

MODIFICATION RECOMMENDATION FORM

*RECOMMENDATION TO CER BY EIRGRID OF MODIFICATION TO GRID
CODE.*



ABSTRACT / TITLE OF MODIFICATION	Dwell Times and Dwell Time Trigger Points for Generators when Ramping Up or Ramping Down
MODIFICATION NUMBER	MPID 207
RECOMMENDED AT GCRP MEETING NUMBER	JGCRP #7 (GCRP #27)
LIST OF GRID CODE SECTION(S) AFFECTED BY PROPOSED MODIFICATION:	SDC1 – Appendix A Definitions
CURRENT GRID CODE VERSION :	Version 3.5

<ul style="list-style-type: none"> • MODIFICATION DESCRIPTION Overview • SUMMARY DESCRIPTION OF: • THE REASON FOR THE RECOMMENDED MODIFICATION • HISTORY OF PROGRESSION THROUGH GCRPs, WORKING GROUP AND/OR CONSULTATION • SUMMARY NOTE OF ANY OBJECTIONS TO THE RECOMMENDED CHANGE FROM GCRP MEMBERS OR CONSULTATION RESPONSES • OUTCOME OF ANY GCRP MEETING ACTIONS RELATING TO THE RECOMMENDED MODIFICATION 	<p style="text-align: center;"><u>THE REASON FOR THE RECOMMENDED MODIFICATION</u></p> <p>At present generators submit as part of their Technical Offer Data up to 5 Ramp Up Rates, 5 Ramp Down Rates, 4 Ramp Up Break Points, 4 Ramp Down Break Points, 3 Dwell Times and 3 Dwell Time Trigger Points. There is no differentiation between Dwell Times and Dwell Time Trigger Points for generators when ramping up or ramping down.</p> <p>The lack of differentiation between a Dwell Time Up / Dwell Time Down and Dwell Time Up Trigger Point / Dwell Time Down Trigger Point limits the ability of the generators to accurately reflect the characteristics of their plants as currently dwells are required both on the way up and down, and currently plant require a dwell on either ramp up or down but not both. This has lead to dwell times not being used and very slow ramp rates used instead. Thus a plant which required 2 dwells and two ramp rates could need up to 6 ramps to adequately describe the plant.</p> <p>The changes suggested involve amendments to Part 1 (Technical Parameters) of Appendix A of SDC1 and corresponding amendments to the Glossary and Definitions section of the Grid Code. These amendments will lead to:</p> <ul style="list-style-type: none"> • improved dispatch, as the changes will ensure that dispatch is more accurate; and • a reduction in UIs for plants, as they will be following more accurate curves by being able to use ramp rates efficiently.
--	--

	<p><u>HISTORY OF PROGRESSION THROUGH GCRPS, WORKING GROUP AND/OR CONSULTATION</u></p> <p>This proposed modification was raised by ESB Power Generation at the Trading and Settlement Code Modifications Committee. On 25 November 2010 this modification (MOD_40_10) was presented at the Modifications Committee (Meeting 32). It was agreed at the meeting to defer the proposal pending results of an Impact Assessment and investigation into the impacts on the Grid Code. The proposed modification was presented at the Joint Grid Code Review Panel (JGCRP) meeting 23 February 2011. No comments or objections were raised; the Panel Members approved the proposed changes, subject to the normal regulatory approval process.</p> <p>SONI, in accordance with the requirements of its Licence, must consult on any proposed changes to their Grid Code. SONI consulted on the proposals for the Dwell Time amendments from 22nd April 2011 to 20th May 2011.</p> <p>One written representation was received by SONI, from SSE Renewables. A copy of this representation together with SONI's response can be found as part of SONI's Report to the Northern Ireland Authority for Utility Regulation (report attached to this email). The representation from SSE Renewables had no impact on the proposed modification.</p> <p>It is important to note that the timing for the approval of these changes should be coordinated by the CER with UregNI, as the same changes will need to be approved by UregNI for the SONI Grid Code as they cover common sections of both Grid Codes.</p>
	<p><u>SUMMARY NOTE OF ANY OBJECTIONS TO THE RECOMMENDED CHANGE FROM GCRP MEMBERS OR CONSULTATION RESPONSES</u></p> <p>There being no comments or objections, the Panel Members approved the proposed changes, subject to the normal regulatory approval process.</p>
	<p><u>OUTCOME OF ANY GCRP MEETING ACTIONS RELATING TO THE RECOMMENDED MODIFICATION</u></p> <p>An action was assigned to the TSOs to recommend the proposal to the Regulators.</p>

