nationalgrid

Stage 03: Workgroup Report

Grid Code

GC0104: EU Connection Codes GB Implementation – Demand Connection Code

What stage is this document at?

01	Proposal form
02	Workgroup Consultation
03	Workgroup Report
04	Code Admin Consultation
05	Draft Final Modification Report
06	Report to the Authority

Purpose of Modification:

This modification will set out within the Grid and Distribution Codes the following compliance obligations in the European Network Code – Demand Connection Code (DCC):

1. Technical requirements for new* Transmission-connected Demand Facilities; Transmission-connected Distribution Facilities and Distribution Systems.
2. Technical requirements for Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators.

* 'New' is defined as not being connected to the system at the time that the code enters into force and not having concluded a final and binding contract for the purchase of main plant items by two years after entry into force.

.	This document contains the discussion of the Workgroup which formed in August 2017 to develop and assess the proposal, the responses to the Workgroup Consultation which closed on 29 March 2018, the voting of the Workgroup held on 23 April 2018 and the Workgroup's final conclusions.
	High Impact: *Transmission System Operators (TSOs), Transmission Connected Demand Facilities, Demand Facilities providing DSR, Aggregators and Directly Connected Transmission Facilities; Distribution Network Operators*
	Medium Impact: *Operators of Demand schemes considering modernisation.*
	Low Impact: *None identified*
	The Workgroup concludes: The Workgroup, by majority, concluded that **WACM1** best facilitates the Grid Code Objectives

Contents

Timetable

Any Questions?

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The following timetable has been set by the Grid Code Panel:	
Workgroup Meeting 1	06 September 2017
Workgroup Meeting 2	06 December 2017
Workgroup Meeting 3	23 January 2018
Workgroup Meeting 4	7 February 2018
Workgroup Consultation open/closes	8 March 2018/29 March 2018
Workgroup Meeting 5	4 April 2018
Workgroup meeting 6	23 April 2018
Workgroup Report issued to the Grid Code Panel	8 May 2018
Workgroup Report presented to Panel	16 May 2018
Code Administration Consultation Report issued to the Industry/Code Administrator Consultation closes	16 May 2018/7 June 2018
Draft Final Modification Report presented to Panel	8 June 2018
Grid Code Panel Recommendation Vote	14 June 2018
Final Modification Report issued the Authority	25 June 2018
Authority Decision	31 July 2018
Decision implemented in Grid Code	7 September 2018

About this document

This document is the Workgroup Report that contains the discussion of the Workgroup which formed in August 2017 to develop and assess the proposal, the responses to the Workgroup Consultation which closed on 29 March 2018, the voting of the Workgroup held on 23 April 2018.

GC0104 was proposed by National Grid and was submitted to the Grid Code Modifications Panel for its consideration on 16 August 2017. The Panel decided to send the Proposal to a Workgroup to be developed and assessed against the Grid Code Objectives.

GC0104 aims to set out within the Grid and Distribution Codes the following compliance obligations in the European Network Code – Demand Connection Code (DCC):

1. Technical requirements for new* Transmission-connected Demand Facilities; Transmission-connected Distribution Facilities and Distribution Systems.
2. Technical requirements for Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators.

The Workgroup consulted on this Modification and a total of 11 responses were received. These responses can be located in Annex 6 of this Report.

Workgroup Conclusions

At the final Workgroup meeting, Workgroup members voted on the Original proposal and WACM1. The Workgroup, by majority, voted that WACM1 better facilitated the Grid Code objectives.

https://www.nationalgrid.com/uk/electricity/codes/grid-code/modifications/gc0104-eu-connection-codes-gb-implementation-demand

The table below details these specific areas and where the Workgroup have covered them or will cover post Workgroup Consultation.

The full Terms of Reference can be found in Annex 4.

Table 1: GC0104

Specific Area	Location in the report
a) *Implementation;*	Section 14
b) *Review draft legal text should it have been provided. If legal text is not submitted within the Grid Code Modification Proposal the Workgroup should be instructed to assist in the developing of the legal text; and*	Annex 2 and 3
c) *Consider whether any further Industry experts or stakeholders should be invited to participate within the Workgroup to ensure that all potentially affected stakeholders have the opportunity to be represented in the Workgroup.*	Attendance of Proposer at wider Industry meetings, webex carried out and wider attendance of those impacted following initial meetings eg Flextricity
d) *Technical requirements for new* Transmission-connected Demand Facilities; Transmission-connected Distribution Facilities and Distribution Systems.*	Outlined in Sections 6 and 7 and discussed in 8
e) *Technical requirements for Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators.* *'New' is defined as not being connected to the system at the time that the code enters into force and not having concluded a final and binding contract for the purchase of main plant items by two years after entry into force.*	Outlined in Sections 6 and 7 and discussed in 8

f) *The scope and applicability of the EU requirements under DCC, specifically articles are 12-47*	Outlined in Sections 6 and 7 and discussed in 8
g) *DSR impact*	Outlined in Sections 6 and 7 and discussed in 8
Distribution Code impact *Scope and applicability of EU requirements under Demand Connection Code.*	Outlined in Sections 6 and 7 and discussed in 8

Acronyms table

Acronym used	Full meaning
DCC	Demand Connection Code
SCTs	Standard Contract Terms
DRSC	Demand Response Services Code
GSP	Grid Supply Point

Document Control

Version	Date	Author	Change Reference
0.1	02 February 2018	Code Administrator	Draft Workgroup Consultation to Workgroup
0.2	06 March 2018	Workgroup	Draft Workgroup Consultation to Workgroup
0.3	08 March 2018	Workgroup	Workgroup Consultation to Industry
0.4	01 May 2018	Workgroup	Draft Workgroup Report for issue to Grid Code Panel
0.5	09 May 2018	Workgroup	Workgroup Report to Grid Code Panel

1 Summary

1.1 GC0104 was proposed by National Grid and was submitted to the Grid Code Review Panel for their consideration on 16 August 2017 and the Distribution Code Review Panel 7 September 2017.

1.2 The Grid Code Review Panel decided to send the Proposal to a Workgroup to be developed and assessed against the Grid Code Applicable Objectives.

1.3 Section 2 (Original Proposal), Section 6 (Proposer's solution) and Section 7 (Solution following Workgroup Consultation) are sourced directly from the Proposer and any statements or assertions have not been altered or substantiated/supported or refuted by the Workgroup. Section 8 and 11 of the Workgroup Report contains the discussion by the Workgroup on the Proposal and the proposed solution.

1.4 The Grid Code and Distribution Code Review Panels detailed in the Terms of Reference the scope of work for the GC0104 Workgroup and the specific areas that the Workgroup should consider. This can be found in Annex 4.

1.5 Please note that the proposed legal text that can be found in Annex 2 has been sourced from Grid Code Modifications GC0100, 101 and 102 (the Original proposals and not the alternatives proposed) that propose to amend the Grid Code to comply with the EU Codes RfG (Requirement for Generators) and HVDC (High Voltage Direct Current Connections). A decision is due from the Authority in May2018 on the GC0100, 101 and102 modifications ahead of submission of this GC0104 modification to the Authority. Should the Authority approve one of the alternatives proposed for GC0100 or GC0102 that have been submitted this would not affect the GC0104 legal text, there are no interdependencies between GC0104 legal text and alternatives proposed to GC0100 and GC0102.

1.6 The requirements outlined in the legal text for this GC0104 document have been created in the European Compliance Processes and European Connection Conditions that were created for Modification GC0102 (EU Connection Codes GB Implementation – Mod 3). You will also note that the proposed legal text for GC0104 also has an additional new section called DRSC so customers that are not Users and bound by the Grid Code only have to look at this one section.

1.7 GC0104 is made up of two elements, the Transmission-Connected Demand and the compliance for it and Demand Response Requirements and compliance for it.

2 Original Proposal

Section 2 (Original Proposal) is sourced directly from the Proposer and any statements or assertions have not been altered or substantiated/supported or refuted by the Workgroup. Section 8 of the Workgroup Consultation contains the discussion by the Workgroup on the Proposal and the potential Solution.

What

Full sections of the Grid and Distribution Codes, for example the Grid Code Connection Conditions (CCs), Planning Code (PC) and the Distribution Code (Distribution Planning and Connection Code (DPC)) will need to be extended to set out the new EU standards to which impacted users will need to comply with. In addition, it is proposed to add a new section to the Grid Code to cater for Demand Response Services which will be called the Demand Response Services Code (DRSC), and a new section, DPC9, to the Distribution Code solely for demand response.

This will result in a combination of completely new requirements inserted into the Grid Code and Distribution Code, and adjustments/continuation of corresponding existing GB requirements to line up with equivalents in the new EU codes.

Why

Guidance from BEIS and Ofgem[1] was to apply the new EU requirements within the existing GB regulatory frameworks. This would provide accessibility and familiarity to GB parties, as well as putting in place a robust governance route to apply the new requirements in a transparent and proportionate way.

This modification needs to be undertaken in a timely manner to ensure impacted users are aware of their compliance obligations - particularly in relation to procurement of equipment, testing and operational requirements. This modification is also therefore, critical to facilitate/demonstrate Member State compliance to this EU Network Code.

How

With the support of the industry, we will use this modification to finalise proposals to apply the EU Connection Codes requirements in DCC, before consulting with the wider industry and submitting to Ofgem for a decision.

Previously, a Joint Grid and Distribution Code Review Panel issue group was formed (GC0091) to:
1. Comprehensively review the code to form a local interpretation of the DCC requirements;
2. Undertake a mapping exercise between the EU and GB codes to understand the extent for possible code changes;
3. Form proposals, which will now be taken forward as formal modifications.

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[1] https://www.ofgem.gov.uk/ofgem-publications/92240/openletteronencimplementationandconsultationonnemodesignation-pdf
Ofgem's 2014 guidance letter on ENC implementation

3 Governance

Given the complexity and wide-ranging impact of the changes proposed in this modification, the Proposer believed that self-governance or fast track governance arrangements was not appropriate for GC0104.

The Grid and Distribution Code Review Panels agreed that this modification would have a material affect and as a result the modification will be submitted to the Authority for decision.

4 Why Change?

This proposal is one of a number of proposals which seek to implement relevant provisions of a number of new EU Network Codes/Guidelines which have been introduced in order to enable progress towards a competitive and efficient internal market in electricity.

The full set of EU network guidelines are;

- Regulation 2015/1222 – Capacity Allocation and Congestion Management (CACM) which entered into force 14 August 2015
- Regulation 2016/1719 – Forward Capacity Allocation (FCA) which entered into force 17 October 2016
- *Regulation 2016/631 - Requirements for Generators (RfG) which entered into force 17 May 2016*
- ***Regulation 2016/1388 - Demand Connection Code (DCC) which entered into force 7 September 2016***
- *Regulation 2016/1447 - High Voltage Direct Current (HVDC) which entered into force 28 September 2016*
- Transmission System Operation Guideline (SOGL) which entered into force 14 September 2017
- Emergency and Restoration (E&R) Guideline – entered into force 18 December 2017
- European Balancing Guideline (EBGL) – entered into force 18 December 2017

The DCC was drafted with the objective to improve security of supply; and enhance competition to reduce costs for end consumers, across EU Member States.

The DCC specifically sets harmonised technical standards for the connection of new transmission-connected demand facilities, new transmission-connected distribution facilities and new distribution systems, including new closed distribution systems. It also addresses the performance requirements for new demand units used by a demand facility or a closed distribution system to provide Demand Response to relevant system operators or relevant TSOs. Demand Response is an important instrument for increasing the flexibility of the internal energy market and for enabling optimal use of networks. Historically, generation facilities have formed the backbone of providing technical capabilities to System

Operators. However, Demand Facilities are expected to play a more pivotal role in the future.

Significant work to progress GB understanding of the DCC has been undertaken in Grid Code and Distribution Code Review Panel issue group GC0091 and allowed GB stakeholders to engage with the European Code drafting process as led by ENTSO-E. The GC0091 Workgroup was replaced by the GC0104 modification proposal.

GC0091 was widely attended by a range of parties and additional stakeholder engagement has been undertaken to ensure the impacts of DCC is understood, as well as to provide an opportunity to feed into the implementation approach.

Through proposing these modifications under Grid Code Open Governance (rather than continue with GC0091 which was raised under previous Grid Code governance arrangements), the aim is to finalise the proposals in a timely manner; and undertake the necessary consultations to confirm the proposals are appropriate, before submitting the final modification report to Ofgem for a decision.

5 Code Specific Matters

The Technical skillsets that have been outlined below were provided by the Proposer when the modification was originally raised.

The Proposer, Workgroup and Panel have concluded that they have a cross set of members that represent the skillset required as per the below.

Technical Skillsets

- Understanding of the GB regulatory frameworks (particularly Grid Code and Distribution Code)
- High level understanding of the EU codes and their potential impact
- Operational/technical understanding of equipment/facilities /systems which is bound by DCC
- Where appropriate, knowledge of the obligations and operational processes of GB Network Operators and the GB National Electricity Transmission System Operator

Reference Documents

Demand Connection Code legal text:
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1388&from=EN

6 Solution

Section 5 (Solution) is sourced directly from the Proposer and any statements or assertions have not been altered or substantiated/supported or refuted by the Workgroup. Section 8 of the Workgroup Consultation contains the discussion by the Workgroup on the Proposal and the potential Solution

The solution will ensure that the Grid and Distribution Codes reflect the technical requirements set out in DCC for GB compliance of code users with EU legislation. NGET is proposing to retain the existing Grid Code text as applicable to Demand Users, unless there is a conflict with the DCC requirements, or the DCC requirements require new additions which are not reflected in the current GB Grid Code.

GC0091 identified the specific changes necessary to the Grid and Distribution Codes by undertaking a code mapping exercise. The areas of change are highlighted below:

- Connection requirements affecting new connection of transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems
- Operational notification procedure for new connection of transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems
- Technical requirements of new Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators
- Operational notification procedure for new Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators
- Compliance procedures and requirements: testing, simulations, and monitoring

GC0091 and its subsequent work under GC0104 will address only the technical requirements of DCC.

For the purposes of this consultation the following principles have been adopted:

i) Retain the same structure and format as the current GB Grid and Distribution Codes.
ii) Retain the current requirements of the GB Grid and Distribution Codes unless there is good reason not to do so – for example there is either a conflict between the EU Codes and the GB codes or the EU Code requires additions to the GB Codes.
iii) Ensure that the revised GB Codes are easy to understand and use by those parties affected by them.
iv) Ensure consistency between the Grid and Distribution Codes and associated industry documents.

Following these principles, NGET is building on the new sections of the Grid Code Connection Conditions called the “European Connection Conditions” (ECC’s) and “European Compliance Processes” (ECP) created via GC0102, as well as existing sections of the Grid Code. This provides a solid foundation upon which to define the EU Connection Codes and implementation of DCC (through GC0104) will easily slot into the format adopted for the RfG and HVDC Codes. These sections apply to EU Code Users who must meet the requirements of the European Codes and ensure consistency between the GB Code and European Code without Users having to refer to two separate documents (i.e. the GB Grid Code and EU Connection Codes). The baseline legal text for GC0104 is established on the Grid Code legal text proposed in the original solution of GC0102 as it was anticipated that a decision would be made for GC0102 before GC0104 reached the Code Administrator Consultation and the Alternative solutions in GC0102 do not materially affect the solution in GC0104.

NGET is also proposing as part of GC0104, the introduction of a new section of the Grid Code, Demand Response Services Code (DRSC), to facilitate the DCC requirements relating to Demand Response Services.

Similarly, and as there is very little current accommodation of demand side response in the Distribution Code, a new section of the Distribution Code, DPC9, has been drafted as the repository of DSR issues for DCC compliance.

To accompany the legal text and illustrate how the DCC requirements have been discharged in GB, a code mapping table has been produced and is available at the time of this consultation. The sections below provide a high level overview of the proposal and the code mapping table along with the legal text provide the detail.

Articles 1-11 cover the scope of the DCC, including definitions and form part of this modification.

Glossary and Definitions

In general NGET will treat the DCC definitions of Transmission Connected Demand Facility and Transmission Connected Demand User as the GB definition Non-Embedded Customer. The DCC definition Transmission Connected Distribution System will be treated as a Network Operators System which is already an established GB Grid Code definition.

There was some debate around how Grid Supply Points (GSPs) would be treated and defined, particularly existing GSPs that were modified to the extent that they became defined as an EU GSP (i.e. required to comply with DCC) and the effect this would have on corresponding facilities/systems (e.g. a distribution network or a demand facility).

The proposal is to treat a GSP as its own entity, for example if an existing DNO upgrades a GSP to the point it becomes defined as an EU GSP, in DCC terms the GSP would be considered as a Distribution Facility and the requirements that apply to distribution facilities would apply to that single GSP.

In the context of a Distribution Facility (e.g. a demand provider connected to the transmission system), the GSP would be treated as a single entity but in this case would be applicable to the Demand Facility definition of DCC.

These requirements have been incorporated into the Grid Code so the User would not be required to consult the DCC.

Connection requirements affecting the connection of new transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems

This section relates to the following articles:

- General frequency requirements (Article 12)
- General voltage requirements (Article 13)
- Short-circuit requirements (Article 14)
- Reactive power requirements (Article 15)
- Protection requirements (Article 16)
- Control requirements (Article 17)
- Information Exchange (Article 18)
- Demand disconnection and demand reconnection (Article 19)
- Power Quality (Article 20)
- Simulation Models (Article 21)

Article 12 – General Frequency Requirements

Lists the frequency ranges and time periods demand equipment must be capable of remaining connected to the Transmission System. Longer timescales and frequency ranges can be agreed.

