

## Stage 03: Report to the Authority

### Grid Code

# GC0052 Assigning Detailed Planning Data (DPD) References

What stage is this document at?

01 Workgroup Report

02 Industry Consultation

03 Report to the Authority

This proposal seeks to modify the Grid Code to clarify instances where DPD references do not include a classification of DPD I or DPD II.

The purpose of this document is to assist the Authority in its decision of whether to implement the proposed Grid Code Modification.

**Published on:** 29 August 2014



**National Grid recommends:**

National Grid supports the implementation of GC0052 as it better facilitates the Applicable Grid Code Objectives (ii)



**High Impact:**

None identified



**Medium Impact:**

None identified



**Low Impact:**

National Grid and new generators looking to connect

## Contents



1	Executive Summary .....	3
2	Why Change? .....	4
3	Solution .....	5
4	Impact & Assessment .....	6
5	Consultation Responses .....	8
	Annex 1 - Proposed Legal Text .....	9
	Annex 2 - Consultation Responses.....	17

---

### Any Questions?

---

Contact:

**Catherine Hiorns**

---



[catherine.hiorns1@nationalgrid.com](mailto:catherine.hiorns1@nationalgrid.com)



01189 363438

---

Proposer:

**Rob Wilson**

National Grid

---

## About this document

This document is the Report to the Authority for GC0052 which contains the responses to the Industry Consultation and the National Grid recommendation. The purpose of this document is to assist the Authority in their decision whether to implement the GC0052 proposed changes.

The revisions to the Grid Code proposed by National Grid and sent to the Authority require approval by that body and will, if approved, come into force on such date (or dates) of which Authorised Electricity Operators will be notified by National Grid, in accordance with the Authority's approval.

## Document Control

Version	Date	Author	Change Reference
0.1	26 August 2014	National Grid	Draft Report to the Authority
1.0	29 August 2014	National Grid	Final Report to the Authority

---

GC0052 Report to the Authority

---

29 August 2014

---

Version 1.0

---

Page 2 of 19

---

## 1 Executive Summary

- 1.1 GC0052 aims to clarify references in the Grid Code to Detailed Planning Data (DPD). DPD should be classified as either DPD I or DPD II; in some instances however this classification is not currently made.
- 1.2 The modification aims to reduce confusion by now specifying any DPD references that do not include a classification. This change is designed to maintain the current connection arrangements for this data, resulting in minimal change to the connection process.
- 1.3 GC0052 was proposed by National Grid and submitted to the Grid Code Review Panel for their consideration on 16 July 2014. The Panel determined that the proposal should progress to Industry Consultation.
- 1.4 An Industry Consultation was published on 28 July 2014 for 20 business days. 1 response was received; this was supportive of the proposed changes.

### National Grid Recommendation

- 1.5 National Grid supports the implementation of GC0052 as it better facilitates the Applicable Grid Code Objective (ii). This is achieved by providing clarification on time scales for data to be provided in the application process for a new Grid Connection point.

## 2 Why Change?

- 2.1 In October 2010 a change to the Grid Code was implemented to facilitate a change to Detailed Planning Data (DPD) (Grid Code Modification H/09<sup>1</sup>). This change categorised DPD into either DPD I or DPD II.
- 2.2 This modification aims to clarify the remaining references that are currently lacking a classification. These are minor housekeeping errors following the previous modification that have been discovered and need correcting.

### Detailed Planning Data

- 2.3 A party (user) wishing to connect to the National Electricity Transmission System (NETS) is required by the Grid Code Planning Code 4.4.2) to submit planning data to NGET regarding the proposed connection. The submission of this data occurs after the User has accepted the offer for a CUSC contract.
- 2.4 Detailed Planning Data was separated into DPD I and DPD II following a review. The change reflected the challenges faced by some Users, particularly wind farm developers, to meet the requirements to provide all data at the outset.
- 2.5 DPD I is provided to NGET within 28 days of making a connection offer (or shorter or longer period as determined or agreed by NGET with the User).
- 2.6 DPD II is the data provided to NGET no later than 2 years (or such shorter or longer period determined or agreed by NGET with the user) prior to the date on which the connection is complete and ready to start (the Completion Date) as agreed bilaterally between the User and NGET.