MODIFICATIONS TO THE GRID CODE**SDC1 – Appendix A**

Several Technical Parameters in Appendix A to SDC1 have been amended or inserted in order to differentiate between Dwell Times and Dwell Time Trigger Points when ramping up and down. These Technical Parameters apply to all types of CDGU (Thermal Plant, Hydro Units, Energy Limited Generating Units, Dispatchable WFPS and Pumped Storage Generation) as well as Controllable WFPS, and are as follows:

- Dwell Time 1, Dwell Time 2 and Dwell Time 3 have been amended to read Dwell Time Up 1, Dwell Time Up 2, and Dwell Time Up 3.
- Dwell Time Down 1, Dwell Time Down 2 and Dwell Time Down 3 have been inserted.
- Dwell Time Trigger Point 1, Dwell Time Trigger Point 2 and Dwell Time Trigger Point 3 have been amended to read Dwell Time Up Trigger Point 1, Dwell Time Up Trigger Point 2 and Dwell Time Up Trigger Point 3.
- Dwell Time Down Trigger Point 1, Dwell Time Down Trigger Point 2 and Dwell Time Down Trigger Point 3 have been inserted.

Glossary and Definitions

The proposed changes to the Glossary and Definitions section are as follows:

- **Dwell Time Down:** this new definition has been inserted in order to refer specifically to a plant's Dwell Time when ramping down.
- **Dwell Time Down Trigger Point:** this new definition has been inserted in order to refer specifically to a plant's Dwell Time Trigger Point when ramping down.
- **Dwell Time Up:** the previous definition of Dwell Time has been amended in order to refer specifically to a plant's Dwell Time when ramping up.
- **Dwell Time Up Trigger Point:** the previous definition of Dwell Time Trigger Point has been amended in order to refer specifically to a plant's Dwell Time Trigger Point when ramping up.

<p>IMPLICATION OF NOT IMPLEMENTING THE MODIFICATION</p>	<p>Without this modification, generators will continue to be severely impacted in their ability to submit technical offer data, which means that most generators will be forced to use a very slow ramp to describe a dwell and thus be forced into having less flexible ramps rates.</p>
--	---

Appendix A

Modifications to Grid Code Version 3.5

New text is highlighted in blue and any text to be removed is highlighted in red strike-through.

SDC1 – APPENDIX A

Part 1. Technical Parameters

[Note: The factors applicable to CDGUs below 10 MW apply to the EirGrid Grid Code only.]

Technical Parameter	CDGU				Contr ol WFPS	DSU		Ag g. Ge n	CDG U <10 MW	Pum p Stor ag Dem and
	Therma l	Hydr / En Ltd	Disp. WFP S	Pum p S Gen	-	Individu al Deman d Site	Aggreg ated Deman d Sites		-	-
Block Load Cold	✓	✓	✓	✓	✓				✓	
Block Load Hot	✓								✓	
Block Load Warm	✓								✓	
Demand Profile						✓	✓			
Deload Break Point	✓	✓	✓	✓	✓				✓	
De-Loading Rate 1	✓	✓	✓	✓	✓				✓	
De-Loading Rate 2	✓	✓	✓	✓	✓				✓	
Dwell Time Up 1	✓	✓	✓	✓	✓				✓	
Dwell Time Up 2	✓	✓	✓	✓	✓				✓	
Dwell Time Up 3	✓	✓	✓	✓	✓				✓	
Dwell Time Down 1	✓	✓	✓	✓	✓				✓	
Dwell Time Down 2	✓	✓	✓	✓	✓				✓	
Dwell Time Down 3	✓	✓	✓	✓	✓				✓	
Dwell Time Up Trigger	✓	✓	✓	✓	✓				✓	

Technical Parameter	CDGU				Contr ol WFPS	DSU		Ag g. Ge n	CDG U <10 MW	Pum p Stor ag Dem and
	Therma l	Hydr / En Ltd	Disp. WFP S	Pum p S Gen		Individu al Deman d Site	Aggreg ated Deman d Sites			
Warm (2)										
Loading Rate Cold (1)	✓	✓	✓	✓	✓				✓	
Loading Rate Cold (2)	✓	✓	✓	✓	✓				✓	
Loading Rate Cold (3)	✓	✓	✓	✓	✓				✓	
Loading Rate Hot (1)	✓								✓	
Loading Rate Hot (2)	✓								✓	
Loading Rate Hot (3)	✓								✓	
Loading Rate Warm (1)	✓								✓	
Loading Rate Warm (2)	✓								✓	
Loading Rate Warm (3)	✓								✓	
Max Ramp Down Rate (shall be a number greater than zero)						✓	✓			
Max Ramp Up Rate (shall be a number greater than zero)						✓	✓			
Maximum Down Time						✓	✓			
Maximum Generation / Registered Capacity	✓	✓	✓	✓	✓				✓	
Maximum On Time	✓	✓	✓	✓	✓				✓	
Maximum Storage Capacity				✓						
Minimum Down Time						✓	✓			
Minimum Generation	✓	✓	✓	✓	✓				✓	
Minimum off time	✓	✓	✓	✓	✓				✓	
Minimum on time	✓	✓	✓	✓	✓				✓	
Minimum Storage Capacity				✓						✓✓
(Other relevant technical parameters)	✓	✓	✓	✓	✓			✓	✓	
Pumping capacity				✓						✓
Ramp Down Break Point 1	✓	✓	✓	✓	✓			✓	✓	
Ramp Down Break	✓	✓	✓	✓	✓			✓	✓	

