DISTRIBUTION CODE MODIFICATION PROPOSAL FORM

Modification Proposal submitted By: David Cashman	**DATE OF SUBMISSION OF PROPOSAL:** 09/06/2015	**Modification Proposal Number:** *(to be assigned by Review Panel Secretary)* **# 37**

CONTACT DETAILS FOR MODIFICATION PROPOSAL ORIGINATOR: (IF NOT DISTRIBUTION CODE REVIEW PANEL	
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MODIFICATION PROPOSAL TITLE:	Transition of voltage control modes for wind farms

DISTRIBUTION CODE SECTION(S) AFFECTED BY PROPOSAL
DCC11.5.2.3 Voltage Control

MODIFICATION PROPOSAL DESCRIPTION *(Clearly state the desired amendment and all text changes. Attach further information if necessary)*

DCC11.5.2.3 Voltage Control

For **DSO** type A **Controllable WFPS's** irrespective of **Registered Capacity** and **DSO** type B **Controllable WFPS's** with **Registered Capacity** ≥5**MW**, under steady state conditions, the **Voltage Regulation System** shall be capable of implementing the following **Reactive Power** control modes which shall be available to the **DSO** or **TSO** as agreed by **DSO** and **TSO**:

a) The **Controllable WFPS** shall be capable of receiving a power factor control (PF) set-point to maintain the power factor set-point at the **Connection Point**;

b) The **Controllable WFPS** shall be capable of receiving a **Reactive Power Control** (Q) set-point to maintain the **Reactive Power** set-point at the **Connection Point**;

c) The **Controllable WFPS** shall be capable of receiving a **Voltage Regulation** (kV) set-point for the voltage at the **Connection Point**. The **Voltage Regulation System** shall act to regulate the voltage at this point by continuous modulation of the **Controllable WFPS's Reactive Power** output, without violating the voltage Step Emissions limits as set out in the **IEC** standard 61000-3-7:1996 Assessment of Emission limits for fluctuating loads in **MV** and **HV** power systems.

d) A change to the power factor control (PF) set-point**, Reactive Power** control (Q) set-point or **Voltage Regulation** (kV) set-point shall be implemented by the **Controllable WFPS** within 20 seconds of receipt of the appropriate signal, within its **Reactive Power** capability range as specified in **DCC**11.4.5

e) One **Reactive Power** Control mode shall be operational at all times with the facility to toggle between each of the **Reactive Power** control modes as instructed by the **DSO** or **TSO** as agreed by the **DSO** and **TSO**. Toggling between **Reactive Power** controllers shall be smooth in transfer i.e. the **Controllable WFPS** shall calculate and implement an appropriate set-point when transferring to the new control mode. The set-point calculated for the new control mode shall be consistent with the Mvar output at that time.

MODIFICATION PROPOSAL JUSTIFICATION *(Clearly state the reason for the modification. Attach further information if necessary)*

The smooth transition between voltage control modes is an important aspect in managing system voltage. This modification aims to clarify the requirement on wind farms to appropriately transition between the three voltage control modes. This modification aims to align with the recent modification (MPID 250) passed at Grid Code for transmission connected wind farms.

IMPLICATIONS OF NOT IMPLEMENTING THIS MODIFICATION

Without this requirement implemented there will be reduced capability in the windfarm voltage controllers which may have adverse impacts for customers of both the transmission and distribution systems. Large transitions in system voltage could occur if smooth transitions are not implemented by windfarms.

PLEASE SUBMIT MODIFICATION PROPOSALS TO THE PANEL SECRETARY BY E-MAIL TO: DISTCODEPANEL@MAIL.ESB.IE