### Identified Problem

- 2.7 There are currently several references in the Grid Code that solely categorise data as DPD. For these items it is unclear in what timescale they should be submitted. This has the ability to cause confusion during the application process and potential delays to a connection, if for example, this item is assumed by the User to be DPD II and by NETS as DPD I
- 2.8 Clarifying these data items will support the submission of Planning Data in an efficient and timely manner and avoid confusion.

---

<sup>1</sup> <http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Modifications/Concluded/2009/>

### 3 Solution

- 3.1 National Grid proposes that any remaining references to DPD should be changed to reflect the current classifications. This would result in these references becoming either DPD I or DPD II.
- 3.2 The alterations made to the DPD references aim to provide clarity on any outstanding references. This will help avoid confusion or misinterpretation of these items during the connection process.
- 3.3 The change from DPD to either DPD I or DPD II aims to reflect the current way this data is treated and there should therefore be no impact on current or future generator connections.
- 3.4 To establish the correct classification for the remaining DPD references, the aim was to reflect any current reference to the item elsewhere in the Grid Code. If this item has not been referenced in the Grid Code elsewhere, discussions have occurred to identify how National Grid currently treats this data.

## 4 Impact & Assessment

### Impact on the Grid Code

- 4.1 GC0052 requires amendments to the following parts of the Grid Code:
- Planning Code
  - Data Registration Code
- 4.2 The text required to give effect to the proposal is contained in Annex 1 of this document.

### Impact on National Electricity Transmission System (NETS)

- 4.3 The proposed changes will ensure clarity during the connection process and facilitate the right information being available at the right time.

### Impact on Grid Code Users

- 4.4 The proposed modification will ensure that new connections will have full clarity on data submission requirements and timescales.

### Impact on Greenhouse Gas emissions

- 4.5 National Grid has not identified any impacts that the proposed modification will have on Greenhouse Gas emissions.

### Assessment against Grid Code Objectives

- 4.6 National Grid considers that GC0052 would better facilitate the Grid Code objective:

- (i) to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;

*The proposal has a neutral impact on this objective*

- (ii) to facilitate competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);

*The proposed changes simplify and clarify the data to be provided by a new connection customer, thus reducing barriers to entry and facilitating competition.*

- (iii) subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole; and

*The proposal has a neutral impact on this objective*

- (iv) to efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency.

*The proposal has a neutral impact on this objective*

### **Impact on core industry documents**

4.7 The proposed modification does not impact any core industry documents

### **Impact on other industry documents**

4.8 The proposed modification does not impact any other industry documents

### **Implementation**

4.9 National Grid proposes GC0052 should be implemented 10 business days after an Authority decision.

## 5 Consultation Responses

- 5.1 National Grid has consulted Authorised Electricity Operators (AEOs) on this issue. The consultation period opened on 28 July 2014 and closed on 26 August 2014. 1 response was received during the consultation period.
- 5.2 The below table provides an overview of the 1 response received. Copies of the responses are included in Annex 2.

Ref	Company	Supportive	Comments
CR-01	RWE Group of GB companies	Yes	No Comments

### National Grid Comments on Responses

- 5.3 National Grid would like to thank RWE for their comments regarding GC0052.



## Annex 1 - Proposed Legal Text

This section contains the proposed legal text to give effect to the proposals. The proposed new text is in red and is based on Grid Code Issue 5 Revision 9

## APPENDIX D - DATA NOT DISCLOSED TO A RELEVANT TRANSMISSION LICENSEE

PC.D.1 Pursuant to PC.3.4, **NGET** will not disclose to a **Relevant Transmission Licensee** data items specified in the below extract:

