

MODIFICATION RECOMMENDATION FORM



RECOMMENDATION TO CER BY EIRGRID OF MODIFICATION TO GRID CODE.

ABSTRACT / TITLE OF MODIFICATION	Voltage Regulation System for Windfarms
MODIFICATION NUMBER	212
RECOMMENDED AT GCRP MEETING NUMBER	28
LIST OF GRID CODE SECTION(S) AFFECTED BY PROPOSED MODIFICATION:	WFPS1.6.2.2
CURRENT GRID CODE VERSION :	3.5
<p>MODIFICATION DESCRIPTION Overview</p> <p>SUMMARY DESCRIPTION OF:</p> <p>a) THE REASON FOR THE RECOMMENDED MODIFICATION</p> <p>b) HISTORY OF PROGRESSION THROUGH GCRPs, WORKING GROUP AND/OR CONSULTATION</p> <p>c) SUMMARY NOTE OF ANY OBJECTIONS TO THE RECOMMENDED CHANGE FROM GCRP MEMBERS OR CONSULTATION RESPONSES</p> <p>d) OUTCOME OF ANY GCRP MEETING ACTIONS RELATING TO THE RECOMMENDED MODIFICATION</p>	<p><u>The Reason for the Recommended Modification</u></p> <p>This modification provides for the introduction of two additional control modes from Controllable WFPS i.e. 'Q-Mode' or Reactive Power / Mvar Instruction & Power Factor control modes. This is in addition to the Voltage Control (kV) mode. These additional control modes will provide increased operational flexibility to EirGrid for increasing number of Controllable WFPS on the Power System.</p> <p>This will require software and control calculation reconfiguration which will have relatively minimum impact to newly connecting Controllable WFPS.</p> <p><u>History of Progression through GCRPs, Working Group and/or Consultation</u></p> <p>The modification was first presented at the GCRP meeting #27, 23 February 2011. The principle of the modification was approved by the GCRP members but members requested more time to consider the wording of the proposed modification. After the GCRP meeting Karl O'Keeffe (EirGrid), Jane McArdle (Renewable Generators) and Yazhou Lei (Renewable Generators) discussed the modification and agreed on a new wording for the proposal. The new proposal was presented at GCRP meeting #28, 8th June 2011 and approved by the panel members.</p> <p>Derek Hynes (DSO Representative) stated that the DSO intends to include a similar clause in the Distribution Code.</p> <p><u>Summary Note of any Objections to the Recommended Change from GCRP Members or Consultation Responses</u></p> <p>Jane McArdle (Renewable Generators) voiced her concern regarding retrospection and how it is difficult to quantify the cost to the developer until the new practise is in place.</p> <p><u>Outcome of any GCRP Meeting Actions relating to the Recommended Modification</u></p> <p>EirGrid and the representatives of Renewable Generators worked together in drafting the final proposal presented at the GCRP meeting #28.</p>

	<p>Recommended Modification Proposal</p> <p>The following is the proposed changes to the Grid Code as recommended by the GCRP members. Any proposed text is highlighted in blue and any deleted text is highlighted in red strike-through.</p> <p>WFPS1.6.2.2 The Voltage Regulation System shall be capable of receiving a Voltage Regulation 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, within its Reactive Power range and 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. A change to the Voltage Regulation Set-point shall be implemented by the Controllable WFPS within 20 seconds of receipt of the appropriate signal from the TSO.</p> <p>WFPS1.6.2.2 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 TSO:</p> <ul style="list-style-type: none"> (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 <i>Assessment of Emission limits for fluctuating loads in MV and HV power systems</i>. <p>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 from the TSO, within its reactive power capability range as specified in WFPS1.6.3.</p>
<p>IMPLICATION OF NOT IMPLEMENTING THE MODIFICATION</p>	<p>If not implemented this will restrict EirGrid's operational flexibility for the increasing number of Controllable WFPS on the Power System. Increased flexibility is of critical importance for a system such as ours with targets to produce 40% of energy from renewable resources by 2020.</p>