

**Firm Frequency Response (FFR)
Detailed Change Proposals (DCP-19)**

Executive Summary

Context

08 October 2019

On the 19th July 2019 National Grid published a Firm Frequency Response Outline Change Proposal (OCP) which described the changes required by the European Demand connection Code.

In accordance with paragraph 1.2 of the SCTs, we are now publishing this Detailed Change Proposal (DCP), which is accompanied by an updated version of the SCTs (Issue #10).

Also accompanying this document is a redline version of these updated SCTs showing the changes made to the “Simplification Version” of Issue #9 which was circulated with the OCP.

National Grid would like to express their thanks for all those parties who gave due consideration to the proposals and responses received.

As a reminder, the following proposals were outlined in the OCP:

- European Demand Connection Code.
- Housekeeping
 - updating SCT’s to reflect change to National Grid ESO
 - Change reference to testing guidance in clause 4.2.1 and 4.2.2 from “Technical Guidance and Testing Procedure” to “Firm Frequency Response Balancing Service Test Guidance for Providers

No responses to OCP were received therefore National Grid ESO has decided to implement the changes, with a Final Implementation Date of 01 October 2019, as shown in the table below.

Proposal	Implementation status, action and notes	Final Implementation Date
European Demand Connection Code	Implement – Addition of clause 2.2.2 (e) and 3.8.2	01 October 2019
House keeping	Implement – Updated SCT’s to reflect change to National Grid ESO and clause 4.2.1 & 4.2.2 to Firm Frequency Response Balancing Service Test Guidance	01 October 2019

Further proposals for changes to the SCTs, including where necessary to reflect the EU’s Electricity Balancing Guidelines, will be the subject of subsequent Outline Change Proposals in due course.

Firm Frequency Response

OUTLINE CHANGE PROPOSAL – 19

1. Demand Connection Code requirements

Issued in OCP

The Demand Connection Code (DCC) is one of a set of European electricity codes that have been introduced as part of the European Third Energy Package; this came into law as a Commission Regulation (having direct effect in Member States) on 3 March 2011, with the aim of enabling a greater penetration of renewables, improving security of supply and enhancing competition. It looks to do this by developing a European internal energy market through the creation of a regulatory framework to support the harmonisation and integration of European Energy Markets.

DCC became European Law on 7th September 2016 and was implemented into the GB frameworks by 7th September 2018. In general, the requirements of DCC will apply to any party who places a contract for its main Demand equipment on or after 7 September 2018 and connects to the System on or after 18th August 2019.

DCC is seen as one of the drivers for creating harmonised solutions and products necessary for an efficient pan-European (and global) market in generator technology. The purpose of the code is to bring forward a set of coherent requirements in order to meet these challenges of the future.

The requirements under DCC are similar to the existing GB Grid Code for Non-Embedded Customers and Network Operators. In the case of Network Operators, the requirements of DCC generally apply to Network Operators in respect of totally New Distribution Systems rather than extensions to existing Distribution Networks. The code also introduces specific requirements for new equipment capable of providing Demand Side Response either on an individual or aggregated basis.

The general DCC requirements were incorporated into the Grid Code and Distribution Code via the joint [GC0104 and DC0104 modifications](#) following the Authority's approval in September 2018.

During implementation of GC0104, a new section of the Grid Code was introduced which has been called the Demand Response Services Code (DRSC). This new section, links closely to Standard Contract Terms as some of the DCC requirements can be stated at a high level in the Grid Code but some DCC requirements will need to be specified in more detail in the Standard Contract Terms (for example, data requirements, instruction facilities, time periods for service provision etc) so the two documents refer to each other. Putting it another way, the bulk of the requirements will still reside in the Standard Contract Terms with the Demand Response Services Code (DRSC) forming a framework round that process.

Because of this, the SCTs for procured services need to be updated to reflect the DCC requirements and to link to the DRSC.