PC REFERENCE	DATA DESCRIPTION	UNITS	DATA CATEGORY
PC.A.3.2.2 (f) (i)	Performance Chart at <b>Generating Unit</b> stator terminals		<b>SPD</b>
PC.A.3.2.2 (b)	<b>Output Usable</b> (on a monthly basis)	MW	<b>SPD</b>
PC.A.5.3.2 (d) Option 1 (iii)	GOVERNOR AND ASSOCIATED PRIME MOVER PARAMETERS Option 1  BOILER & STEAM TURBINE DATA Boiler time constant (Stored <b>Active Energy</b> ) HP turbine response ratio: (Proportion of <b>Primary Response</b> arising from HP turbine) HP turbine response ratio: (Proportion of <b>High Frequency Response</b> arising from HP turbine)	S   %  %	<del>DPD</del> <del>DPD II</del>  <del>DPD</del> <del>DPD II</del>  <del>DPD</del> <del>DPD II</del>
Part of PC.A.5.3.2 (d) Option 2 (i)	Option 2  All <b>Generating Units</b>  Governor Deadband - Maximum Setting  - Normal Setting  - Minimum Setting	        ±Hz  ±Hz  ±Hz	        <del>DPD</del> <del>DPD II</del>  <del>DPD</del> <del>DPD II</del>  <del>DPD</del> <del>DPD II</del>
Part of PC.A.5.3.2 (d) Option 2 (ii)	<b>Steam Units</b>  Reheater Time Constant	  sec	  <del>DPD</del> <del>DPD II</del>

PC REFERENCE	DATA DESCRIPTION	UNITS	DATA CATEGORY
	Boiler Time Constant	sec	<del>DPD</del> <del>DPD II</del>
	HP Power Fraction	%	<del>DPD</del> <del>DPD II</del>
	IP Power Fraction	%	<del>DPD</del> <del>DPD II</del>
Part of PC.A.5.3.2 (d) Option 2 (iii)	<b>Gas Turbine Units</b> Waste Heat Recovery Boiler Time Constant		
Part of PC.A.5.3.2 (e)	<b>UNIT CONTROL OPTIONS</b>		
	Maximum droop	%	<del>DPD</del> <del>DPD II</del>
	Minimum droop	%	<del>DPD</del> <del>DPD II</del>
	Maximum frequency deadband	±Hz	<del>DPD</del> <del>DPD II</del>
	Normal frequency deadband	±Hz	<del>DPD</del> <del>DPD II</del>
	Minimum frequency deadband	±Hz	<del>DPD</del> <del>DPD II</del>
	Maximum Output deadband	±MW	<del>DPD</del> <del>DPD II</del>
	Normal Output deadband	±MW	<del>DPD</del> <del>DPD II</del>
	Minimum Output deadband	±MW	<del>DPD</del> <del>DPD II</del>
	Frequency settings between which Unit Load Controller droop applies:		
	Maximum	Hz	<del>DPD</del> <del>DPD II</del>
	Normal	Hz	<del>DPD</del> <del>DPD II</del>
	Minimum	Hz	<del>DPD</del> <del>DPD II</del>
	Sustained response normally selected	Yes/No	<del>DPD</del> <del>DPD II</del>

PC REFERENCE	DATA DESCRIPTION	UNIT S	DATA CATEGORY
PC.A.3.2.2 (f) (ii)	Performance Chart of a <b>Power Park Modules</b> at the connection point		<b>SPD</b>
PC.A.3.2.2 (b)	<b>Output Usable</b> (on a monthly basis)	MW	<b>SPD</b>
PC.A.3.2.2 (e) and (j)	<b>DC CONVERTER STATION DATA</b>  <b>ACTIVE POWER TRANSFER CAPABILITY (PC.A.3.2.2)</b>  Import MW available in excess of <b>Registered Import Capacity.</b>  Time duration for which MW in excess of <b>Registered Import Capacity</b> is available  Export MW available in excess of <b>Registered Capacity.</b>  Time duration for which MW in excess of <b>Registered Capacity</b> is available	MW  Min  MW  Min	<b>SPD</b>  <b>SPD</b>  <b>SPD</b>  <b>SPD</b>
Part of PC.A.5.4.3.3	<b>LOADING PARAMETERS</b>  MW Export  Nominal loading rate  Maximum (emergency) loading rate  MW Import  Nominal loading rate  Maximum (emergency) loading rate	  MW/s  MW/s  MW/s  MW/s	  <del>DPD</del> <del>DPD I</del>  <del>DPD</del> <del>DPD I</del>  <del>DPD</del> <del>DPD I</del>  <del>DPD</del> <del>DPD I</del>