The general frequency requirements in DCC are very similar to those currently in the Grid Code and result in no significant change to the current GB text.

As the frequency requirements for distribution customers are quoted in G99 (and G98) for generators, text will be introduced in DPC9 that explains the frequency requirements for distribution connected DSR providers.

Article 13 – General Voltage Requirements

Lists the voltage ranges and time periods demand equipment must be capable of remaining connected to the Transmission System. Longer timescales and voltage ranges can be agreed.

The general voltage requirements in DCC are more or less the same as those currently in the Grid Code though it is pertinent to note that under the current GB Grid Code, voltage ranges of ±10% are permitted at 132kV and ±6% at voltages below 132kV Under DCC (and also RfG) the range of ±10% applies down to nominal voltage levels of 110kV but this issue is not believed to cause any significant issues in GB due to the lack of equipment in the 110 – 132kV range. For HV equipment below 110kV, the current range of ±6% shall continue to apply as per current GB practice.

Text has been introduced into DPC9 that makes it clear what voltage ranges distribution connected DSR providers have to comply with.

Article 14 - Short Circuit Requirements

Article 14 of DCC contains requirements in respect of Short Circuit Requirements at Transmission Connection Points.

During the drafting process, it was agreed and accepted that current GB practice can continue to apply unchanged without causing a conflict with the Short Circuit Requirements in DCC.

Article 15 - Reactive Power Requirements

This defines the requirement for Demand Facilities and Distribution Systems to be capable of maintaining steady-state operation at their connection point within a specified reactive power range and lists a number of conditions to follow.

These requirements are not currently in the Grid Code and as such the legal text from Article 15 will be added into the ECC section of the Grid Code.

It has been noted that as Article 15 doesn't apply to a Distribution Facility, if an Existing DNO was to significantly modify their GSP, the significantly modified GSP would not be required to meet the Reactive Power Requirements set out in Article 15.

Article 16 – Protection Requirements

This article focusses on the protection requirements at the connection point and goes on to list the high level elements necessary. These requirements in DCC are similar to those in the RfG and HVDC Codes which were implemented via GC0102. As such, of the changes introduced to the legal text, they are simply clarifications to the existing GB text with amendments added to ensure consistency with DCC and also to provide clarity on changes to protection settings which traditionally have been included in the Bilateral Connection Agreements.

Article 17 - Control Requirements

This article focusses on the schemes and settings of control devices that are necessary for system security and goes on to list a number of elements that must be covered as a minimum in the agreement with the TSO.

In general these requirements are similar to those in RfG and HVDC. However to ensure consistency with DCC, the GB legal text has been updated to ensure the specific elements in DCC are added to this section and where necessary are referred to in the Bilateral Connection Agreement.

Article 18 - Information Exchange

The TSO must specify the standards required for information exchange between itself and distribution facilities/system owners/operators, who must adhere to these requirements.

In summary the requirements in DCC are very similar to current GB practice. Under the current GB Grid Code the requirements for operational metering are covered under CC.6.5.6 with the exact list of signals being covered under the

Bilateral Connection Agreement together with the refresh rates. At the present time National Grid does not publish the standards for information exchange however it is planned to address this by the introduction of a new Electrical Standard which will be referenced in the Annex to the General Conditions. Changes to the RES will occur alongside, but not as part of, this modification.

Article 19 - Demand Disconnection and Reconnection

Low Frequency Demand Disconnection (LFDD)

Low Frequency Demand Disconnection Schemes have been employed in various Grid Systems throughout the world. In general, Transmission Systems are designed to a security standard which defines the level of robustness for a range of credible Transmission System faults for which supplies would not be lost.

LFDD Schemes are designed as a final insurance/defence plan to protect the total system in the event of a sequence of events that go beyond the security criteria. Their aim is to disconnect loads as system frequency falls, normally in defined stages below the minimum frequency criteria defined in the security standard. Whilst demand, will be lost its purpose is to protect the overall integrity of the system without the need for a full black start process to be initiated.

In GB a low frequency demand disconnection scheme has been in operation for many years. LFDD relays are installed at various points across the Total System (i.e. at points on the Transmission System and within the DNO Networks) not just at Grid Supply Points with the first stage of disconnection commencing at 48.8Hz and then subsequent stages operating at lower frequencies until 47Hz when all the LFDD relays will have operated. In GB, by the time the frequency has dropped to 47Hz all the LFDD relays will have operated to the point where 60% of total demand will have tripped.

The requirements for low frequency demand disconnection in GB are very similar to those in DCC and therefore very few changes are required to this section of the Grid Code other than in respect of the need to add the direction of Active Power flow. This amendment has been made to the draft legal text.

Low Voltage Demand Disconnection (LVDD)

Similar to Low Frequency Demand Disconnection, Low Voltage Demand Disconnection achieves reductions in demand through demand disconnections where the voltage drops below a pre-defined threshold. Additional measures can be put in place such as blocking the operation of tap changers on transformers.

In GB there is no LVDD scheme although it was investigated as an option in 2001. Under DCC, low voltage demand disconnection is a non-mandatory requirement and it is therefore proposed not to introduce it in this modification. Essentially, whilst DCC doesn't state we need LVDD schemes, it does specify the requirements necessary should it be introduced.

Low voltage demand disconnection at new sites only is likely to be of limited benefit for the System. To be effective, LVDD needs to be consistently applied

across the whole system and therefore would need to be addressed as a separate GB work group.

It has been recognised that should low voltage demand disconnection be introduced into GB in the future, it would need to be introduced via the GB Grid Code Governance process and would need to be consistent with the requirements of DCC in respect of new sites only and the fundamental principles of the DCC would need to be reflected in any future GB legal drafting.

Article 20 - Power Quality

Article 20 of DCC covers the level of distortion and fluctuation in supply voltage at Grid Supply Points. In summary this relates to the tolerable level of harmonics, flicker and unbalance at each Grid Supply Point.

The GB Grid Code already covers these elements in CC.6.1.5, CC.6.1.6 and CC.6.1.7. As a consequence there is no need to change these requirements and the proposal is simply to apply copy these requirements across into the ECC's.

Article 21 - Simulation Models

In order to design and operate the Transmission System, it is an essential requirement that true and accurate models of the plant as built are submitted to National Grid and Network Operators. Under the Grid Code Planning Code, data models are already required to be provided by Network Operators and Non-Embedded Customers for this very purpose.

Most of the data required for demand modelling purposes is already covered in the Grid Code planning code; however the Planning Code has been updated to ensure consistency with DCC.

Operational notification procedure for new connection of transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems

The following articles of DCC detail the operational notification procedure for complying with the technical requirements listed in articles 12-21:

- General provisions (Article 22)
- Energisation Operational Notification (Article 23)
- Interim Operational Notification (Article 24)
- Final Operational Notification (Article 25)
- Limited Operational Notification (Article 26)

Article 22 – General Provisions

DCC States that if any of the requirements in Articles 12-21 apply to a demand facility or system, they must follow the operational notification procedure to show the TSO they are compliant.

The Compliance Processes section of the Grid Code outlines the general compliance process for generation and demand. It is however true to say that the Compliance Processes section within the current GB Grid Code is largely biased

towards generation. Due to the requirements in DCC, it is necessary to update the European Compliance Processes section of the code (as developed under GC0102) to specifically capture the compliance processes applicable to transmission connected demand at new sites, which traditionally have only been previously completed through the commissioning process. This applies to articles 23 – 26.

To summarise, the notifications below are currently well established for Generators, however, as it stands in GB currently, only the EON applies to demand. DCC introduces these notifications as mandatory for new demand connections to the transmission network so most of the articles below can be considered as new requirements.

Article 23 - Energisation Operational Notification (EON)

An EON allows the demand facility owner or DNO to energise its internal network and auxiliaries by using the transmission connection specified for the connection point. In essence this is the same as the EON that would apply to a Generator where the User's plant and Apparatus is connected to the Transmission System for the first time. This activity is completed at the Commissioning Stage and takes place once all the pre checks are complete such as relevant data and site responsibility schedules etc.

Article 24 - Interim Operational Notification (ION)

As defined under the DCC an ION allows the demand facility owner or DNO operate using the transmission connection for a limited period of time.

Article 24 lists a number of items the TSO can request with regard to the data and study review for an ION. These include, for example, an itemised statement of compliance, detailed data submission, equipment certificates (as applicable where these are relied upon as a statement of compliance, simulation models, simulation studies and the approach to compliance testing.

In the case of a Generator, the EON is issued to allow a connection to the Transmission System and hence energise systems / auxiliaries whereas the ION enables synchronisation for the first time.

In the case of demand it is anticipated that the EON and ION will most likely be issued at the same time, as DCC Articles 12 – 21 relate to transmission connected demand or which most aspects are covered at the commissioning stage.

Article 25 - Final Operational Notification (FON)

Under DCC, a FON allows the Transmission Connected entity, be this a DNO or Non Embedded Customer, to operate its demand connection at the Connection Point. Putting this another way it is effectively a statement issued by National Grid confirming that the Network Operator or Non Embedded Customer has satisfied the requirements of the Grid Code and Bilateral Connection Agreement and the data provided is a true and accurate reflection of the plant as built. The issue of a FON will be dependent upon the submission of all necessary data associated with the connection – for example the final statement of Compliance, updated technical data, simulation models, studies and validation of test results against submitted models.

Article 26 - Limited Operational Notification (LON)

Under DCC where a demand facility owner or DNO who has received a FON, they must notify the TSO under certain circumstances specified in Article 26 – for example their plant is temporarily subject to a significant modification or loss of capability affecting its performance or equipment failure leading to non-compliance. Under these circumstances the Network Operator or Non-Embedded Customer will be required to apply for a LON if the issue persists for more than three months.

The LON in many ways applies similar conditions as the ION, with issues such as unresolved issues being identified and the time period required for resolution. Should these issues remain unresolved then an application for a derogation can be sought.

Technical requirements of new Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators

The following areas of modification affect Connection requirements of new Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators:

The general provisions for Demand Response are covered in DCC Article 27. It is important to note that these requirements are not mandatory unless a party wishes to provide Demand Response and a contract has been agreed with the System Operator (i.e. National Grid or a DNO) The general provisions for Demand Response are listed below.

- Specific provisions for demand units with demand response active power control, reactive power control and transmission constraint management (Article 28)
- Specific provisions for demand units with demand response system frequency control (Article 29)
- Specific provisions for demand units with demand response very fast active power control (Article 30)

There were numerous discussions around the correct vehicle to facilitate these new requirements as they do not currently exist in the GB frameworks. For example, a party who offers to provide a Demand Response Service need not necessarily be a CUSC party and obliged to meet the requirements of the Grid Code. After discussing this issue with the workgroup and presenting it at both the Power Responsive Flexibility Forum in January 2018 and the 2018 C16 workshop, feedback was requested from stakeholders and customers. The advantages and disadvantages of the options were presented and circulated to the Workgroup for their comment and feedback. The decision was between putting the requirements in Standard Contract Terms (and the categories stated in C16) or putting the requirements in the Grid Code. The table circulated to the workgroup is shown in Annex 1 and summarises the advantages and disadvantages of both options.

Following these presentations and discussions, the majority of industry parties favoured the requirements to go into the Grid Code, however, those in favour of the standard contract terms option stated they were concerned that the requirements would not be easily found and so the proposed solution is to create a separate and standalone section in the Grid Code for these requirements (and the corresponding compliance) which customers will be directed to via their contract. The Grid Code will therefore be updated in line with this view and a new section of the Grid Code will be introduced entitled Demand Response Services Code.

It is important to note that those parties who offer demand response services will still need to comply with the C16 process and the standard contract terms, however the technical and compliance requirements of DCC will lie in the Grid Code and the Standard contract terms will refer to these requirements as a condition of the contract. For the avoidance of doubt, parties who offer demand response services need only to satisfy the requirements of this new section of the Grid Code alone (i.e. the Demand Response Services Code), they do not need to satisfy other sections of the Grid Code unless either referred to in the Demand Response Services Code, as a condition of the Standard Contract Terms or if they are User's and hence CUSC parties in their own right.

Article 27 – General Provisions

Five categories are listed that demand services must be grouped into (although DCC states that these are not exclusive and so other categories can be developed). The five categories listed are:

Remotely controlled:

- Demand response active power control;
- Demand response reactive power control;
- Demand response transmission constraint management.

Autonomously controlled:

- Demand response system frequency control;
- Demand response very fast active power control.

In summary these requirements are new to the Grid Code and will be added to the Demand Response Services Code.

Distribution companies do not manage system frequency so DNOs will not be procuring Demand Response System Frequency Control or Demand Response Very Fast Active Power Control. There is therefore no accommodation needed in Distribution documents for these services nor is accommodation for Demand Response Transmission Constraint Management required.

Article 28 - Specific provisions for demand units with demand response active power control, reactive power control and transmission constraint management

Demand units providing the services specified in this article must meet certain technical requirements, including the capability to operate across the frequency

ranges specified, be equipped to receive instructions, and be capable of controlling power consumption from the network, to name a few examples. Again these are new requirements and will be added to the Demand Response Services Code.

This section does require the specification of certain technical parameters such as rate of change of frequency. The proposal is to set this at 1Hz/s over a 500ms timeframe which would be consistent with that for Generators as defined under GC0101. For connections below 110kV, the same demand response requirements would apply to connections at 110kV or above whilst noting that such parties are expected not to be Users as defined under the Grid Code and therefore not subject to the full Grid Code requirements.

In the Distribution Code, the technical requirements of Art 28 are all new and have been added to the new requirements of DPC9.

Article 29 - Specific provisions for demand units with demand response system frequency control

Demand units providing frequency control must meet certain technical requirements, including the capability to operate across the frequency and voltage ranges specified, be equipped with a controller that measures the actual system frequency, and be capable of detecting a change in system frequency of 0.01 Hz, to name a few examples. These requirements only apply if the party wishes to offer these services and will be added to the Demand Response Services Code as a new item.

This section does require the definition of certain technical parameters such as deadband and control system functionality. It is proposed to adopt the same requirements as that applied to Generation. In the case of deadband it is proposed to set this to ±0.015Hz. The maximum frequency deviation requirements will be based on a proportional control such that the wider the frequency deviation the greater the response provided until a cap is reached which would be subject to the availability of the demand response service. All other requirements would be as per Article 29 of DCC.

For connections below 110kV, the same demand response requirements would apply to connections at 110kV or above whilst noting that such parties are expected not to be Users as defined under the Grid Code and therefore not subject to the full Grid Code requirements.

Article 30 - Specific provisions for demand units with demand response very fast active power control

The relevant system operator may agree on a contract with demand units providing very fast active power control. If they do, it must include the response time, a change of active power related to a measure and the operating principle of the control system.

In summary such requirements would be pursuant to the terms of the Contract with National Grid. The new Demand Response Services Code has been updated to include this requirement as a non-mandatory service.

Operational notification procedure for new Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators

The following articles of DCC detail the operational notification procedure for complying with the technical requirements listed in articles 27-30:

- General provisions (Article 31)
- Procedures for demand units within a demand facility or a closed distribution system connected at a voltage level of or below 1000 V (Article 32)
- Procedures for demand units within a demand facility or a closed distribution system connected at a voltage level above 1000 V (Article 33)

Article 31 – General provisions

Article 31 sets out the provisions demand unit owners must adhere to and specifies that the operational notification procedure differs for connections above a voltage level of 1000V and those at or below 1000V.

All these requirements are new and will therefore be added to the Demand Response Services Code which is a new non mandatory section of the Grid Code applying only to Demand Response providers.

Article 32 - Procedures for demand units within a demand facility or a closed distribution system connected at a voltage level of or below 1000 V

It is specified that the operational notification will be in the form of an installation document and that a template shall be provided by the relevant system operator. It goes on to list a number of items that must be included in this installation document for example the location of connection, maximum capacity, type of demand response service, Equipment Certificates / Demand Unit Certificate or equivalent information and contact details.

Again these will be new elements added to the Demand Response Services Section of the Grid Code.

For embedded customers, DNOs will publish standard proformas, and supporting information, for users complete as installation documents. A draft of the proposed standard approach is included as in this consultation.

Article 33 - Procedures for demand units within a demand facility or a closed distribution system connected at a voltage level above 1000 V

It is specified that the operational notification will be in the form of a Demand Response Unit document (DRUD). The contents will include a statement of compliance (in relation to articles 36 to 47) and will lead to a FON.

These will be new elements added to the Demand Response Services Section of the Grid Code.

So far the DNOs have not identified any specific DSR related issue that is differentiated between LV and HV. Accordingly the proformas suggested for

discharge of Article 32 are believed to be appropriate and adequate to use for compliance with the DRUD requirements of Article 33.

Compliance

The purpose of the Compliance section is to ensure that the plant built is fully capable of meeting the requirements specified in DCC. Compliance is a key method of ensuring the data and models provided reflect the true and accurate performance of the equipment as built, this being a fundamental prerequisite for the design and operation of the System going forward.