Going forward, as a condition of the DCC requirements, any demand response provider who wishes to provide a FFR service, will also be required to satisfy the requirements of the Demand Response Services Code irrespective of whether they are a CUSC Party. For the avoidance of doubt, Demand Response Providers who are non CUSC Parties or who are not BM Participants would not be required to comply with other sections of the Grid Code unless specifically provided for in the SCT's.

Proposed changes

The requirements in the Demand Response Active Power Control or Demand Response System Frequency Control in DCC would apply to the FFR terms.

The areas National Grid is proposing to incorporate are the requirements relating to:

- Demand Response Active Power Control

- The ability to operate over the Grid Code frequency range as defined in ECC.6.1.2.1
 - The ability to operate over the Grid Code voltage range as defined in ECC.6.1.4.1
 - The ability to change load and the time periods over which real and reactive power flow can be adjusted
 - The ability to subsequently modify the demand profile once a subsequent instruction is issued
 - Notify The Company of any change to the Demand Response Providers capability
 - Capable of withstanding rates of change of frequency up to 1Hz/s over a 500ms period
 - Define the specific operational metering and static data requirements The Company require to facilitate the FFR service.
 - Define the specific protocols and communication mechanisms by which instructions are issued and received to and from FFR providers so that they can respond to instructions issued by NGET.
- Undertake a compliance process to include
 - Demonstration that the Demand Response Providers Plant owned, operated, controlled or managed satisfies the requirements of the SCT and Grid Code Demand Response Services Code.
 - Undertake tests and simulations to demonstrate the Demand Response Providers owned, operated, controlled or managed satisfies the requirements of the SCT's and Demand Response Services Code.
- Demand Response System Frequency Control
 - The ability to operate over the Grid Code frequency range as defined in ECC.6.1.2.1
 - The ability to operate over the Grid Code voltage range as defined in ECC.6.1.4.1
 - To be fitted with a dead band facility no greater than 0.03Hz unless otherwise specified in the Ancillary Services agreement.
 - The envelope of operation of the Demand Response System Frequency Control.
 - To be fitted with a control system which is capable of responding to changes in System Frequency outside the nominal value of 50Hz.
 - Equipped with a controller that measures the actual System Frequency. The refresh rate of the controller shall be no longer than 0.2 seconds.
 - Capable of detecting a change in System Frequency of 0.01Hz. Each Demand Unit owned, operated, controlled or managed by a Demand Response Provider shall be capable of rapid detection and respond to changes in System Frequency which shall be pursuant to the terms of the Ancillary Services Agreement. An offset in the steady state measurement of Frequency shall be acceptable up to 0.05Hz. Frequency measurements must be recorded at each Demand Facility must not be derived on an aggregated basis.
 - Define the specific operational metering and static data requirements The Company require to facilitate the FFR service.
 - Define the specific protocols and communication mechanisms by which instructions are issued and received to and from FFR providers so that they can respond to instructions issued by NGET.
 - Undertake a compliance process to include

- Demonstration that the Demand Response Providers Plant owned, operated, controlled or managed satisfies the requirements of the SCT and Grid Code Demand Response Services Code.
- Undertake tests and simulations to demonstrate the Demand Response Providers owned, operated, controlled or managed satisfies the requirements of the SCT's and Demand Response Services Code.

Question 1:

Do you agree that the Standard Contract Terms for FFR should be updated to ensure consistency with the Demand Response Services Code (DRSC), where the DRSC makes reference to the Ancillary Services agreement?

Question 2:

Do you have any general comments on how the requirements are incorporated?

Summary of responses

No responses received

Decision,

This proposal will be implemented by way of an update to the SCTs,

2. Housekeeping

Issued in OCP

Housekeeping

1. As part of Legal Separation, the FFR Standard contract terms (issue #9) need replace reference to National Grid Electricity Transmission plc with National Grid Electricity Operator Limited
2. Change reference to testing guidance in clause 4.2.1 and 4.2.2 from “Technical Guidance and Testing Procedure” to “Firm Frequency Response Balancing Service Test Guidance for Providers”

Question 3:

3. Do you agree with the proposed housekeeping changes?

Summary of responses

No responses received

Decision,

This proposal will be implemented by way of an update to the SCTs