**SCHEDULE 1 - GENERATING UNIT (OR CCGT MODULE), POWER PARK  
MODULE AND DC CONVERTER TECHNICAL DATA**

DATA DESCRIPTION	UNITS	DATA to RTL		DATA CAT.	GENERATING UNIT (OR CCGT MODULE, AS THE CASE MAY BE)							
		CUSC Cont ract	CUSC App. Form		G1	G2	G3	G4	G5	G6	STN	
Rated MVA (PC.A.3.3.1)	MVA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>SPD+</b>								
Rated MW (PC.A.3.3.1)	MW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>SPD+</b>								
Rated terminal voltage (PC.A.5.3.2.(a) & PC.A.5.4.2 (b))	kV	<input type="checkbox"/>		<b>DPD</b> <b>DPD I</b>								
*Performance Chart at <b>Onshore Synchronous Generating Unit</b> stator terminals (PC.A.3.2.2(f)(i))				<b>SPD</b>	(see <b>OC2</b> for specification)							
* Performance Chart of the <b>Offshore Synchronous Generating Unit</b> at the <b>Offshore Grid Entry Point</b> (PC.A.3.2.2(f)(ii))												
* <b>Output Usable</b> (on a monthly basis) (PC.A.3.2.2(b))	MW			<b>SPD</b>	(except in relation to <b>CCGT Modules</b> when required on a unit basis under the <b>Grid Code</b> , this data item may be supplied under Schedule 3)							
Turbo-Generator inertia constant (for synchronous machines) (PC.A.5.3.2(a))	MW secs /MVA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>SPD+</b>								
Short circuit ratio (synchronous machines) (PC.A.5.3.2(a))		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>SPD+</b>								
Normal auxiliary load supplied by the <b>Generating Unit</b> at rated MW output (PC.A.5.2.1)	MW	<input type="checkbox"/>		<b>DPD II</b>								
Rated field current at rated MW and MVA output and at rated terminal voltage (PC.A.5.3.2 (a))	MVA	<input type="checkbox"/>		<b>DPD II</b>								
	A	<input type="checkbox"/>		<b>DPD II</b>								

Field current open circuit saturation curve (as derived from appropriate manufacturers' test certificates): (PC.A.5.3.2 (a))	A	<input type="checkbox"/>		<b>DPD II</b>					
120% rated terminal volts	A	<input type="checkbox"/>		<b>DPD II</b>					
110% rated terminal volts	A	<input type="checkbox"/>		<b>DPD II</b>					
100% rated terminal volts	A	<input type="checkbox"/>		<b>DPD II</b>					
90% rated terminal volts	A	<input type="checkbox"/>		<b>DPD II</b>					
80% rated terminal volts	A	<input type="checkbox"/>		<b>DPD II</b>					
70% rated terminal volts	A	<input type="checkbox"/>		<b>DPD II</b>					
60% rated terminal volts	A	<input type="checkbox"/>		<b>DPD II</b>					
50% rated terminal volts									
<b>IMPEDANCES:</b>									
(Unsaturated)									
Direct axis synchronous reactance (PC.A.5.3.2(a))	% on MVA	<input type="checkbox"/>		<b>DPD I</b>					
Direct axis transient reactance (PC.A.3.3.1(a)& PC.A.5.3.2(a))	% on MVA	<input type="checkbox"/>	■	<b>SPD+</b>					
Direct axis sub-transient reactance (PC.A.5.3.2(a))	% on MVA	<input type="checkbox"/>		<b>DPD I</b>					
Quad axis synch reactance (PC.A.5.3.2(a))	% on MVA	<input type="checkbox"/>		<b>DPD I</b>					
Quad axis sub-transient reactance (PC.A.5.3.2(a))	% on MVA	<input type="checkbox"/>		<b>DPD I</b>					
Stator leakage reactance (PC.A.5.3.2(a))	% on MVA	<input type="checkbox"/>		<b>DPD I</b>					
Armature winding direct current resistance. (PC.A.5.3.2(a))	% on MVA	<input type="checkbox"/>		<b>DPD I</b>					
In Scotland, negative sequence resistance (PC.A.2.5.6 (a) (iv))	% on MVA	<input type="checkbox"/>		<b>DPD I</b>					
<p>Note:- the above data item relating to armature winding direct-current resistance need only be provided by <b>Generators</b> in relation to <b>Generating Units</b> commissioned after 1st March 1996 and in cases where, for whatever reason, the <b>Generator</b> is aware of the value of the data item.</p>									