Compliance covers three main areas. These are summarised as follows:-

i) The Compliance Process (i.e. the process by which parties demonstrate their plant can meet the requirements of the codes)
ii) Simulation (the submission of plant performance based on simulations)
iii) Testing (Plant testing - validation of actual test results against simulated results)

The following articles of DCC relate to compliance:

Article 34 – Responsibility of the demand facility owner, the distribution system operator and the closed distribution system operator
This section of DCC discusses the general requirements on demand facility owners, the distribution system operators and the closed distribution system operators for ensuring compliance with DCC.

Under the legal text, any demand or distribution customer who has a CUSC contract (e.g. A Network Operator or Non-Embedded Customer) will have to satisfy the compliance requirements of the European Compliance Processes (ECPs) and Demand Response Providers who are not necessarily CUSC parties will have to satisfy the compliance requirements in the DRSC. It is possible that a Demand Response Provider could also be a User (as defined in the Grid Code) in which case the requirements of the ECPs and the DRSC will apply.

The compliance requirements for services provided to DNOs are included in DPC9 and evidence is gathered via the proposed proformas.

Article 35 - Tasks of the Relevant System Operator
Article 35 relates to the tasks of the Relevant System Operator in ensuring that Users and Demand Response Providers comply with the requirements of DCC. As outlined above with regard to Article 34, the compliance obligations on the Relevant System Operator for Users is outlined in the ECPs and the compliance obligations on the Relevant System Operator for Demand Response Providers is outlined in the DRSC.

For demand response services provided to National Grid by distribution connected parties, National Grid will take the lead in the compliance process, with co-operation as necessary by the relevant DNO. For demand response services provided to DNOs, Demand Response Providers need to provide the information requested in the proformas for the installation document in Annex 3.

Articles 36 to 45 - Compliance testing and simulations

The titles of these Articles are as follows:

- Common provisions for compliance testing (Article 36)
- Compliance testing for disconnection and reconnection of transmission-connected distribution facilities (Article 37)
- Compliance testing for information exchange of transmission-connected distribution facilities (Article 38)
- Compliance testing for disconnection and reconnection of transmission-connected demand facilities (Article 39)
- Compliance testing for information exchange of transmission-connected demand facilities (Article 40)
- Compliance testing for demand units with demand response active power control, reactive power control and transmission constraint management (Article 41)
- Common provisions on compliance simulations (Article 42)
- Compliance simulations for transmission-connected distribution facilities (Article 43)
- Compliance simulations for transmission-connected demand facilities (Article 44)
- Compliance simulations for demand units with demand response very fast active power control (Article 45)

For Articles 36 to 45, the legal text has been drafted using the same principles adopted for Articles 34 and 35 in which the testing and simulation requirements for Users are defined in the ECPs and for Demand Response Providers are defined in the DRSC.

With regards to the Distribution Code, the compliance requirements of article 41 are catered for in the proformas attached as Annex 3.

Articles 46 and 47 - Compliance monitoring

The Article titles are as follows:

- Compliance monitoring for transmission-connected distribution facilities (Article 46)
- Compliance monitoring for transmission-connected demand facilities (Article 47)

These requirements only apply to Users (Network Operators and Non-Embedded Customers) and therefore, only the legal text in the ECPs has been updated to reflect these requirements.

7 Updated solution following workgroup consultation

Glossary and Definitions

Following discussions around some of the definitions with members of the workgroup, a few have been changed, in particular, EU Grid Supply Point, to more accurately reflect the requirements in DCC.

After reviewing WACM1, the definition of 'Substantial Modification' was also updated to reflect the use of the phrase "impacting technical capabilities" to align it more closely to the alternative suggested following stakeholder feedback. Notwithstanding this, the alternative still remains as the Original solution does not reflect the criteria relating to the determination by the Regulatory Authority of whether an existing installation becomes subject to DCC due to being substantially modified. It was not considered to be necessary to require Ofgem to make decisions for every "new" case, it would create inefficiencies in the process and by adding an extra stage would inevitably lead to longer decision turnaround times as the decision would have to be initially made by National Grid to determine if it is considered Substantial and then passed to the Authority to make a second decision - while the Connection Codes do refer to NRA approval, any GB connection agreement in dispute can be referred to Ofgem under Transmission Licence Condition C9 'Functions of the Authority', which discharges the obligations of DCC as Ofgem's decision is implicit providing both parties are in agreement.

Some of the DRSC related definitions were also updated for clarity following workgroup consultation responses and workgroup discussions – including Ancillary Services and Demand Response Services.

The definition of Demand Response Provider was also updated as there was some confusion for aggregators in the previous definition, so it now includes "own, operate, control or manage". This change will provide clarity that the definition of Demand Response Provider equally applies to owners of Demand Units who provide a Demand Response Service or simply aggregators who control a range of Demand Units on behalf of another party and provide a Demand Response Service on aggregate.

A minor change to section (d) of the definition of a GB Code User was introduced to make it clear that a Network Operator would still be classed as a GB Code User if it had one or more EU Grid Supply Points, but still has one or more GB Grid Supply Points connected to the Transmission System as part of its existing Distribution System. It should be noted that a User's type (e.g. EU Code User or GB Code User) will be specified in new bilateral connection agreements.

It was also noted that the compliance deadline in Article 59 of the DCC (referring to when the Code will apply) relates to the date of publication and not entry into force – therefore 7 September 2019 has now been amended to 18 August 2019 in the applicable definitions.

Demand Response Services Code (DRSC)

Following consultation responses it was noted that the DRSC would cause confusion to aggregators and some demand providers. An effort was made to liaise closely with these parties to make the DRSC more user-friendly and ensure it ties in with Standard Contract Terms (SCTs).

In light of this, a guidance note has been prepared in slide format, and circulated to workgroup members ahead of the GC0104 vote. This will further be developed into a more formal guidance note to ensure the linkage between the SCTs and DRSC is clear. It was decided that because a guidance note would be produced, some of the Appendices that were originally included in the legal text would be more suitable in a guidance note as they didn't list any requirements but were instead adding context and assistance.

References to Balancing Service as a defined term have also been removed to try and prevent confusion.

The main comments from the consultation with regards to the DRSC were around making sure the complexity of it wasn't creating barriers to entry so the majority of the redrafting has been around simplifying the text, tying it more closely to the SCTs and considering how this might work with the guidance note so that Demand Providers do not have to refer to several different documents. In addition, to ensure the code is efficient, the proposer noted that if this linkage was not clear it would result in significant duplication of text between the Standard Contract Terms and Grid Code, which could cause significant confusion.

The Standard Contract Terms will also be updated to reflect the link to the DRSC.

Planning Code (PC), Connection Conditions (CC), European Connection Conditions (ECC), Data Registration Code (DRC) and European Compliance Process (ECP)

These sections had minor amendments (mostly grammatical) following consultation responses and suggestions from workgroup members.

8 Impacts and Other Considerations

i. *The Grid Code and Distribution Code will bear the primary impact of the EU Connection Code mods.*

ii. *The Transmission/Distributions connections and compliance processes will need to be slightly altered to ensure they accommodate the new EU requirements as set out in the modified Grid Code and Distribution Codes.*

iii. *No system changes are anticipated as a result of implementing the EU Connection Codes*

Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

The EU Network Code implementation is being undertaken as a significant programme of work within the GB industry. This modification forms part of that programme, but is not part of an on-going SCR.

Consumer Impacts

This modification implements consistent technical standards across the EU for the connection of new transmission-connected Demand facilities, new transmission-connected distribution facilities and new distribution systems, including new closed distribution systems. It also addresses the performance requirements for new demand units used by a demand facility or a closed distribution system to provide Demand Response to relevant system operators and relevant TSOs. This should lead to efficiencies and potential cost savings for stakeholders.

The Demand Side Response provisions should also improve market access for new entrants, leading to greater levels of competition, which should lead to lower costs for end consumers.

The Workgroup, on the 23 January 2018 noted the cross over with GC0106 in Article 53 of SOGL (System Operator Guideline). This interaction was noted and the Workgroup agreed that this would be made clear within the legal text for the two consultations across the two modifications.

9 Workgroup Discussions – Initial four Workgroup meetings

The GC0104 Workgroup met on four occasions ahead of issuing this Workgroup Consultation paper to seek wider Industry views on the proposed draft solution from the Proposer. The Workgroup have not yet discussed any potential alternatives to the proposed Original solution but welcome any potential alternatives being raised by Industry for discussion at future Workgroup meetings following the Workgroup Consultation.

Any potential alternative option(s) will be considered by the Workgroup and if the potential alternative(s) is supported by a majority of the Workgroup (or the Workgroup chair) because they believe it better meets the Applicable Grid Code Objectives as compared to the Original then the potential alternative will be taken forward as a formal Alternatives to the Original proposal (meaning that they will be

worked up, legal text prepared and, ultimately, they will be available for Ofgem to approve, if appropriate, and implemented).

At the initial Workgroup meeting, held on 6 September 2017 the Proposer talked through the slides that they had produced outlining their view of the defect for new Transmission Connected Demand, new Transmission Connected Distribution Facilities plus new Distribution Systems and the proposed structure for progressing the piece of work. The slides can be found at the following link:

https://www.nationalgrid.com/uk/electricity/codes/grid-code/modifications/gc0104-eu-connection-codes-gb-implementation-demand

At the second Workgroup meeting, held on the 6 December 2017the Proposer talked through DCC Compliance and the slides that can be found at the following link labelled 6 December presentation:

https://www.nationalgrid.com/uk/electricity/codes/grid-code/modifications/gc0104-eu-connection-codes-gb-implementation-demand

The Proposer also talked through the two options which can be found in Annex 1 that they believed were available to produce a solution to the defect and sought feedback from the Workgroup on this. A Workgroup member noted that there was another (third) option. These options and table that was circulated for review by the Proposer can be found at Annex 1.

At the third Workgroup meeting, held on the 23 January 2018 the Workgroup discussed the following agenda items:

- Annex 1 options table and the solution adopted by the Proposer as their preferred option based on stakeholder feedback provided
- Interpretation of a new DNO GSP

C16 & SCTs vs. Grid Code

The Proposer outlined the engagement that they had carried out to form their proposed solution to the defect. This included presentation at the Proposer's 'Power Responsive Flexibility Forum'. The presentation that the Proposer gave can be found on the GC0104 area of the National Grid website. In addition the Proposer asked the GC0104 Workgroup and the C16 Workshop for feedback.

The Proposer stated that they would, as a result of the feedback that had been provided by both the GC0104 Workgroup and additional forums be proposing to amend the Grid Code. This proposed solution (the Original) can be located in the Solution Section of this Consultation (Section 6) document.

The Proposer went on to outline that they have sought to address the feedback from the respondents and have proposed a new section of the Grid Code for Demand Response services to prevent those not obligated to review the Grid Code to access their obligations, should they provide the service, quickly and in the most simple and transparent way possible.

The governance arrangements of the C16 documentation was highlighted by a Workgroup member; they stated that the C16 process is not subject to open and transparent governance (unlike the Grid Code and CUSC). The C16 process means that amendments cannot be made by Users, Citizens Advice or other parties (such as trade associations or other groups of interested parties) designated as a 'Materially Affected Party by Ofgem as they can be by the Grid Code and CUSC through their Open Governance Rules.

Commercial impacts and discussions

A Workgroup member raised concerns around a lack of details about the commercial framework for the Demand Connection Code (DCC) as the proposed contractual approach set out by the Proposer was neither harmonised or open and transparent. The Workgroup member noted that without this clarity on the harmonised rules for grid connection of demand facilities and distribution systems (as well as for demand side response provided to relevant network companies) then the implementation of the DCC would not be completed for GB.

The Proposer stated that the GC0104 Workgroup had been formed to address the Defect that the Grid Code was not compliant with DCC requirements and that the commercial arrangements for Demand Side Response services fell outside the scope of this modification, as stated in the original Modification Proposal that was presented to and accepted by the Grid Code Review Panel. It was noted that a separate team within National Grid are responsible for administering the contracts process. The Code Administrator took an action to make the CUSC Panel Secretary aware of this piece of work. The Proposer stated that this modification identified the defect of the technical aspects of the Demand Connection Code. The Code Administrator has completed the action above following meeting.

A Workgroup member noted the wording outlined in Article 58 (1) and (2):

<u>Amendment of contracts and general terms and conditions</u>

1. Regulatory authorities shall ensure that all relevant clauses in contracts and general terms and conditions relating to the grid connection of new transmission-connected demand facilities, new transmission-connected distribution facilities, new distribution systems and new demand units are brought into compliance with the requirements of this Regulation.

2. All relevant clauses in contracts and relevant clauses of general terms and conditions relating to the grid connection of existing transmission-connected demand facilities, existing transmission-connected distribution facilities, existing distribution systems and existing demand units subject to all or some of the requirements of this Regulation in accordance with paragraph 1 of Article 4 shall be amended in order to comply with the requirements of this Regulation. The relevant clauses shall be amended within three years following the decision of the regulatory authority or Member State as referred to in Article 4(1).

The Workgroup member stated that the requirement in the DCC was to have harmonised rules for connection. This meant that the contractual arrangements

needed to be identical in the cases of (i) new Transmission Connected Demand, (ii) new Transmission Connected Distribution Facilities plus (iii) new Distribution Systems. If local circumstances warranted a change then the prescribed DCC derogation procedure would need to be followed.

The Workgroup went onto discuss what amendments could possibly be required in respect of the Distribution System. In terms of Demand response, the Distribution Code representative noted that they did not have the equivalent to the C16.

It was noted that where Demand Response was being provided to a relevant system operator who was not a TSO (which was expected to be new demand unit used by a demand facility to provide Demand Response to a distribution system operator) then a new template could be added to the DCUSA. A Workgroup member noted that the Rules and Regulations need to be the same.

Another Workgroup member stated that the solution to the defect identified needs to ensure it does not cause any barriers to entry. The Proposer stated that they were attempting to, within their solution, ensure the process proposed is as simple as possible for Industry to understand and follow.

Additionally a Workgroup member noted that when drafting the Demand response requirements across the Grid and Distribution Codes that consistency would be required between the DSO and TSO.

Interpretation of a new DNO GSP

The Proposer for GC0104 asked the following question of the Workgroup and requested a discussion on this element of the modification:

- If a DNO upgrades it's Grid Supply Point to the point that the connection agreement needs to be significantly revised, our understanding is that the DCC extends only to that GSP not the DNO as a whole?
- Is this interpretation correct?
- Is there anything else we need to consider?

A Workgroup member stated that EONs and IONs would apply and that compliance comes from the combination of GSP and distribution system, not necessarily one or the other.

Another Workgroup member talked through an example of the equivalent situation at either a power station or existing demand facility and referred to Article 4 (1) (a) and (b) of the DCC :

"1. Existing transmission-connected demand facilities, existing transmission-connected distribution facilities, existing distribution systems and existing demand units that are or can be used by a demand facility or a closed distribution system to provide demand response services to a relevant system operator or relevant TSO, are not subject to the requirements of this Regulation, except where:

(a) an existing transmission-connected demand facility, an existing transmission-connected distribution facility, an existing distribution system, or an existing

demand unit within a demand facility at a voltage level above 1 000 V or a closed distribution system connected at a voltage level above 1 000 V, has been modified to such an extent that its connection agreement must be substantially revised in accordance with the following procedure:

> *(i) demand facility owners, DSOs, or CDSOs who intend to undertake the modernisation of a plant or replacement of equipment impacting the technical capabilities of the transmission-connected demand facility, the transmission-connected distribution facility, the distribution system, or the demand unit shall notify their plans to the relevant system operator in advance; (ii) if the relevant system operator considers that the extent of the modernisation or replacement of equipment is such that a new connection agreement is required, the system operator shall notify the relevant regulatory authority or, where applicable, the Member State; and*
>
> *(iii) the relevant regulatory authority or, where applicable, the Member State shall decide if the existing connection agreement needs to be revised or a new connection agreement is required and which requirements of this Regulation shall apply; or*

(b) a regulatory authority or, where applicable, a Member State decides to make an existing transmission-connected demand facility, an existing transmission-connected distribution facility, an existing distribution system, or an existing demand unit subject to all or some of the requirements of this Regulation, following a proposal from the relevant TSO in accordance with paragraphs 3, 4 and 5."

A workgroup member stated that the application of the wording across the EU Connection Code Modifications (GC0100, 101, 102 and 104) should be consistent as the wording is identical between the DCC (extract above) and the equivalent Article 4 (1) (a) and (b) in the RfG. They also noted that the wording in DCC Article 4 (1) (a) and (b) indicated that there should be a process where the Regulator is informed. It was additionally noted that there could be an implication for Ofgem that they needed to be made aware of. NGET took an action to speak to Ofgem around this and report back to the Workgroup so that stakeholders were fully aware of the outcome of those discussions.

The Proposer of GC0104 took an action to review the GC102 legal text and propose GC0104 legal text to ensure the application is consistent ahead of the Workgroup meeting ahead of the issuing of the Workgroup Consultation.

Please note that all presentations provided and discussed at the Workgroup meetings can be found at the following link:

https://www.nationalgrid.com/uk/electricity/codes/grid-code/modifications/gc0104-eu-connection-codes-gb-implementation-demand

Following the issue being raised with the Authority they provided the following clarity for the GC0104 Workgroup:

In terms of Article 4(1), the working group discussed the issues (eg time delays, resource requirements) associated with Ofgem reviewing and determining whether

parties should be treated as "new" or "existing" in all these cases . This was considered unnecessary where the generator and system operator agreed about its status. We considered that a practical interpretation of Article 4(1) was that we reviewed and decided whether parties should be treated "new" or "existing" where there was a dispute about whether the generator should be treated as "new" or "existing". This approach was not considered inconsistent with the wording of the RfG.