Technical Parameter	CDGU				Contr ol WFPS	DSU		Ag g. Ge n	CDG U <10 MW	Pum p Stor ag Dem and
	Therma l	Hydr / En Ltd	Disp. WFP S	Pum p S Gen		Individu al Deman d Site	Aggreg ated Deman d Sites			
Point 2										
Ramp Down Break Point 3	✓	✓	✓	✓	✓			✓	✓	
Ramp Down Break Point 4	✓	✓	✓	✓	✓			✓	✓	
Ramp Down Rate 1	✓	✓	✓	✓	✓			✓	✓	
Ramp Down Rate 2	✓	✓	✓	✓	✓			✓	✓	
Ramp Down Rate 3		✓	✓	✓	✓			✓		
Ramp Down Rate 4	✓	✓	✓	✓	✓			✓	✓	
Ramp Down Rate 5	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Break Point 1	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Break Point 2	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Break Point 3	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Break Point 4	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Rate 1	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Rate 2	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Rate 3	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Rate 4	✓	✓	✓	✓	✓			✓	✓	
Ramp Up Rate 5	✓	✓	✓	✓	✓			✓	✓	
Short Term Maximisation Capability	✓	✓	✓	✓	✓				✓	
Soak Time Cold (1)	✓	✓	✓	✓	✓				✓	
Soak Time Cold (2)	✓	✓	✓	✓	✓				✓	
Soak Time Hot (1)	✓								✓	
Soak Time Hot (2)	✓								✓	
Soak Time Trigger Point Cold (1)	✓	✓	✓	✓	✓				✓	
Soak Time Trigger Point Cold (2)	✓	✓	✓	✓	✓				✓	

Technical Parameter	CDGU				Contr ol WFPS	DSU		Ag g. Ge n	CDG U <10 MW	Pum p Stor ag Dem and
	Therma l	Hydr / En Ltd	Disp. WFP S	Pum p S Gen		Individu al Deman d Site	Aggreg ated Deman d Sites			
					-				-	-
Soak Time Trigger Point Hot (1)	✓								✓	
Soak Time Trigger Point Hot (2)	✓								✓	
Soak Time Trigger Point Warm (1)	✓								✓	
Soak Time Trigger Point Warm (2)	✓								✓	
Soak Time Warm (1)	✓								✓	
Soak Time Warm (2)	✓								✓	
Synchronous Start-Up Time Cold	✓	✓	✓	✓	✓				✓	
Synchronous Start-Up Time Hot	✓	✓	✓	✓	✓				✓	
Synchronous Start-Up Time Warm	✓								✓	
Target Reservoir Level Percentage				✓						✓
Start of Restricted Range 1	✓	✓	✓	✓	✓				✓	
End of Restricted Range 1	✓	✓	✓	✓	✓				✓	
Start of Restricted Range 2	✓	✓	✓	✓	✓				✓	
End of Restricted Range 2	✓	✓	✓	✓	✓				✓	

DEFINITIONS

Dwell Time Down	The duration for which the Generating Unit must remain at the Dwell Time Down Trigger Point during a change in its MW Output while ramping down between instructed MW Output and Minimum Generation .
Dwell Time Down Trigger Point	A constant MW level at which a Generating Unit must remain while ramping down between instructed MW Output and Minimum Generation . There may be circumstances where more than one parameter applies and this is indicated by adding a number at the end of the parameter.
Dwell Time Up	The duration for which the Generating Unit must remain at the Dwell Time Up Trigger Point during a change in its MW Output while ramping up or down between Minimum Generation and instructed MW Output .
Dwell Time Up Trigger Point	A constant MW level at which a Generating Unit must remain while ramping up or down between Minimum Generation and instructed MW Output . There may be circumstances where more than one parameter applies and this is indicated by adding a number at the end of the parameter.