**SCHEDULE 2 - GENERATION PLANNING PARAMETERS**

DATA DESCRIPTION	UNITS	DATA to		DATA CAT.	GENSET OR STATION DATA								
		RTL			G1	G2	G3	G4	G5	G6	STN		
		CUSC Contract	CUSC App. Form										
<b>Synchronising Generation (SYG) after 48 hour Shutdown</b> <i>PC.A.5.3.2(f) &amp; OC2.4.2.1(a)</i>	MW	■		<b>DPD II &amp; OC2</b>									-
<b>De-Synchronising Intervals</b> (Single value) <i>OC2.4.2.1(a)</i>	Mins	■		<b>OC2</b>	-	-	-	-	-	-	-	-	-
<b><u>RUNNING AND SHUTDOWN PERIOD LIMITATIONS:</u></b>													
Minimum Non Zero time (MNZT) after 48 hour <b>Shutdown</b> <i>OC2.4.2.1(a)</i>	Mins	■		<b>OC2</b>									
Minimum Zero time (MZT) <i>OC2.4.2.1(a)</i>	Mins			<b>OC2</b>									
<b>Existing AGR Plant Flexibility Limit</b> (Existing AGR Plant only)	No.			<b>OC2</b>									
80% Reactor Thermal Power (expressed as Gross-Net MW) <b>(Existing AGR Plant only)</b>	MW			<b>OC2</b>									
<b>Frequency Sensitive AGR Unit Limit</b> (Frequency Sensitive AGR Units only)	No.			<b>OC2</b>									
<b><u>RUN-UP PARAMETERS</u></b> <i>PC.A.5.3.2(f) &amp; OC2.4.2.1(a)</i>													
<b>Run-up rates (RUR) after 48 hour Shutdown:</b> (See note 2 page 3) MW Level 1 (MWL1) MW Level 2 (MWL2)	MW MW	■ ■		<b>OC2</b> <b>OC2</b>									- -
(Note that for DPD only a single value of run-up rate from Synch Gen to Registered Capacity is required)													
RUR from Synch. Gen to MWL1	MW/Mins	■		<b>OC2</b>									
RUR from MWL1 to MWL2	MW/Mins	■		<b>OC2</b>									
RUR from MWL2 to RC	MW/Mins	■		<b>OC2</b>									

<u>Run-Down Rates (RDR):</u>		(Note that for DPD only a single value of run-down rate from Registered Capacity to de-synch is required)																		
MWL2	MW	■																		
RDR from RC to MWL2	MW/Min	■																		
MWL1	MW	■																		
RDR from MWL2 to MWL1	MW/Min	■																		
RDR from MWL1 to de-synch	MW/Min	■																		

•



## Annex 2 - Consultation Responses

The following table provides a list of the responses received to the Grid Code Consultation GC0052.

Reference	Company
CR-01	RWE Group of GB companies

## GC0052 Assigning Detailed Planning Data (DPD) References

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses by **26 August 2014** to [Grid.Code@nationalgrid.com](mailto:Grid.Code@nationalgrid.com). Please note that any responses received after the deadline or sent to a different email address may not receive due consideration.

These responses will be included in the Report to the Authority which is drafted by National Grid and submitted to the Authority for a decision.

<b>Respondent:</b>	John Norbury Network Connections Manager RWE Supply & Trading GmbH Windmill Hill Business Park Whitehill Way Swindon SN5 6PB T +44 (0)1793 89 2667 M +44 (0)7795 354 382 <a href="mailto:john.norbury@rwe.com">john.norbury@rwe.com</a>
<b>Company Name:</b>	RWE Group of GB companies, including RWE Generation UK plc, RWE Innogy UK Limited and RWE Supply & Trading GmbH.
<b>Do you support the proposed implementation approach? [note there is no current straight forward alternative to following the standard process]</b>	Yes
<b>Do you believe that GC0052 better facilitates the appropriate Grid Code objectives?</b>	<p><i>For reference the applicable Grid Code objectives are:</i></p> <p><i>(i) to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;</i></p> <p><i>(ii) to facilitate competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);</i></p>

	<p><i>(iii) subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole; and</i></p> <p><i>(iv) to efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency.</i></p>
<p><b>Do you have any additional comments?</b></p>	<p>No</p>