The Authority understands that there are concerns about the term "substantial modification". They believe that this term has been derived from the Article 4 (1)

"Existing power-generating modules are not subject to the requirements of this Regulation, except where:

(a) a type C or type D power-generating module has been modified to such an extent that its connection agreement must be substantially revised in accordance with the following procedure".

There were discussions during the working group about the production of an additional document to provide more information to stakeholders about the assessment process under Article 4 (1), so that parties had a better understanding of the type of change that would lead to their generator being treated as "new". It sounds like this document might be useful.

The Authority would reiterate the message that if there is any concern or dispute about the assessment undertaken by the system operator, then it can forwarded to us for decision.

Low Voltage Demand Disconnection (LVDD) Article 19 (2)

The Workgroup discussed the proposed solution with respect to LVDD. It was noted that the DCC specifies the requirements necessary for LVDD should it be introduced for GB. That decision will be made by the relevant TSO which, in this case, is NGET. NGET informed the Workgroup that it has no intention of taking up this right at this time.

Therefore, during the workgroup discussions it was noted that should low voltage demand disconnection be introduced into GB in the future, it would need to be introduced via the GB Grid Code Governance process and would need to be consistent with the requirements of DCC in respect of new sites only.

Low voltage demand disconnection at new sites only is likely to be of limited benefit for the System. To be effective, LVDD needs to be consistently applied across the whole system and therefore would need to be addressed as a separate GB work group. That said, if LVDD was introduced in GB in the future, then the fundamental principles of the DCC would need to be reflected in any future GB legal drafting.

Demand Response Services

During the Workgroup meetings there were discussions around the correct vehicle to facilitate these new requirements as they do not currently exist in the GB frameworks. For example, a party who offers to provide a Demand Response Service need not necessarily be a CUSC party and obliged to meet the requirements of the Grid Code. After the Proposer discussed this issue with the Workgroup and presenting it at both the Power Responsive Flexibility Forum in January 2018 and the 2018 C16 workshop, feedback was requested by the Proposer from stakeholders and customers. The advantages and disadvantages of each option, according to the Proposer, were presented and circulated to the Workgroup for their comment and feedback. The decision presented by the Proposer was between putting the requirements in Standard Contract Terms (and the categories stated in C16) or putting the requirements in the Grid Code. The table circulated by the Proposer to the Workgroup is shown in Appendix 1 and summarises the advantages and disadvantages of both options.

A Workgroup member noted that there was a third option which was to put the technical details in the Grid Code and the contractual arrangements in the CUSC. This would allow more stakeholders, as well as groups representing non CUSC parties (such as end consumers) to raise modification proposals to change the contractual terms – this was not possible with the C16 documentation as open governance and the CACoP principles were not applicable (to C16 matters).

Following these presentations and discussions, the majority of industry parties favoured the requirements to go into the Grid Code, however, those in favour of standard contract terms stated they were concerned that the requirements would not be easily found and so the Proposer set out that the solution is to create a separate and standalone section in the Grid Code for these requirements (and the corresponding compliance) which customers will be directed to via their contract. The Grid Code will therefore be updated in line with this view and a new section of the Grid Code will be introduced entitled Demand Response Services Code. A Workgroup member believed that placing the contractual arrangements in the CUSC (rather than the C16 approach) would be better for stakeholders and customers.

The Proposer noted that whilst these commercial arrangements were worth considering, the GC0104 Workgroup had been formed to address the Defect that the Grid Code was not compliant with DCC requirements and that the commercial arrangements for Demand Side Response services fell outside the scope of this modification, as stated in the original Modification Proposal that was presented to and accepted by the Grid Code Review Panel.

The GC0104 Workgroup met on the 22 February to discuss issuing the Workgroup Consultation.

Some Workgroup members expressed that, in their view, some further clarity and work was required ahead of issuing the Consultation to Industry. They stated that this was required as this is the only Consultation within the modification process where Industry can provide their input and potentially influence amendments and raise potential alternatives to the proposed solution.

The following information below has been added to the Consultation following the last Workgroup meeting, following the issues raised:

Workgroup members stated that the Standard Contract Terms needed to be available as part of this Consultation, please find the links to these below:

Firm Frequency Response:
https://www.nationalgrid.com/sites/default/files/documents/FFR%20SCTs%20-%20Issue%208%20Feb%201st%202017_0.pdf

Short Term Operating Reserve:
https://www.nationalgrid.com/sites/default/files/documents/STOR%20Standard%20Contract%20Terms%20Issue%2010%20%28Effective%20from%201%20April%202017%29%20%281%29_0.pdf

Fast Reserve:
https://www.nationalgrid.com/sites/default/files/documents/Fast%20Reserve%20Tender%20Rules%20and%20Standard%20Contact%20Terms%20-%20Effective%201%20April%202015.pdf

DRSC

Workgroup members raised some concerns that it wouldn't be clear for demand providers to follow the requirements as the DRSC was referring to other documents within it so the Proposer has amended the legal text following the meeting so it slots into the SCTs and where it does make reference (as sometimes it has to in order to avoid adding extra requirements into it) the requirements are clearer (in the Proposers view) and now easier to find/follow.

Following the discussions at the last GC0104 meeting the Proposer did the following:

GSP

Some Workgroup members were concerned around the definitions of EU Code User and EU Grid Supply Point in that if they modified their GSP (Grid Supply Point) and what would this mean for them.

The Proposer went away and considered the possibilities further and it was clarified by the Proposer that if an existing DNO were to upgrade a GSP (to the extent it became an EU GSP) it would be treated as a Distribution Facility (DCC definition) and that only the GSP would be treated as an EU GSP and the rest of the distribution system would not be treated as a (EU) distribution system as defined in DCC. The Proposer clarified that only the Articles in DCC that applied to Distribution Facilities would be applicable to the EU GSP.

TSO Consultation – Article 9 DCC

A Workgroup member raised concerns around Article 29(d) and whether the Proposer, as TSO has carried out a Consultation. The Proposer felt that the public

consultation included the TSOs and therefore a separate consultation was not necessary.

10 Summary of Workgroup Consultation responses

The Workgroup Consultation closed on the 29 March 2018 and received twelve responses. The full responses can be located in Annex 6. Please note that the response received by Western Power Distribution was not received by the Code Administrator ahead of the meeting held on the 4 April 2018 so it is not included within the summary document. The points raised within response have been addressed by the Proposer and Workgroup.

A presentation providing a summary the responses received can be located in Annex 7 and the discussions that the Workgroup had post Consultation can be located in section 11.

11 Workgroup Discussions following Workgroup Consultation

The GC0104 Workgroup met on the 4 April 2018 to discuss the eleven responses that were submitted in response to the Workgroup Consultation that closed on the 29 March 2018.

The Technical Secretary of the Workgroup talked through a high-level presentation of the responses received which can be located in Annex 7. It was noted that nine of the twelve responses stated that the solution proposed better facilitated the Grid Code objectives and that one respondent outlined that the Proposal was deficient in terms of technical detail which they would expect in this modification.

The Technical Secretary outlined that the respondents were generally supportive of the implementation approach outlined in the Consultation but she noted that there was a response from SSE Generation Ltd which stated that Directive 2015/1535 needed to be taken into account. It was noted that this issue had been raised at the CUSC Panel and Ofgem were requested to put in writing their position on the matter. The Technical Secretary stated that she would inform the GC0104 Workgroup of this position once received.

The Workgroup agreed that the main points for discussion as a result of the Consultation were Questions 9 and 10 and these were then discussed in more detail as outlined below.

Question 9: Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?

- **5/11** No comment
- **4/11** Further clarity required/alternative request
- **2/11** Fit for purpose/no issues

It was noted that Alan Creighton of Northern PowerGrid had submitted a Workgroup Consultation Alternative request as part of the Workgroup

Consultation. This can be located in Annex 6 with the full Consultation responses. The Workgroup discussed and reviewed the proposed legal text that had been put forward. It was explained, as outlined in the form submitted, that the legal text proposed by the Proposer in the Consultation would mean that an existing Grid Supply Point would be treated as an EU Grid Supply Point under the Grid Code and that it should not be treated as such.

The Proposer noted this interpretation when reviewing their proposed legal text and stated that there was the potential to amend their solution based on this feedback.

The Alternative request form can be located in Annex 6. More than fifty percent of the Workgroup supported this suggested alternative being developed and as such this proposed Alternative went forward as WACM1.

Following the Workgroup meeting that was held on the 4 April the Proposer and Proposer of WACM1 discussed the alternative further. The Proposer amended their solution to incorporate the feedback from the Workgroup and the Proposer of WACM1 withdrew their alternative.

Significant Modification Definition (WACM1)

Further to the initial Workgroup discussions (Section 9) on the Significant Modification Definition the Workgroup decided that they would like to raise an Alternative Proposal for the Authority to receive and assess. Alastair Frew agreed to be the Proposer of this proposed alternative which can be located in Annex 8.

All Workgroup members present on the 4 April stated that this potential alternative better facilitated the Grid Code objectives better than the baseline and therefore this became WACM2.

Due to WACM1 being withdrawn as outlined above this is now the only WACM being submitted to the Authority along with the Original for their consideration. Please see Table 1 for more information on the alternatives.

The Proposer of GC0104 stated that they would not alter their solution to the defect due to the fact that they felt that, In the proposer's view, it was not considered to be necessary or efficient to require Ofgem to make decisions in every case - while the Connection Codes do refer to NRA approval, any GB connection agreement in dispute can be referred to Ofgem under Transmission Licence Condition C9 'Functions of the Authority'.

The Proposer of this WACM stated that during the GC0102 Code Administrators Consultation comments were received suggesting that the proposed definition of Significant Modification did not fully represent the legal requirements of the network codes Requirements for Grid Connection of Generators (RfG) EU 2016/631 and Requirements for Grid Connection of High Voltage Direct Current Systems (HVDC) EU 2016/1447. The GC0102 proposal has progressed and is now with the Authority for final determination. This modification proposal GC0104 deals with the Network Code on Demand Connection (DCC) EU 2016/1388 which

has the same legal requirements as other two EU network code[2] and whilst initially the Original proposal was to use the same definition of Significant Modification as previously set in GC0102 the Original proposal has now been changed to partially match this Alternative proposal, however the majority of Workgroup members believed it did not cover all requirements. The Alternative proposal changed the definition of Significant Modification to be more representative of the legal requirements of the DCC and as a consequence the majority of Workgroup members believed it would also improve compliance with the RfG and HVDC requirements. More details on this can be located in the Alternative form at Annex 8 including the legal text proposed.

Table 1: WACMs

Proposed alternatives	Title	Workgroup Vote	WACM number		
1	Clarifying the application to existing Grid Supply Points	More than 50% agreed to take forward as formal alternative	**WACM1**	Withdrew following Proposer update to solution	**Withdrawn**
2	Significant Modification Definition	More than 50% agreed to take forward as formal alternative	**WACM2**	Continued as **WACM1** due to withdrawal of alternative above.	**WACM1**

Q10. Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.

- 1/11 ADE response to be reviewed
- 3/11 No comment
- 5/11 Yes plus one comment around DRSC A.2 - Excess of what is required in DCC? (ENWL)
- 2/11 No – Not enough detail to understand obligations, more documents to read rather than in one place. Obligations in DRSC could be put in SCTs to avoid this (Flextricity) No - Ancillary Service Agreement Governance an issue and also this modification should be the whole package and is not – does not reflect requirements (SSE)

The Workgroup reviewed the responses to question 10 above. It was noted by the Workgroup and Proposer that more could be done to assist in understanding the obligations. The Proposer agreed to produce Guidance on where all the documentation can be located and this can be found at Annex 2 The Proposer

[2] Set out in Article 4 of the three respective Regulations.

stated that moving or adding further information to the DRSC section would duplicate information and in addition would be more than required within the scope of this modification. The majority of Workgroup members were happy with the proposal for further guidance to be produced to assist Industry with the transition to the new requirements and improve the linkage between the SCTs and the DRSC. The DRSC was also updated following conversations between the Proposer and some stakeholders who would be using that section of the Grid Code in an effort to make it more user-friendly.

System Operation Guideline

A Workgroup member noted that there was a connection between the Demand Connection Code requirements and that of the System Operation Guideline and that once implemented into the Grid Code together this would provide the User with a picture of all the requirements. It was noted that a modification had not yet been raised to address the areas (Articles 155, 159 and 162) within SOGL that the Workgroup member stated needed to be done. Following this Workgroup meeting National Grid have raised a modification on the Pre-Qualification requirements. More information on this can be located in GC0114.

Distribution Code

The Distribution Code representative talked through the summary paper that they had produced following the responses received. This can be located in Annex 3. It was noted that all of the feedback received would be taken on board and that the representative would contact all of the respondents to talk through any points raised. The updated documents can be located in Annex 3.

12 Workgroup Vote

The Workgroup met on the 23 April 2018 to carry out the Workgroup Vote. The Workgroup voted that, by majority WACM1 better facilitates the Grid Code objectives.

Vote 1 – *does the original or WACM facilitate the objectives better than the Baseline?*

Vote recording guidelines:
"Y" = Yes
"N" = No
"-" = Neutral

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)?	Better facilitates AGCO (iii)?	Better facilitates AGCO (vi)?	Better facilitates AGCO (v)?	Overall (Y/N)
Mike Kay						
Original	-	-	-	Y	-	Y
WACM1	-	-	-	Y	N	Y
Voting Statement: The original and the WACM both enable the complete discharge of the DCC requirements. They have little other effect on the overall operation of the						

Grid and Distribution Codes. WACM1 introduces an unnecessary bureaucratic step that is already adequately and compliantly covered in the Transmission and Distribution licences.						
Timothy Moore						
Original	Y	Y	Y	N	-	Y
WACM1	Y	Y	Y	Y	-	y
Voting Statement: WACM 1 more clearly defines The Authorities responsibility for deciding if existing facilities will need comply with new European Connection Conditions. The original proposal is unclear, but it could be interpreted that it is NGET responsibility.						
Garth Graham						
Original	Y	Y	Y	N	-	Y
WACM1	Y	Y	Y	Y	-	Y
Voting Statement:						
Alan Creighton						
Original	Y	Y	Y	Y	-	Y
WACM1	Y	Y	Y	Y	-	Y
Voting Statement: Both the Original and the WACM1 are better than the baseline in that they implement the EU DCC Network Code, they promote competition in that they harmonise the provision of demand side service requirements and hence help improve overall efficiency.						
Alastair Frew						
Original	Y	Y	Y	N	-	Y
WACM1	Y	Y	Y	Y	-	Y
Voting Statement: The original does not fully discharge all the legal requirements of the European Regulations						

Rachel Woodbridge-Stocks						
Original	Y	Y	Y	Y	-	Y
WACM1	Y	Y	Y	Y	-	Y
Voting Statement: Both the Original Proposal and the WACM better facilitate the Grid Code objectives than the baseline as they both implement DCC, however, WACM1 seems to be a less efficient and practical implementation solution than the Original.						
Tim Ellingham						
Original	Y	Y	N	N	N	N
WACM1	Y	Y	Y	Y	Y	Y
Voting Statement: The original fails to accurately implement the EU code in relation to existing plant which would limit investment in existing plant impacting efficiency and potentially power levels leading to a decrease in security of supply. The original will also likely increase the number of referrals to the Authority.						
Saskia Barker						
Original	-	-	-	Y	-	Y
WACM1	-	-	-	Y	-	Y
Voting Statement: Both the original and WACM1 better facilitate the Grid Code Objectives as they both discharge the TSO's obligations under the DCC. That said, it is important that the implementation of these changes is sensible and that they are clearly articulated to DSR providers in clearer, more precise language in the appropriate places, for example guidance on a per service basis that is kept in the						

same place at the STCs for the service.

Graeme Vincent						
Original	Y	-	-	-	Y	Y
WACM1	Y	-	Y	Y	Y	Y
Voting Statement: Believe Original and WACM are better than baseline and WACM adds further clarity over original.						

Vote 2 – *Which option is the best?*

Workgroup Member	BEST Option?
Mike Kay	**Original**
Timothy Moore	**WACM1**
Garth Graham	**WACM1**
Alan Creighton	**WACM1**
Alastair Frew	**WACM1**
Tim Ellingham	**WACM1**
Saskia Barker	**WACM1**
Graeme Vincent	**WACM1**
Rachel WoodbridgeStocks	**Original**

13 Relevant Objectives - assessment by Proposer

Impact of the modification on the Grid Code Relevant Objectives:	
Relevant Objective	**Identified impact**
To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	**Positive**
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)	**Positive**
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	**Positive**
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; and	**Positive**
To promote efficiency in the implementation and administration of the Grid Code arrangements	**Neutral**

DCC is one of the eight EU Connection Codes which derive from the Third Energy Package legislation; focused on delivering security of supply; supporting the connection of new renewable plant; and increasing competition to lower end consumer costs. It therefore directly supports the first three Grid Code objectives.

Furthermore, this modification is to ensure GB compliance of EU legislation in a timely manner, which positively supports the fourth Grid Code applicable objective.

Impact of the modification on the Distribution Code Relevant Objectives:	
Relevant Objective	**Identified impact**
Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity.	**Neutral**

Facilitate competition in the generation and supply of electricity.	**Neutral**
Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators.	**Positive**
Promote efficiency in the implementation and administration of the Distribution Code.	**Neutral**
	Neutral

This modification is necessary to ensure GB compliance of EU legislation in a timely manner, which positively supports the third Distribution Code applicable objective.

