Centres. On the 29th March 2012, the SEM Committee decided to withdraw its decision to treat curtailment issues in a tie-break situation on a firm access quantity basis (as set out in Section 3.5 of the SEM-11-105) and published a further consultation paper on the 26th April 2012 (SEM-12-028). The outcome of this may impact on the timelines associated with implementing modifications to the Wind Dispatch Tool in the Dublin Control Centre and implementation of a new Wind Dispatch Tool in the Belfast Control Centre.

Operational Policy Updates

There are eleven workstreams within the DS3 programme; within each of these there are tasks which will impact on the operational policies in the Control Centres. In some cases, changes in operational policy will need to be implemented in the form of new tools, updates to the EMS 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, these initiatives have been grouped together to form one project. The scope of work to deliver this project has been completed and the initiatives include implementing a vendor performance incentive scheme in which our forecast suppliers get 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 regional 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 temp/pressure, wind dispatch, high wind speed shutdown and availability will also be delivered to our forecast suppliers which will result in improved modelling of the wind farms on our system and improved forecasts seen in our control room.

APPENDIX 1 – HIGH-LEVEL PROJECT PLAN

Task	Timeline
All-Island Operations	
1. Development of all-island demand forecasts	TBD
2. Development of all-island EMS screens	Q4 2014
<i>Note: Some of the more critical elements (such as generation overview and reserve calculations) have already been delivered.</i>	
Wind Dispatch Tool	
<i>Note: the work that has been carried out associated with Wind Dispatch Tools is based on implementation 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), timelines may change following a new SEM Decision paper.</i>	
3. Drafting business rules for wind dispatch into business requirement specification (BRS) (SEM-11-105)	Done
4. Costs and timelines for implementation of BRS (SEM-11-105)	Done
5. Implementation of modifications to Dublin Control Centre tool and commission new Belfast Control Centre tool (SEM-11-105)	Dependent on outcome of SEM consultation (SEM-12-028)
EMS	
6. Implementation of online short circuit analysis tool in Dublin Control Centre	Q2 2013
7. Inclusion of Inertia Monitoring Capability in Control Centres	Done
8. Scoping of EMS Integration Project	Q3 2012
9. EMS Integration Project *	Q4 2014
Operational Policy Updates	
10. Implementation of agreed operational policy updates arising from the DS3 programme into Control Centre tools	As required
TSO/DSO Voltage Control Mechanisms	
11. Implementation of any agreed changes in voltage control arising out of TSO/DSO interactions	As required
Wind Forecasting	
12. Implementation of incentives for forecasting accuracy of service providers	Q1 2013
13. Implementation of regional forecasting	Q1 2013
14. Investigation of the potential of sending live wind farm signals to wind forecast service providers	Q1 2013

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