14 Implementation

This modification must be in place to ensure the requirements of DCC are set out in the GB Grid and Distribution codes *by* two years from Entry into Force - 7 September 2016 – which means it will need to be in place by 7th September 2018.

It is therefore crucial that this work is concluded swiftly to allow the industry the maximum amount of time to consider what they need to do to arrange compliance.

Annex 1 Demand Response table

This table was circulated as produced below, by the Proposer (unchanged), to the GC0104 Workgroup for their views. A further option (3) was suggested by a Workgroup member and is included below:

Option	Advantages	Disadvantages	Timescales	How commerciality and compliance would fit
Technical requirements in Grid Code, commercial facilitation in contracts/C16	Fully transparent with a number of public consultations to develop	Not efficient to implement; still requires changes to contracts as well as Grid Code	Open Governance – would follow Grid Code process timescales (approximately 6 months). Other Grid code changes will be progressing at the same time though.	Commerciality – would go in contracts and refer parties to the Grid Code for technical requirements including compliance. It is envisaged that reciprocal arrangements would be required in the D Code. Putting it another way the commercial contract would set out the services required, a condition of the contract would then specify the technical and compliance requirements required of the Grid Code with similar arrangements in for the D Code.
		Not all demand users currently need to abide by Grid Code and are not CUSC parties– not user friendly		
Technical requirements and commercial facilitation in standard contract terms/C16	Simplifies arrangements; only requires changes to contracts	Not codified	Consultation process as set out in Licence, requires two 4 week periods of consultation followed by Ofgem approval.	Commerciality – commercial and technical requirements would all be in one contract.
	Requirements can't be changed by parties not affected by DCC			
	Demand Users only need to refer to their contract – easy to use.			

	Demand Users not made to comply with the Grid code where they didn't previously.			
Following circulation of the above from the Proposer the option below was suggested as an option by a Workgroup member				
Technical requirements in Grid Code, commercial facilitation in CUSC	Fully transparent with a number of public consultations for both the Grid Code and CUSC changes; which can be proposed (and owned) by Users, Citizen's Advice, any Materially Affected Party (plus groups repenting consumers, trade associations etc., can be designated a Materially Affected Party). Parties do not need to comply with all the Grid Code or CUSC obligations, just those relevant to connection and Demand Response (which means a level playing field for all parties).	[XYZ]	Open Governance / CACoP principles – would follow Grid Code and CUSC process timescales (approximately 6 months, although it can be much quicker, if needed). Other changes will be progressing at the same time though. Ofgem approval of all material changes to the technical or commercial arrangements.	Commerciality – would go in contract (as an Exhibit to the CUSC) be applicable to parties and refer parties to the Grid Code for technical requirements including compliance. This has been done for over 15 years in GB for similar matters and is a proven and robust approach. It is envisaged that reciprocal arrangements would be required in the D Code. Putting it another way the commercial contract (in the CUSC) would set out the services required, a condition of the contract would then specify the technical and compliance requirements required of the Grid Code with similar arrangements in for the D Code.

Annex 2 Grid Code Legal Text

This can be found separately uploaded to our website under Annex 2.

Please note that the draft legal text has been drafted on top of modifications GC0100-102 but that these modifications are yet to be approved by the Authority.

Annex 3 Distribution Code Legal Text

ADE

No direct comment on D Code text – but some of the comments re aggregators probably need reflecting in D Code approach.

Electricity North West

Question	Answer	D Code response
Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	No, agreed that DNOs do not manage frequency (b)(i) demand response system frequency control should be excluded. There is a presumption that very fast active power control is solely to manage frequency, is that definitely the case or are there other potential ? Also under a whole system approach couldn't DNOs/ DSOs procure services for transmission constraint management. These proposals should not prevent such developments if they are in the best interests of consumers.	Very fast active power control is defined in Article 2(21) as being in response to a frequency deviation. So for DCC compliance (ie in the immediate short term) it seems safe to assume this is not a DNO service. However there is nothing to stop such a service being developed in the future. If a DNO was procuring services on behalf of the TSO then the DSO would be acting as an aggregator and presumably would be able to either work under same regime as other aggregators contracted to the TSO, or possibly able to do this under its own DCC legal powers – but in this case it might be appropriate to modify the D Code and other distribution documentation to specifically cover this possibility.
Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	Yes, we do not agree with the proposed approach. The pro-forma document seems to request information that is not specified in Article 32(6). Implementation should focus on doing the minimum to ensure compliance not adding additional regulatory burdens.	Electricity North West provided a number of detailed comments on the proformas, particularly suggesting that the information went beyond what was required by the DCC. Whilst one or two items included in the form (such as MPAN) are not DCC requirements, this information is believed to be helpful and might well be required as terms of any contract. The documentation has been designed to be flexible and can easily be changed if some

		aspect is found to be inappropriate based on experience.

Flexitricity

Question	Answer	D Code response
Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	The default response time specified in DPC9.3.3.3 is in the frequency response range, rather than active or reactive power DSR range. A default of something along the lines of 5-10 minutes would make more sense. The data specified in DPC9.4.1 being specified one month in advance is fine, but must be implemented correctly for aggregated groups. If new units are added to a group, this should not bar the rest of that group from operation for example. The references to other pieces of EU legislation (EU 2016/631 etc) in the definition of 'Manufacture's information' in DPC9 should be more explicit so that providers are not being made to wade through EU legislation. The paperwork required from providers should be described clearly by the DNO procuring the service in the service contract, rather than sending the provider needing to be versed in EU legislation. There is no mention of aggregators or aggregation in the ECC that I could see, so if there are any, they are difficult to find.	Agree that 5s is too short a default. Suggest we set the default to 5 minutes. Agree with the intent. The phrase "or such other time as agreed" has been introduced where default timings are stated. This is a read across from the RfG into the DCC. It does envisage a regime where manufacturers are part of a certification programme – it is not yet anywhere near a working implementation for generation – let alone demand. However we believe we need to lay down a path for it.
Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is	There is no distinction necessary for HV and LV customers. Where is 'fully type tested' defined?	Noted with thanks.

no distinction necessary here for HV or LV customers?	The obligations in DSR3 are either excessively complex or poorly expressed. Who will be carrying out these tests for individual sites, how will it be verified? How much manufacturer involvement does ENA actually expect to have in this process? Will there be any incentive for manufacturers to participate, especially considering that DNO DSR is currently rare and made up mostly of short term contracts.	See comments above – it is a read across again from the RfG and possibly important for future compliance streamlining As above for now.
Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	The easiest way to do this is to have the compliance and documentation process be on a site by site or unit by unit basis, and then have a secondary process for assigning compliant, documented units or sites to aggregated groups. If the units are not tested and documented individually, the other units in an aggregated portfolio would be forced out of the market every time a new unit joins, or has a temporary outage.	Yes – in fact this is what were attempting to do: DSR3 needs to be completed for every unit – and these would be aggregated on DSR2. But happy to talk through this to use your experience to improve our approach.

SPEN – no specific D Code comments

Northern Powergrid

Question	Answer	D Code response
Legal Text Issues		
	Connection Point, Reactive Power, Demand Facility, Customer are all defined terms and should be capatalized and bold where used.	Agree. Corrected.
	Definition of Demand Unit - Would it be clearer to say what is in the scope of DPC9 ie all Demand Units, where there is a contract to provide demand side services (Is an appliance / device	The Scope statement DPC9.1.1. does this.

	only a Demand Unit when its contracted to provide Demand service) Do the dates relate to the procurement of the Demand Unit, or agreement of contracts to use that Demand Unit to provide a Demand service These dates don't look right 7 and 9 September	The DCC is clear that the critical date is the date the DU was connected to the network (or the contract for it was signed). Typo. Corrected.
	DPC9.1.1 - ... in general or to any appliance or devices that are not Demand Units	Not obvious quite what distinction is being sought or made here.
	DPC 9.3.1.2 - Don't quite see why for LV at least these wouldn't be 0.9 to 1.1 pu	Agree – the drafting was wrong. Now corrected.
	DPC 9.3.3.2(b) - didn't quite follow the 'or as will be deployed' part of this clause	It just really saying that the DNO will provide details of the communications protocols to be used – either between a single customer or to an aggregator. This might be more obvious now in the alternative version of the text.
	DPC9.4.1 Semicolons missing at end of lines	Agreed. Inserted
	DPC 9.4.3 and DPC9.4.4- ...Provider as appropriate must notify....	Agreed. Inserted
	DRUD intro note - Might it be better to use the term Demand Response Providers who are not individual Customers - or define aggregators? In the DCode, the term used is (as an undefined term) demand side service. DCC uses Demand Response Service Wondered if there was a consistent term emerging from ON that we should use. I can see that the intention isn't to append this to the DCode in any way, but consistency would be good.	Modified for this. This page is not legal text - it was just included to help the consultation – It is not expected to exist as part of the suite of documentation in the future.

	I s there a risk that commercial aggregators will focus only on the money so in the aggregator sentence should this say '...Distribution Code compliance (including full technical compliance)....' to stress the point.	D Code compliance is only technical – so this should not be necessary
	DSR 1 Part 1 - ...each phase of the..... phased is used earlier in the sentence Customer signature - Not checked with the G83 forms, but is the customers signature required here Demand facility- not premises Align the tops of columns Capitalize defined terms Operational Monitoring is not a defined term – possibly add note or footnote “where required by DSR agreement” or ref DPC9.3.3.6	Changed Yes Changed Changed Done Not clear that the reference is needed – this will be a key contractual part of the arrangements. Capital M changed to lower case.
	DSR1 Part 2 - are separate Operational Monitoring checks required for the Demand Facility and Demand Unit? as above just wondered about the acronym DSR Declaration: Not checked for consistency with G83 forms, but this text wouldn't be deleted - just not completed	A good question. This will probably depend on case by case basis. Generally it will probably be at the facility level - more operational experience necessary to inform this. Changed to contractual purposes This is identical to G83
	DSR 2 - Is there a need somewhere to define an Aggregator (GCode definition?)	It is not defined in the Grid Code. But the preamble to the proformas now explains that an aggregator is a Demand Service Provider for multiple Demand Facilities.

	Is a copy of this document required for each Demand Facility.....or is there one form per Demand Service Provider / Aggregator contract with a DNO? Is a customer signature needed Operational monitoring – add reference to DPC9.3.3.6? Is it the Demand Units that's failed or the Demand Service Provider / Aggregator who's failed? I can see how to populate this table for a Demand Facility ie with an MPAN. Are we also looking to capture details of each Demand Unit as well - if so this could probably be clearer on the form. Didn't quite follow this N/A - couldn't Manufacturers Information be used to demonstrate compliance with the Operation Range	It is envisaged one per aggregator per contract - hence the contract reference box at the top of the details Consistent with other forms. Changed to Aggregator As above this will need to be done DNO by DNO, contract by contract Valid point – amended. No -just the MPAN. It should be for the aggregator to ensure compliance of each facility/unit. This is a mistake. Corrected.
	DSR 3 - In DPC9 this is 180s rather than 5. might it be worth adding a footnote to explain where this would be N/A	Correct – now amended to refer to DPC9 Changed from NA to No.
	DSR 4 - Is this decommissioning of the DSR capability or the decommissioning of the contact to activate the DSR capability	Could be either – so forms cates for this.

RWE – no specific D Code comments

SP Generation– no specific D Code comments

SSE

Question	Answer	D Code response
Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	The approach to be followed by providers of demand response services should, according to the DCC, be harmonised. We see no recognition of this requirement for harmonisation by the Proposer of GC0104. Without this harmonisation there is a risk that DSR providers have to meet multiple requirements for the same demand modulation depending on whether it is provided to the relevant system operator or relevant TSO. As noted above, this lack of harmonisation in the GC0104 proposal will lead to increased costs for consumers, will not achieve the best social welfare outcome and will not be reasonable, proportionate or efficient.	Noted
Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	Given the total lack of detail in this consultation around what the 'Ancillary Services agreement' requires of aggregators; in terms of the DCC; it is difficult to say what the rights and obligations, in totality, are and, therefore, it is difficult to say if this has been suitability allowed for in the drafting of ECC and DCP9.	Noted
Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	Given that the DCC obligations are to be harmonised then so should the documentation; i.e. it should not matter whether the service is provided to the relevant system operator or the relevant TSO, in both cases the form to be completed should be the same and should only need to be completed once. Notwithstanding the above, we note that the General Data Protection Regulation (GDPR) is	There are different requirements for some T and D services. Moving to an identical approach could subject those customers only providing services to DNOs to unnecessary requirements. However the integration and harmonization of DSR services between T and D is a substantial part of the Open Networks Project WS1, and we expect that those developments will feed through into the

	due to be applicable in the near future. We notice that the draft installation document contains customer personal data – could the Proposer please confirm, in light of the GDPR obligations, that the proposed installation document is fully compliant with the GDPR obligations.	formal approaches over the next couple of years.

Also some of the comments on the Grid Code probably need reflecting in D Code approach.

UK Power Reserve

Question	Answer	D Code response
Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	Yes, although as the DNO-DSO transition evolves, they should not be precluded from future discussions.	Note and we agree.
Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	UKPR do not see any necessary distinction between LV and HV customers. At the moment, the nature of potential Demand Response services is unclear, but the proforma includes sufficient information.	Note and we agree.

WPD

Question	Answer	D Code response
Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control,	WPD broadly agrees with this distinction. However confusion may arise where a DNO implements a service on the behalf of the Transmission system operator (as will be trialled	Noted. This of course might suggest changes to the D Code drafting and approach. Given the developing nature of these services, and the Open Networks

recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	in the WPD RDP work with National Grid). This is also the case in the Power Potential project.	initiatives, it will be necessary to keep formal GB documentation under constant review – although of course the highest level and lightest touch approach will probably remain desirable.
Q6 Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	The current drafting explicitly allows for participation of aggregators and third parties. If anything the proposal favours third parties over direct customers as they have less onerous requirements in the pro-formas. WPD would encourage equal treatment of aggregators and direct customers.	Please see answer below to Legal Text Issues
Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	WPD agrees with the pro-forma approach subject to the comment in Q6. WPD agrees that there is no distinction necessary for HV and LV customers.	Noted.
Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	As per question 6, WPD would encourage the maximum alignment between compliance and documentation for aggregators or direct customers. For example the current pro-formas require more information on the specific Demand Units for individual customers over aggregators (Technology types, Manufacturers reference number…) Aggregators should be expected to provide the data expected of customers. In addition WPD believes that some of the requirements should be better defined to avoid confusion (for example is the modulated output value expected to be the Maximum or Minimum response capacity?). Finally the compliance checks must be reviewed with a view to the practicality of testing required. For example the current DPC9 wording allows	As per the response on Legal Text Issues below. In addition, as stated below, the logic her was striving to force Aggregators to make/take the same checks that the DNO would do itself – but without telling the Aggregator exactly what to do. Of course, some more direct instruction to the Aggregator could be put into the contract. We don't think the drafting to date has caught the concept of maximum or minimum response capacity (ie assuming this is a response band). Our initial response to this point is that it could be whatever was defined in the contract.

	significant flexibility for DNOs in terms of the manner in which modulation signals are sent and the response time. By contrast the pro forma requires customers to respond to a non-specific signal within 5 seconds	Agree that the 5s was a mistake. It has been changed to be either of the contract value or a default of 5 minutes.
Legal text issues	WPD has identified the following concerns around the legal text of DPC9. - The definition of Demand Service Provider include direct customers, however these are then treated as a distinct subset. For example DPC9.1.1and DPC 9.1.2 could be merged. This unnecessary distinction is carried throughout the text (9.2.1, 9.2.2….) - The definition of a Demand Unit may cause confusion for a system made up of components and sub-components. Clarification could be provided on the limits of the definition. For example in a BMS with multiple HVAC units each comprised of fans and pumps, what is a demand unit and what isn't? - Demand units including storage are exempt from DPC9. Further clarification may be required as many systems could be considered to have storage (a HVAC unit may claim to have thermal storage).	The original drafting attempts to apply equal treatment to end customers but where an aggregator is involved, the drafting of both DPC9 and the DRUD are attempting to set a framework where the aggregator undertakes the assurance of compliance by customers and then the aggregator passes this assurance on to the DNO (in form DSR 2). That is why the distinctions were made in the original drafting. Subsequently, and following discussions with a small number of aggregators, it does seem that combining the roles of Demand Service Provider and Customer would be a sensible simplification. We agree that Demand Unit could be a confusing concept -but the DCC only gives limited clarity in this regard. The working assumption we have had to date is that each or all the HVAC units under the control of a single controller would form the Demand Unit. The DCC of course does not cover storage – but our current view is that that is irrelevant. We should just treat it as the physics dictates. Also probably worth noting our assumption that storage in EU Network Terms means electricity storage as opposed to energy storage.

DGD

[the following new definitions to be added to the DGD section of the D Code]

Demand Facility	An installation under the control of a **Customer** where electrical energy is consumed and is connected at one or more ~~connection~~ **Connection Ppoints** to the **DNO's Distribution System**.
Demand Services Provider	A party who contracts with the **DNO** to provide a demand side service. The party might be a **Customer** contracting bilaterally with the **DNO** for the provision of services, or may be a third party providing an aggregated service from many individual **Customer**s. In the latter case there will be a specific contract for the provision of the services to the **DNO** and will include compliance by that third party with the requirements of DPC9 in relation to each **Demand Unit** included in the aggregated service.
Demand Unit	An appliance or a device whose **Active Power Demand** or **Reactive Power** production or consumption is being actively controlled by the **Customer** in whose **Demand Facility** it is installed and which has been commissioned on or after ~~9~~ 07 September 2019 in pursuance of a contract to this end with the **DNO**. Such an appliance or device commissioned before this date, but which has been materially altered will also be included in this definition. **Demand Units** of **Customers** where the **Customer** has concluded a final and binding contract for the purchase of a **Demand Unit** before 07 September 2018 are not included the scope of DPC9. The **Customer** must have notified the **DNO** of the conclusion of this final and binding contract by 07 March 2019. Any **Demand Unit** including storage, with the exception of a pumped storage **Power Generating Module**, as a component part is also excluded from the requirements of DPC9.
Manufacturers' Information	Information in suitable form provided by a manufacturer in order to demonstrate compliance with one or more of the requirements of the Distribution Code. Where equipment certificate(s) as defined in EU 2016/631, or 2016/1388 cover all or part of the relevant compliance points, the equipment certificate(s) demonstrate compliance without need for further evidence for those aspects within the scope of the equipment certificate

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[A new stand alone section of the Distribution Code]

DISTRIBUTION PLANNING AND CONNECTION CODE 9

DPC9 DEMAND SIDE SERVICES

DPC9.1 Scope

DPC9.1.1 This DPC9 applies to **Customers** in relation to their **Demand Units** that are providing any of the demand side services defined in DPC9.2. For the avoidance of doubt it does not apply to **Customers'** installations and **Equipment** in general.

DPC9.1.2 DPC9 also applies to **Demand Service Providers.**

DPC9.2 Demand Side Service Definitions

DPC9.2.1 **Active Power** control – a service where a **Customer** makes available the modulation by the **DNO** of **Demand** within the **Customer's Demand Facility**. This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**

DPC9.2.2 **Reactive Power** control – a service where a **Customer** makes available the modulation by the **DNO** of the **Customer's** reactive power production or consumption within the **Customer's Demand Facility**. This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**

DPC9.3 Technical Requirements

DPC9.3.1 Voltage Ranges

DPC9.3.1.1 Any **Demand Unit** must be able to remain connected and operating normally when the supply voltage is within the range of 0.90pu to 1.~~06pu~~ 10pu of nominal declared voltage.

~~DPC9.3.1.2 Any **Demand Unit** must be able to remain connected and operating normally for up to 15 minutes when the supply voltage is within the range of 1.06pu to 1.10pu of nominal declared voltage.~~

DPC9.3.2 Frequency Ranges

DPC9.3.2.1 The **System Frequency** could rise to 52Hz or fall to 47Hz in exceptional circumstances. Any **Demand Unit** must be able to remain connected and operating normally in accordance with the following table:

Frequency Range	Requirement
47Hz - 47.5Hz	Operation for a period of at least 20 seconds is required each time the **Frequency** is below 47.5Hz.

47.5Hz - 49.0Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is below 49.0Hz.
49.0Hz - 51Hz	Continuous operation is required
51Hz - 51.5Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is above 51Hz.
51.5Hz - 52Hz	Operation for a period of at least 15 minutes is required each time the **Frequency** is above 51.5Hz.

DPC9.3.2.2 **Demand Units** must remain connected and operating normally for rates of change of frequency up to $1Hzs^{-1}$.

DPC9.3.3 Modulation

DPC9.3.3.1 A **Demand Unit** or **Demand Units** must be capable controlling its **Demand** or **Reactive Power** production or consumption over the range specified in any contract with the **DNO**.

DPC9.3.3.2 **Demand Units** must be equipped to receive modulation instructions either directly, or indirectly via a **Demand Service Provider**, from the **DNO**.

a) **DNOs** currently are developing active network management approaches and there is no common standard for communication protocols.

b) The **DNO** will provide details of the method to be employed on a site by site basis, or as will be deployed between the **DNO** and the **Demand Service Provider**. Protocols currently in use between **DNOs** and **Customers** include simple current loop; DNP3; IEC 61850.

c) The **DNO** will agree with the **Customer** for each **Demand Facility**, or with the **Demand Service Provider** as appropriate, the protocol to be used.

d) By default if nothing it specified by the **DNO** then the interface will take the form of a simple binary output that can be operated by a simple switch or contactor. When the switch is closed the **Demand Unit** or **Demand Facility** can operate normally. When the switch is opened the **Demand Unit** will modulate its **Demand** (**Active Power** consumption or **Reactive Power** production or consumption) as required by the contract. The signal from the **Demand Unit** that is being switched can be either AC (maximum value 240 V) or DC (maximum value 110 V).

DPC9.3.3.3 The **DNO** will publish the standard response times it expects for the services it wishes to contract for. Having received the signal or command from the **DNO** the **Demand Unit** will modulate its behaviour to the full extent of the contract

within the standard response time, unless agreed otherwise with the **DNO**. In the absence of a specific published **DNO** requirement the response time will be ~~180 s~~5 minutes.

DPC9.3.3.4 The modulated behaviour will be maintained for the duration of the signal to do so from the **DNO** unless otherwise agreed with the **DNO**.

DPC9.3.3.5 If the modulation, or any part of it, ceases to be fully available for operation at any time, either temporarily or permanently, unless otherwise agreed with the **DNO** the **Customer**, or **Demand Service Provider** as appropriate, will notify the **DNO** without delay, and no more than 12 hours after the modulation ceases to be fully available.

DPC9.3.3.6 The **DNO** will advise what operational monitoring and/or metering is to be installed in a **Demand Facility**, or agreed with a **Demand Service Provider**. For **Demand Facilities** connected at **HV** the **DNO** in some cases will install the **DNO's** own telemetry which can form part of the necessary operational monitoring,

DPC9.4 Operational Notification

DPC9.4.1 As part of the contractual arrangements for the provision of demand side services to the **DNO**, the **Customer** must provide the following information one month, or other such time as agreed with **DNO**, in advance of the commencement of ~~a~~ the services contracted for demand side services:

a) Full contact details of the **Demand Facility** owner;~~.~~

b) The exact address and location of the **Demand Facility**;

c) The capacity of the modulated behaviour of the **Demand Unit** expressed in kW or kVAr (including production or consumption) as appropriate;~~.~~

d) Confirmation that the **Demand Unit** complies with the technical and modulation requirements of DPC9.3;

e) The name and contact details of the **Demand Service Provider** if the **Customer** has contracted with a **Demand Service Provider** for the provision of the demand side services;~~.~~

f) For **Customers** providing demand side services via a **Demand Service Provider**, the information above should be submitted to the **Demand Service Provider**, who in turn will submit it to the **DNO** in aggregated form;~~.~~

g) The above information must be submitted for each and every **Demand Unit.**

DPC9.4.2 The above information, together with the statement of compliance required by DPC9.5.1.4 below shall be submitted by either the **Customer**, or **Demand Services Provider** as appropriate, on the proforma provided by the **DNO** for that purpose.

DPC9.4.3 The **Customer** or **Demand Services Provider,** as appropriate, must notify the **DNO** of any~~Any~~ planned change or modification to the capabilities of the **Demand Unit** must be notified at least one month in advance unless agreed otherwise with~~to~~ the **DNO**.

DPC9.4.4 The **Customer** or **Demand Services Provider,** as appropriate, must notify the **DNO** of any ~~Any~~ unplanned incident or failure of a **Demand Unit** ~~should be notified to the DNO~~ immediately, which means within the same day, unless otherwise agreed with the **DNO**.

DPC9.4.5 In the case of an aggregated service, the **Demand Service Provider** must notify the **DNO** of any planned changes to the specification and availability of the contracted service at least one month in advance of the planned implementation date.

DPC9.4.6 In the case of an aggregated service, any unplanned incident or failure of the contracted service should be notified to the **DNO** immediately, which means within the same day.

DPC9.4.7 For any **Demand Facility** connected at **HV**, the demand side services cannot be called upon until the **DNO** has issued a final operational notice to the **Customer** responsible for the **Demand Facility**. The **DNO** will issue the final operational notice to the customer on receipt of the complete information required in DPC9.4.1. The **DNO** will recognize practical difficulties in completing all appropriate tests for confirmation of compliance in specific situations and will not unreasonably withhold the issuing of the final operation notification.

DPC9.5 Compliance

DPC9.5.1 Where the **Customer** has a direct contract with the **DNO**:

DPC9.5.1.1 Where a **Customer** has contracted directly with the **DNO** for demand side services, the **Customer** is wholly responsible for the compliance of the **Customer's Demand Units** with the requirements of this DPC9 and for the conduct of any tests necessary to demonstrate compliance.

DPC9.5.1.2 The **Customer** must demonstrate the modulation of behaviour of the **Demand Unit** on receipt of the appropriate signal (or simulated sign) from the **DNO**. Where appropriate such tests can be undertaken off site, for example by the manufacturer.

DPC9.5.1.3 To the extent that the **Customer** requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.

DPC9.5.1.4 The **Customer** will supply to the **DNO** a statement of compliance detailing how compliance with the relevant parts of DPC9 has been demonstrated. The statement can include **Manufacturer's Information** to support the demonstration of compliance.

DPC9.5.2 Where the **DNO** has contracted with a **Demand Service Provider** who is not a single **Customer** and is aggregating a response from many **Customer**s:

DPC9.5.2.1 Where the **DNO** has contracted with a **Demand Service Provider** it is the responsibility of that **Demand Service Provider** to ensure that relevant **Demand Units** comply with DPC9 and are also responsible for any necessary tests etc needed to demonstrate compliance.

DPC9.5.2.2 The **Demand Service Provider** must demonstrate the modulation of behaviour of **Demand Unit**s on receipt of the appropriate signal (or simulated sign) from the **DNO**. Where appropriate such tests can be undertaken off site, for example by the manufacturer and aggregated by the **Demand Service Provider** .

DPC9.5.2.3 To the extent that the **Demand Service Provider** requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.

DPC9.5.2.4 The **Demand Service Provider** will provide a statement of compliance detailing how the **Demand Service Provider** has ascertained that the **Demand Unit**s that it is using to provide demand side services to the **DNO** are compliant with the requirements of this DPC9.

DPC9.5.3 The **DNO** may require the **Customer** or **Demand Service Provider** to repeat compliance tests in accordance with a plan, or following any modification or failure of the **Demand Unit** to perform as required.

DGD
[the following new definitions to be added to the DGD section of the D Code]

Demand Facility	An installation under the control of a **Customer** where electrical energy is consumed and is connected at one or more **Connection Point**s to the **DNO's Distribution System**.
Demand Services Provider	A party who contracts with the **DNO** to provide a demand side service. The party might be a **Customer** contracting bilaterally with the **DNO** for the provision of services, or may be a third party providing an aggregated service from many individual **Customer**s. In the latter case there will be a specific contract for the provision of the services to the **DNO** and will include compliance by that third party with the requirements of DPC9 in relation to each **Demand Unit** included in the aggregated service.
Demand Unit	An appliance or a device whose **Active Power Demand** or **Reactive Power** production or consumption is being actively controlled by the **Customer** in whose **Demand Facility** it is installed and which has been commissioned on or after 07 September 2019 in pursuance of a contract to this end with the **DNO**. Such an appliance or device commissioned before this date, but which has been materially altered will also be included in this definition. **Demand Units** of **Customers** where the **Customer** has concluded a final and binding contract for the purchase of a **Demand Unit** before 07 September 2018 are not included the scope of DPC9. The **Customer** must have notified the **DNO** of the conclusion of this final and binding contract by 07 March 2019. Any **Demand Unit** including storage, with the exception of a pumped storage **Power Generating Module**, as a component part is also excluded from the requirements of DPC9.
Manufacturers' Information	Information in suitable form provided by a manufacturer in order to demonstrate compliance with one or more of the requirements of the Distribution Code. Where equipment certificate(s) as defined in EU 2016/631, or 2016/1388 cover all or part of the relevant compliance points, the equipment certificate(s) demonstrate compliance without need for further evidence for those aspects within the scope of the equipment certificate

[A new stand alone section of the Distribution Code]

DISTRIBUTION PLANNING AND CONNECTION CODE 9

DPC9 DEMAND SIDE SERVICES

DPC9.1 Scope

DPC9.1.1 This DPC9 applies to **Customers** in relation to their **Demand Units** that are providing any of the demand side services defined in DPC9.2. For the avoidance of doubt it does not apply to **Customers'** installations and **Equipment** in general.

DPC9.1.2 DPC9 also applies to **Demand Service Providers.**

DPC9.2 Demand Side Service Definitions

DPC9.2.1 **Active Power** control – a service where a **Customer** makes available the modulation by the **DNO** of **Demand** within the **Customer's Demand Facility**. This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**

DPC9.2.2 **Reactive Power** control – a service where a **Customer** makes available the modulation by the **DNO** of the **Customer's** reactive power production or consumption within the **Customer's Demand Facility**. This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**

DPC9.3 Technical Requirements

DPC9.3.1 Voltage Ranges

DPC9.3.1.1 Any **Demand Unit** must be able to remain connected and operating normally when the supply voltage is within the range of 0.90pu to 1.10pu of nominal declared voltage.

DPC9.3.2 Frequency Ranges

DPC9.3.2.1 The **System Frequency** could rise to 52Hz or fall to 47Hz in exceptional circumstances. Any **Demand Unit** must be able to remain connected and operating normally in accordance with the following table:

Frequency Range	Requirement
47Hz - 47.5Hz	Operation for a period of at least 20 seconds is required each time the **Frequency** is below 47.5Hz.
47.5Hz - 49.0Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is below 49.0Hz.

49.0Hz - 51Hz	Continuous operation is required
51Hz - 51.5Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is above 51Hz.
51.5Hz - 52Hz	Operation for a period of at least 15 minutes is required each time the **Frequency** is above 51.5Hz.

DPC9.3.2.2 **Demand Units** must remain connected and operating normally for rates of change of frequency up to $1Hzs^{-1}$.

DPC9.3.3 Modulation

DPC9.3.3.1 A **Demand Unit** or **Demand Units** must be capable controlling its **Demand** or **Reactive Power** production or consumption over the range specified in any contract with the **DNO**.

DPC9.3.3.2 **Demand Units** must be equipped to receive modulation instructions either directly, or indirectly via a **Demand Service Provider**, from the **DNO**.

a) **DNOs** currently are developing active network management approaches and there is no common standard for communication protocols.

b) The **DNO** will provide details of the method to be employed on a site by site basis, or as will be deployed between the **DNO** and the **Demand Service Provider**. Protocols currently in use between **DNOs** and **Customers** include simple current loop; DNP3; IEC 61850.

c) The **DNO** will agree with the **Customer** for each **Demand Facility**, or with the **Demand Service Provider** as appropriate, the protocol to be used.

d) By default if nothing it specified by the **DNO** then the interface will take the form of a simple binary output that can be operated by a simple switch or contactor. When the switch is closed the **Demand Unit** or **Demand Facility** can operate normally. When the switch is opened the **Demand Unit** will modulate its **Demand** (**Active Power** consumption or **Reactive Power** production or consumption) as required by the contract. The signal from the **Demand Unit** that is being switched can be either AC (maximum value 240 V) or DC (maximum value 110 V).

DPC9.3.3.3 The **DNO** will publish the standard response times it expects for the services it wishes to contract for. Having received the signal or command from the **DNO** the **Demand Unit** will modulate its behaviour to the full extent of the contract within the standard response time, unless agreed otherwise with the **DNO**. In the absence of a specific published **DNO** requirement the response time will be 5 minutes.

DPC9.3.3.4 The modulated behaviour will be maintained for the duration of the signal to do so from the **DNO** unless otherwise agreed with the **DNO**.

DPC9.3.3.5 If the modulation, or any part of it, ceases to be fully available for operation at any time, either temporarily or permanently, unless otherwise agreed with the **DNO** the **Customer**, or **Demand Service Provider** as appropriate, will notify the **DNO** without delay, and no more than 12 hours after the modulation ceases to be fully available.

DPC9.3.3.6 The **DNO** will advise what operational monitoring and/or metering is to be installed in a **Demand Facility**, or agreed with a **Demand Service Provider**. For **Demand Facilities** connected at **HV** the **DNO** in some cases will install the **DNO's** own telemetry which can form part of the necessary operational monitoring,

DPC9.4 Operational Notification

DPC9.4.1 As part of the contractual arrangements for the provision of demand side services to the **DNO**, the **Customer** must provide the following information one month, or other such time as agreed with **DNO**, in advance of the commencement of the services contracted for demand side services:

a) Full contact details of the **Demand Facility** owner;

b) The exact address and location of the **Demand Facility**;

c) The capacity of the modulated behaviour of the **Demand Unit** expressed in kW or kVAr (including production or consumption) as appropriate;

d) Confirmation that the **Demand Unit** complies with the technical and modulation requirements of DPC9.3;

e) The name and contact details of the **Demand Service Provider** if the **Customer** has contracted with a **Demand Service Provider** for the provision of the demand side services;

f) For **Customers** providing demand side services via a **Demand Service Provider**, the information above should be submitted to the **Demand Service Provider**, who in turn will submit it to the **DNO** in aggregated form;

g) The above information must be submitted for each and every **Demand Unit.**

DPC9.4.2 The above information, together with the statement of compliance required by DPC9.5.1.4 below shall be submitted by either the **Customer**, or **Demand Services Provider** as appropriate, on the proforma provided by the **DNO** for that purpose.

DPC9.4.3 The **Customer** or **Demand Services Provider,** as appropriate, must notify the **DNO** of any planned change or modification to the capabilities of the **Demand Unit** must be notified at least one month in advance unless agreed otherwise with the **DNO**.

DPC9.4.4 The **Customer** or **Demand Services Provider,** as appropriate, must notify the **DNO** of any unplanned incident or failure of a **Demand Unit** immediately, which means within the same day, unless otherwise agreed with the **DNO**.

DPC9.4.5 In the case of an aggregated service, the **Demand Service Provider** must notify the **DNO** of any planned changes to the specification and availability of the contracted service at least one month in advance of the planned implementation date.

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DPC9.4.7 For any **Demand Facility** connected at **HV**, the demand side services cannot be called upon until the **DNO** has issued a final operational notice to the **Customer** responsible for the **Demand Facility**. The **DNO** will issue the final operational notice to the customer on receipt of the complete information required in DPC9.4.1. The **DNO** will recognize practical difficulties in completing all appropriate tests for confirmation of compliance in specific situations and will not unreasonably withhold the issuing of the final operation notification.

DPC9.5 Compliance

DPC9.5.1 Where the **Customer** has a direct contract with the **DNO**:

DPC9.5.1.1 Where a **Customer** has contracted directly with the **DNO** for demand side services, the **Customer** is wholly responsible for the compliance of the **Customer's Demand Units** with the requirements of this DPC9 and for the conduct of any tests necessary to demonstrate compliance.

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DPC9.5.1.3 To the extent that the **Customer** requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.

DPC9.5.1.4 The **Customer** will supply to the **DNO** a statement of compliance detailing how compliance with the relevant parts of DPC9 has been demonstrated. The statement can include **Manufacturer's Information** to support the demonstration of compliance.

DPC9.5.2 Where the **DNO** has contracted with a **Demand Service Provider** who is not a single **Customer** and is aggregating a response from many **Customer**s:

DPC9.5.2.1 Where the **DNO** has contracted with a **Demand Service Provider** it is the responsibility of that **Demand Service Provider** to ensure that relevant **Demand Units** comply with DPC9 and are also responsible for any necessary tests etc needed to demonstrate compliance.

DPC9.5.2.2 The **Demand Service Provider** must demonstrate the modulation of behaviour of **Demand Unit**s on receipt of the appropriate signal (or simulated sign) from the **DNO**. Where appropriate such tests can be undertaken off site, for example by the manufacturer and aggregated by the **Demand Service Provider** .

DPC9.5.2.3 To the extent that the **Demand Service Provider** requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.

DPC9.5.2.4 The **Demand Service Provider** will provide a statement of compliance detailing how the **Demand Service Provider** has ascertained that the **Demand Unit**s that it is using to provide demand side services to the **DNO** are compliant with the requirements of this DPC9.

DPC9.5.3 The **DNO** may require the **Customer** or **Demand Service Provider** to repeat compliance tests in accordance with a plan, or following any modification or failure of the **Demand Unit** to perform as required.

DGD

[the following new definitions to be added to the DGD section of the D Code]

Demand Facility	An installation under the control of a **Customer** where electrical energy is consumed and is connected at one or more ~~connection~~ **Connection Ppoints** to the **DNO's Distribution System**.
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Demand Unit	An appliance or a device whose **Active Power Demand** or **Reactive Power** production or consumption is being actively controlled by the **Customer** in whose **Demand Facility** it is installed and which has been commissioned on or after ~~9~~ 07 September 2019 in pursuance of a contract to this end with the **DNO**. Such an appliance or device commissioned before this date, but which has been materially altered will also be included in this definition. **Demand Units** of **Customers** where the **Customer** has concluded a final and binding contract for the purchase of a **Demand Unit** before 07 September 2018 are not included the scope of DPC9. The **Customer** must have notified the **DNO** of the conclusion of this final and binding contract by 07 March 2019. Any **Demand Unit** including storage, with the exception of a pumped storage **Power Generating Module**, as a component part is also excluded from the requirements of DPC9.
Manufacturers' Information	Information in suitable form provided by a manufacturer in order to demonstrate compliance with one or more of the requirements of the Distribution Code. Where equipment certificate(s) as defined in EU 2016/631, or 2016/1388 cover all or part of the relevant compliance points, the equipment certificate(s) demonstrate compliance without need for further evidence for those aspects within the scope of the equipment certificate

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[A new ~~stand alone~~stand-alone section of the Distribution Code]

DISTRIBUTION PLANNING AND CONNECTION CODE 9

DPC9 DEMAND SIDE SERVICES

DPC9.1 Scope

DPC9.1.1 This DPC9 applies to **Demand Service Providers** and **Customers** (both in their own right and acting as **Demand Service Providers)** in relation to their **Demand Units** that are providing any of the demand side services defined in DPC9.2. For the avoidance of doubt it does not apply to **Customers'** installations and **Equipment** in general.

~~DPC9.1.2 DPC9 also applies to **Demand Service Providers.**~~

DPC9.2 Demand Side Service Definitions

DPC9.2.1 **Active Power** control – a service where a ~~**Customer**~~ **Demand Service Provider** makes available the modulation by the **DNO** of **Demand** within ~~the~~ one or more **Customer~~'~~s' Demand Facilities~~y~~. ~~This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**~~

DPC9.2.2 **Reactive Power** control – a service where a ~~**Customer**~~ **Demand Service Provider** makes available the modulation by the **DNO** of ~~the~~ one or more **Customer~~'~~s'** reactive power production or consumption within ~~the~~ one or more **Customer~~'~~s' Demand Facilities~~y~~. ~~This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**~~

DPC9.3 Technical Requirements

DPC9.3.1 Voltage Ranges

DPC9.3.1.1 Any **Demand Unit** must be able to remain connected and operating normally when the supply voltage is within the range of 0.90pu to 1.~~06pu~~ 10pu of nominal declared voltage.

~~DPC9.3.1.2 Any **Demand Unit** must be able to remain connected and operating normally for up to 15 minutes when the supply voltage is within the range of 1.06pu to 1.10pu of nominal declared voltage.~~

DPC9.3.2 Frequency Ranges

DPC9.3.2.1 The **System Frequency** could rise to 52Hz or fall to 47Hz in exceptional circumstances. Any **Demand Unit** must be able to remain connected and operating normally in accordance with the following table:

Frequency Range	Requirement

47Hz - 47.5Hz	Operation for a period of at least 20 seconds is required each time the **Frequency** is below 47.5Hz.
47.5Hz - 49.0Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is below 49.0Hz.
49.0Hz - 51Hz	Continuous operation is required
51Hz - 51.5Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is above 51Hz.
51.5Hz - 52Hz	Operation for a period of at least 15 minutes is required each time the **Frequency** is above 51.5Hz.

DPC9.3.2.2 **Demand Units** must remain connected and operating normally for rates of change of frequency up to 1 Hzs^{-1}.

DPC9.3.3 Modulation

DPC9.3.3.1 A **Demand Unit** or **Demand Units** must be capable controlling its **Demand** or **Reactive Power** production or consumption over the range specified in any contract with the **DNO**.

DPC9.3.3.2 **Demand Units** must be equipped to receive modulation instructions either directly, or indirectly via a **Demand Service Provider**, from the **DNO**.

a) **DNOs** currently are developing active network management approaches and there is no common standard for communication protocols.

b) The **DNO** will provide details of the method to be employed on a site by site basis, or as will be deployed between the **DNO** and the **Demand Service Provider**. Protocols currently in use between **DNOs** and **Demand Service Providers** ~~**Customers**~~ include simple current loop; DNP3; IEC 61850.

c) The **DNO** will agree with the ~~**Customer** for each **Demand Facility**, or with the~~ **Demand Service Provider** ~~as appropriate,~~ the protocol to be used.

d) By default if nothing it specified by the **DNO** then the interface will take the form of a simple binary output that can be operated by a simple switch or contactor. When the switch is closed the **Demand Unit** or **Demand Facility** can operate normally. When the switch is opened the **Demand Unit** will modulate its **Demand** (**Active Power** consumption or **Reactive Power** production or consumption) as required by the

contract. The signal from the **Demand Unit** that is being switched can be either AC (maximum value 240 V) or DC (maximum value 110 V).

DPC9.3.3.3 The **DNO** will publish the standard response times it expects for the services it wishes to contract for. Having received the signal or command from the **DNO** the **Demand Unit** will modulate its behaviour to the full extent of the contract within the standard response time, unless agreed otherwise with the **DNO**. In the absence of a specific published **DNO** requirement the response time will be ~~180 s~~5 minutes.

DPC9.3.3.4 The modulated behaviour will be maintained for the duration of the signal to do so from the **DNO** unless otherwise agreed with the **DNO**.

DPC9.3.3.5 If the modulation, or any part of it, ceases to be fully available for operation at any time, either temporarily or permanently, unless otherwise agreed with the **DNO** the ~~**Customer**, or~~ **Demand Service Provider** ~~as appropriate,~~ will notify the **DNO** without delay, and no more than 12 hours after the modulation ceases to be fully available.

DPC9.3.3.6 The **DNO** will advise what operational monitoring and/or metering is to be installed in a **Demand Facility**, or agreed with a **Demand Service Provider**. For **Demand Facilities** connected at **HV** the **DNO** in some cases will install the **DNO's** own telemetry which can form part of the necessary operational monitoring,

DPC9.4 Operational Notification

DPC9.4.1 As part of the contractual arrangements for the provision of demand side services to the **DNO**, the **Demand Service Provider** ~~**Customer**~~ must provide the following information one month, or other such time as agreed with **DNO**, in advance of the commencement of the services ~~a~~ contracted for demand side services:

a) Full contact details of the **Demand Service Provider**

~~a)~~b) Full contact details of the **Demand Facility** owner;~~.~~

~~b)~~c) The exact address and location of the **Demand Facility**;

~~c)~~d) The capacity of the modulated behaviour of the **Demand Unit** expressed in kW or kVAr (including production or consumption) as appropriate;~~.~~

~~d)~~e) Confirmation that the **Demand Unit** complies with the technical and modulation requirements of DPC9.3;

~~e) The name and contact details of the **Demand Service Provider** if the **Customer** has contracted with a **Demand Service Provider** for the provision of the demand side services.~~

~~f) For **Customers** providing demand side services via a **Demand Service Provider**, the information above should be submitted to the **Demand Service Provider**, who in turn will submit it to the **DNO** in aggregated form.~~

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g)f)The above information must be submitted for each and every **Demand Unit.**

DPC9.4.2 Unless agreed otherwise with the **DNO** ~~T~~the above information, together with the statement of compliance required by DPC9.5.~~1.~~4 below shall be submitted by ~~either~~ the ~~**Customer**, or~~ **Demand Services Provider** ~~as appropriate,~~ on the proforma provided by the **DNO** for that purpose.

DPC9.4.3 Unless agreed otherwise with the **DNO** The **Demand Services Provider** must notify the **DNO** of any~~Any~~ planned change or modification to the capabilities of the **Demand Unit** ~~must be notified~~ at least one month in advance. ~~to the **DNO**~~.

DPC9.4.4 Unless otherwise agreed with the **DNO** the **Demand Services Provider** must notify the **DNO** of any ~~Any~~ unplanned incident or failure of a **Demand Unit** ~~should be notified to the **DNO**~~ immediately, which means within the same day.

~~DPC9.4.5 In the case of an aggregated service, the **Demand Service Provider** must notify the **DNO** of any planned changes to the specification and availability of the contracted service at least one month in advance of the planned implementation date.~~

DPC9.4.~~6~~5 In the case of an aggregated service, any unplanned incident or failure of the contracted service should be notified to the **DNO** immediately, which means within the same day.

DPC9.4.~~7~~6 For any **Demand Facility** connected at **HV**, the demand side services cannot be called upon until the **DNO** has issued a final operational notice to the **Customer** responsible for the **Demand Facility**. The **DNO** will issue the final operational notice to the customer on receipt of the complete information required in DPC9.4.1. The **DNO** will recognize practical difficulties in completing all appropriate tests for confirmation of compliance in specific situations and will not unreasonably withhold the issuing of the final operation notification.

DPC9.5 Compliance

~~DPC9.5.1 Where the **Customer** has a direct contract with the **DNO**:~~

DPC9.5.~~1.~~1 The ~~Where a **Customer** has contracted directly with the **DNO** for demand side services, the **Customer**~~ **Demand Service Provider** is wholly responsible for the compliance of the **Customer's Demand Units** with the requirements of this DPC9 and for the conduct of any tests necessary to demonstrate compliance.

DPC9.5.~~1.~~2 The **Demand Service Provider** ~~**Customer**~~ must demonstrate the modulation of behaviour of the **Demand Units** on receipt of the appropriate signal (or simulated sign) from the **DNO**. Where appropriate such tests can be undertaken off site, for example by the manufacturer.

DPC9.5.~~1.~~3 To the extent that the **Demand Service Provider** ~~**Customer**~~ requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.

DPC9.5.~~1.~~4 The **Demand Service Provider** ~~**Customer**~~ will supply to the **DNO** a statement of compliance detailing how compliance with the relevant parts of DPC9 has

been demonstrated. The statement can include **Manufacturer's Information** to support the demonstration of compliance.

~~DPC9.5.2 Where the **DNO** has contracted with a **Demand Service Provider** who is not a single **Customer** and is aggregating a response from many **Customer**s:~~

~~DPC9.5.2.1 Where the **DNO** has contracted with a **Demand Service Provider** it is the responsibility of that **Demand Service Provider** to ensure that relevant **Demand Units** comply with DPC9 and are also responsible for any necessary tests etc needed to demonstrate compliance.~~

~~DPC9.5.2.2 The **Demand Service Provider** must demonstrate the modulation of behaviour of **Demand Unit**s on receipt of the appropriate signal (or simulated sign) from the **DNO**. Where appropriate such tests can be undertaken off site, for example by the manufacturer and aggregated by the **Demand Service Provider** .~~

~~DPC9.5.2.3 To the extent that the **Demand Service Provider** requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.~~

~~DPC9.5.2.4 The **Demand Service Provider** will provide a statement of compliance detailing how the **Demand Service Provider** has ascertained that the **Demand Unit**s that it is using to provide demand side services to the **DNO** are compliant with the requirements of this DPC9.~~

DPC9.5.~~3~~5 The **DNO** may require the ~~**Customer** or~~ **Demand Service Provider** to repeat compliance tests in accordance with a plan, or following any modification or failure of the **Demand Unit** to perform as required.

DGD
[the following new definitions to be added to the DGD section of the D Code]

Demand Facility	An installation under the control of a **Customer** where electrical energy is consumed and is connected at one or more **Connection Point**s to the **DNO's Distribution System**.
Demand Services Provider	A party who contracts with the **DNO** to provide a demand side service. The party might be a **Customer** contracting bilaterally with the **DNO** for the provision of services, or may be a third party providing an aggregated service from many individual **Customer**s. In the latter case there will be a specific contract for the provision of the services to the **DNO** and will include compliance by that third party with the requirements of DPC9 in relation to each **Demand Unit** included in the aggregated service.
Demand Unit	An appliance or a device whose **Active Power Demand** or **Reactive Power** production or consumption is being actively controlled by the **Customer** in whose **Demand Facility** it is installed and which has been commissioned on or after 07 September 2019 in pursuance of a contract to this end with the **DNO**. Such an appliance or device commissioned before this date, but which has been materially altered will also be included in this definition. **Demand Units** of **Customers** where the **Customer** has concluded a final and binding contract for the purchase of a **Demand Unit** before 07 September 2018 are not included the scope of DPC9. The **Customer** must have notified the **DNO** of the conclusion of this final and binding contract by 07 March 2019. Any **Demand Unit** including storage, with the exception of a pumped storage **Power Generating Module**, as a component part is also excluded from the requirements of DPC9.
Manufacturers' Information	Information in suitable form provided by a manufacturer in order to demonstrate compliance with one or more of the requirements of the Distribution Code. Where equipment certificate(s) as defined in EU 2016/631, or 2016/1388 cover all or part of the relevant compliance points, the equipment certificate(s) demonstrate compliance without need for further evidence for those aspects within the scope of the equipment certificate

[A new stand-alone section of the Distribution Code]

DISTRIBUTION PLANNING AND CONNECTION CODE 9

DPC9 DEMAND SIDE SERVICES

DPC9.1 Scope

DPC9.1.1 This DPC9 applies to **Demand Service Providers** and **Customers** (both in their own right and acting as **Demand Service Providers)** in relation to their **Demand Units** that are providing any of the demand side services defined in DPC9.2. For the avoidance of doubt it does not apply to **Customers'** installations and **Equipment** in general.

DPC9.2 Demand Side Service Definitions

DPC9.2.1 **Active Power** control – a service where a **Demand Service Provider** makes available the modulation by the **DNO** of **Demand** within one or more **Customers' Demand Facilities**.

DPC9.2.2 **Reactive Power** control – a service where a **Demand Service Provider** makes available the modulation by the **DNO** of one or more **Customers'** reactive power production or consumption within one or more **Customers' Demand Facilities**.

DPC9.3 Technical Requirements

DPC9.3.1 Voltage Ranges

DPC9.3.1.1 Any **Demand Unit** must be able to remain connected and operating normally when the supply voltage is within the range of 0.90pu to 1.10pu of nominal declared voltage.

DPC9.3.2 Frequency Ranges

DPC9.3.2.1 The **System Frequency** could rise to 52Hz or fall to 47Hz in exceptional circumstances. Any **Demand Unit** must be able to remain connected and operating normally in accordance with the following table:

Frequency Range	Requirement
47Hz - 47.5Hz	Operation for a period of at least 20 seconds is required each time the **Frequency** is below 47.5Hz.
47.5Hz - 49.0Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is below 49.0Hz.
49.0Hz - 51Hz	Continuous operation is required

51Hz - 51.5Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is above 51Hz.
51.5Hz - 52Hz	Operation for a period of at least 15 minutes is required each time the **Frequency** is above 51.5Hz.

DPC9.3.2.2 **Demand Units** must remain connected and operating normally for rates of change of frequency up to 1 Hzs^{-1}.

DPC9.3.3 Modulation

DPC9.3.3.1 A **Demand Unit** or **Demand Units** must be capable controlling its **Demand** or **Reactive Power** production or consumption over the range specified in any contract with the **DNO**.

DPC9.3.3.2 **Demand Units** must be equipped to receive modulation instructions either directly, or indirectly via a **Demand Service Provider**, from the **DNO**.

a) **DNOs** currently are developing active network management approaches and there is no common standard for communication protocols.

b) The **DNO** will provide details of the method to be employed on a site by site basis, or as will be deployed between the **DNO** and the **Demand Service Provider**. Protocols currently in use between **DNOs** and **Demand Service Providers** include simple current loop; DNP3; IEC 61850.

c) The **DNO** will agree with the **Demand Service Provider** the protocol to be used.

d) By default if nothing it specified by the **DNO** then the interface will take the form of a simple binary output that can be operated by a simple switch or contactor. When the switch is closed the **Demand Unit** or **Demand Facility** can operate normally. When the switch is opened the **Demand Unit** will modulate its **Demand** (**Active Power** consumption or **Reactive Power** production or consumption) as required by the contract. The signal from the **Demand Unit** that is being switched can be either AC (maximum value 240 V) or DC (maximum value 110 V).

DPC9.3.3.3 The **DNO** will publish the standard response times it expects for the services it wishes to contract for. Having received the signal or command from the **DNO** the **Demand Unit** will modulate its behaviour to the full extent of the contract within the standard response time, unless agreed otherwise with the **DNO**. In the absence of a specific published **DNO** requirement the response time will be 5 minutes.

DPC9.3.3.4 The modulated behaviour will be maintained for the duration of the signal to do so from the **DNO** unless otherwise agreed with the **DNO**.

DPC9.3.3.5 If the modulation, or any part of it, ceases to be fully available for operation at any time, either temporarily or permanently, unless otherwise agreed with the **DNO** the **Demand Service Provider** will notify the **DNO** without delay, and no more than 12 hours after the modulation ceases to be fully available.

DPC9.3.3.6 The **DNO** will advise what operational monitoring and/or metering is to be installed in a **Demand Facility**, or agreed with a **Demand Service Provider**. For **Demand Facilities** connected at **HV** the **DNO** in some cases will install the **DNO's** own telemetry which can form part of the necessary operational monitoring,

DPC9.4 Operational Notification

DPC9.4.1 As part of the contractual arrangements for the provision of demand side services to the **DNO**, the **Demand Service Provider** must provide the following information one month, or other such time as agreed with **DNO**, in advance of the commencement of the services contracted for demand side services:

a) Full contact details of the **Demand Service Provider**

b) Full contact details of the **Demand Facility** owner;

c) The exact address and location of the **Demand Facility**;

d) The capacity of the modulated behaviour of the **Demand Unit** expressed in kW or kVAr (including production or consumption) as appropriate;

e) Confirmation that the **Demand Unit** complies with the technical and modulation requirements of DPC9.3;

f) The above information must be submitted for each and every **Demand Unit.**

DPC9.4.2 Unless agreed otherwise with the **DNO** the above information, together with the statement of compliance required by DPC9.5.4 below shall be submitted by the **Demand Services Provider** on the proforma provided by the **DNO** for that purpose.

DPC9.4.3 Unless agreed otherwise with the **DNO** The **Demand Services Provider** must notify the **DNO** of any planned change or modification to the capabilities of the **Demand Unit** at least one month in advance..

DPC9.4.4 Unless otherwise agreed with the **DNO** the **Demand Services Provider** must notify the **DNO** of any unplanned incident or failure of a **Demand Unit** immediately, which means within the same day.

DPC9.4.5 In the case of an aggregated service, any unplanned incident or failure of the contracted service should be notified to the **DNO** immediately, which means within the same day.

DPC9.4.6 For any **Demand Facility** connected at **HV**, the demand side services cannot be called upon until the **DNO** has issued a final operational notice to the **Customer** responsible for the **Demand Facility**. The **DNO** will issue the final operational

notice to the customer on receipt of the complete information required in DPC9.4.1. The **DNO** will recognize practical difficulties in completing all appropriate tests for confirmation of compliance in specific situations and will not unreasonably withhold the issuing of the final operation notification.

DPC9.5 Compliance

DPC9.5.1 The **Demand Service Provider** is wholly responsible for the compliance of the **Customer's Demand Units** with the requirements of this DPC9 and for the conduct of any tests necessary to demonstrate compliance.

DPC9.5.2 The **Demand Service Provider** must demonstrate the modulation of behaviour of the **Demand Units** on receipt of the appropriate signal (or simulated sign) from the **DNO**. Where appropriate such tests can be undertaken off site, for example by the manufacturer.

DPC9.5.3 To the extent that the **Demand Service Provider** requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.

DPC9.5.4 The **Demand Service Provider** will supply to the **DNO** a statement of compliance detailing how compliance with the relevant parts of DPC9 has been demonstrated. The statement can include **Manufacturer's Information** to support the demonstration of compliance.

DPC9.5.5 The **DNO** may require the **Demand Service Provider** to repeat compliance tests in accordance with a plan, or following any modification or failure of the **Demand Unit** to perform as required.

Demand Side Response Installation Documents – Explanatory note.

For DNO contracted DSR, the Demand Response Unit Document and the Installation Document are one and the same document.

However there are two versions of this document:

DSR 1 for individual customers, DSR 2 for aggregators.

DSR 3 should be completed for each Demand Unit reported under DSR 1 or DSR 2 – either on a site by site basis or once only as a type test certification, the details of which can be quoted on DSR 1.

It is the aggregator's responsibility to ensure Distribution Code compliance for each Demand Unit included within their DSR 2 submission.

DSR 4 – Demand Unit Decommissioning form.

The following definitions are used in these forms:

Demand Facility	An installation under the control of a **Customer** where electrical energy is consumed and is connected at one or more **Connection Points** to the **DNO's Distribution System**.
Demand Unit	An appliance or a device whose **Active Power Demand** or **Reactive Power** production or consumption is being actively controlled by the **Customer** in whose **Demand Facility** it is installed and which has been commissioned on or after 07 September 2019 in pursuance of a contract to this end with the DNO. Such an appliance or device commissioned before this date, but which has been materially altered will also be included in this definition. **Demand Units** of **Customers** where the **Customer** has concluded a final and binding contract for the purchase of a **Demand Unit** before 07 September 2018 are not included the scope of DPC9. The **Customer** must have notified the **DNO** of the conclusion of this final and binding contract by 07 March 2019.
Fully Type Tested	A **Demand Unit** which has been tested to ensure that the design meets the relevant technical and compliance requirements of DPC9, and for which its manufacturer has declared that all similar **Demand Units** supplied will be constructed to the same standards and will have the same performance.
Type Tested	A product which has been tested to ensure that the design meets the relevant requirements of DPC9, and for which the manufacturer has declared that all similar products supplied will be constructed to the same standards and will have the same performance. The mdeclaration will define clearly the extent of the equipment that is subject to the tests and declaration.

DSR 1 - Demand Unit - Installation Document

Please complete and provide this document for every **Demand Facility** (ie each premise).

Part 1 should be completed for the **Demand Facility**.

Part 2 should be completed for each **Demand Unit(s)** being commissioned. Where the installation is phased the form should be completed and returned to the **DNO** as each ~~part~~ phase of the installation is commissioned.

DSR 1 - Part 1 Demand Facility

To ABC electricity distribution **DNO**
99 West St, Imaginary Town, ZZ99 9AA abced@wxyz.com

Field Code Changed

Customer Details:	
Customer (name)	
Address	
Post Code	
Contact person (if different from **Customer**)	
Telephone number	
E-mail address	
MPAN(s)	
Customer signature	
Installation details	
Address	
Post code	

Summary details of Demand Units - where one or more **Demand Units** will exist within one ~~premises.~~Demand Facility						
Manufacturer / Reference	Date of commissioning	Technology Type eg Air Conditioning Refrigeration Heating EV / Battery Charging Demand reduction via DG operation	Manufacturers Ref No. (Product ID) or other identification	**Demand Unit** Rated Capacity in kW	Modulation Capacity (kW)	Modulation Capacity (kVAr)

Commissioning Checks	
Description	**Confirmation**
Operational m~~M~~onitoring provides the appropriate data to the DNO.	Yes / No*
DSR3 Compliance Verification Report completed for each **Demand Unit**	Yes / No*

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DSR 1 - Part 2 Demand Unit	
Demand Unit Type/Description	
Manufacturer name	
Other identification information	

Commissioning Checks	
Operational m~~M~~onitoring provides the appropriate data to the DNO.	Yes / No*
*Circle as appropriate. If "No" is selected the **Demand Unit** is deemed to have failed the commissioning tests and the **Demand Unit** shall not be put in service for ~~DSR~~ contractual purposes (although it can continue to be used normally).	
Additional comments / observations:	

Declaration – to be completed by Customer or the **Customer's** Appointed Technical Representative	
I declare that for the **Demand Unit**: 1. Compliance with the requirements of the Distribution Code is achieved. 2. The commissioning checks have been successfully completed.	
Name:	
Signature:	Date:
Company Name:	
Position:	

Declaration – to be completed by **DNO** Witnessing Representative if applicable. Delete if not witnessed by the **DNO**.	
I confirm that I have witnessed the commissioning checks in this document on behalf of _____ and that the results are an accurate record of the checks	
Name:	
Signature:	Date:
Company Name:	

DSR 2 – Aggregator's Compliance Document

Please complete and provide this document for every **Demand Facility.**

Part 1 should be completed for the Aggregator's details.

Part 2 should be completed to list each **Demand Unit** forming part of the contract with the **DNO**.

DSR 2 - Part 1 Aggregator's Details

Contract Reference:
To ABC electricity distribution **DNO** 99 West St, Imaginary Town, ZZ99 9AA abced@wxyz.com

Field Code Changed

Aggregator Details:	
Aggregator (name)	
Address	
Post Code	
Contact person	
Telephone number	
E-mail address	
~~**Customer**~~ **Aggregator** signature	

Summary details of Demand Units.		
Number of **Demand Units**		Number
Aggregate modulated Active Demand		MW
Aggregate modulated Reactive Demand		MVAr

Commissioning Checks	
Description	**Confirmation**
Confirmation that all the **Demand Unit** associated with the **DNO** contract responds to the **DNO**'s command signal within the time specified by the **DNO** (or by the default in DPC9 of the **Distribution Code** if not specified	Yes / No*

by the **DNO**)5s and that the response is held for the duration of the signal (not less than five minutes) and that unmodulated behaviour resumes when the signal is removed.	
Operational mMonitoring provides the appropriate data to the DNO.	Yes / No*
If "No" is selected the Demand Unitaggregator is deemed to have failed the commissioning tests and the **Demand Units** included in the contract shall not be put in service for DSR contract purposes (although it they can continue to be used normally).	
Declaration – to be completed by Customer or the **Customer's** Appointed Technical Representative	
I declare that for all the **Demand Units** associated with this contract: 1. Compliance with the requirements of the Distribution Code is achieved. 2. The commissioning checks have been successfully completed.	
Name:	
Signature:	Date:
Company Name:	
Position:	
Declaration – to be completed by **DNO** Witnessing Representative if applicable. Delete if not witnessed by the **DNO**.	
I confirm that I have witnessed the commissioning checks in this document on behalf of _____ and that the results are an accurate record of the checks	
Name:	
Signature:	Date:
Company Name:	

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DSR 2 - Part 2 Demand Facility and Demand Unit			
List of Demand Facilityies and Demand Units associated with this DSR contract.			
MPAN	Connection Voltage	Modulated Active Power (kW)	Modulated Reactive Power (kVAr)

DSR 3 - Compliance Verification Report for Demand Units

This form should be used by the **Manufacturer** to demonstrate and declare compliance with the requirements of the **Distribution Code**. The form can be used in a variety of ways as detailed below:

1. To obtain **Fully Type Tested** status

   The **Manufacturer** can use this form to obtain **Fully Type Tested** status for a **Demand Unit** by registering this completed form with the Energy Networks Association (ENA) Type Test Verification Report Register.

2. To obtain **Type Tested** status for a product

   This form can be used by the **Manufacturer** to obtain **Type Tested** status for a product which is used in a **Demand Unit** by registering this form with the relevant parts completed with the Energy Networks Association (ENA) Type Test Verification Report Register.

3. One-off Installation

   This form can be used by the **Manufacturer** or **Installer** to confirm that the **Demand Unit** has been tested to satisfy all or part of the requirements of the **Distribution Code**. This form must be submitted to the **DNO** as part of the compliance assessment.

A combination of (2) and (3) can be used as required.

Note:

If the **Demand Unit** is **Fully Type Tested** and registered with the Energy Networks Association (ENA) Type Test Verification Report Register, the Installation Document (Form DSR 1) should include the **Manufacturer's** reference number (the Product ID), and this form does not need to be submitted.

Where the **Demand Unit** is not registered with the ENA Type Test Verification Report Register or is not **Fully Type Tested** this form (all or in parts as applicable) needs to be completed and provided to the **DNO**, to confirm that the **Demand Unit** has been tested to satisfy all or part of the requirements of this **Distribution Code**.

Demand Unit Type/Description			
Manufacturer name			
Address			
Tel		Web site	
E:mail			

Capacity of modulated active power.	kW
Capacity of modulated reactive power.	kVAr
Maximum ramp rate(s) (if applicable)	kW and/or kVAr per second
Minimum ramp rate(s) (if applicable)	kW and/or kVAr per second

There are four options for Testing: (1) **Fully Type Tested**, (2) Partially **Type Tested**, (3) one-off installation, (4) tested on site at time of commissioning. The check box below indicates which tests in

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this Form have been completed for each of the options. With the exception of **Fully Type Tested Demand Units** tests marked with * may be carried out at the time of commissioning.

Tested option:	**1. Fully Type Tested**	**2. Partially Type Tested**	**3. One-Off Man. Info.**	**4. Tested on Site at time of Commission-ing**
0. **Fully Type Tested** - all tests detailed below completed and evidence attached to this submission		**N/A**	**N/A**	**N/A**
1. Operating Range			~~**N/A**~~	~~**N/A**~~
2. Demand modulation tests*				

* may be carried out at the time of commissioning.

Document reference for **Manufacturers' Information** including the ENA Type Test Verification Report Register Product ID number where applicable:

Manufacturer compliance declaration. - I certify that all products supplied by the company with the above **Type Tested Manufacturer's** reference number will be manufactured and tested to ensure that they perform as stated in this document, prior to shipment to site and that no site **Modifications** are required to ensure that the product meets all the requirements of the **Distribution Code**

Signed		On behalf of	
Name			

Note that testing can be done by the **Manufacturer** of an individual component or by an external test house.

Where parts of the testing are carried out by persons or organisations other than the **Manufacturer** then that person or organisation shall keep copies of all test records and results supplied to them to verify that the testing has been carried out by people with sufficient technical competency to carry out the tests.

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DSR 3 - Compliance Verification Report –Tests for Demand Units

1. Operating Range: Eight tests should be carried out; four with the **Demand Unit** operating at **Rated Capacity**, and four operating at maximum modulation.

Frequency, voltage and **Active and Reactive Power** measurements at the output terminals of the **Demand Unit** shall be recorded every second. The tests will verify that the **Demand Unit** can operate within the required ranges for the specified period of time.

Note – if the **Demand Unit** contains no components which are appropriately sensitive to voltage or frequency, and there is no possibility of the **Demand Unit** either disconnecting or failing for voltage and frequency variations within the ranges of these tests, the manufacturer or **Customer** can indicate so by ticking here [ ] and waiving the operating range tests.

	Rated Capacity	Fully modulated
Test 1 Voltage = 90% of nominal ((207.0 V), Frequency = 47 Hz, Period of test 20 s		
Test 2 Voltage = 90% of nominal (207.0 V), Frequency = 47.5 Hz, Period of test 90 minutes		
Test 3 Voltage = 110% of nominal (253 V), Frequency = 51.5 Hz, Period of test 90 minutes		
Test 4 Voltage = 110% of nominal (253 V), Frequency = 52.0 Hz, Period of test 15 minutes		

2 Modulation

Confirmation that the **Demand Unit** responds to the **DNO**'s command signal within the time specified by the **DNO** (or by the default in DPC9 of the **Distribution Code** if not specified by the **DNO**)~~5 s~~ and that the response is held for the duration of the signal (not less than five minutes) and that unmodulated behaviour resumes when the signal is removed.	Yes / ~~NA~~No

Additional comments

DSR 4 –Decommissioning Confirmation

Confirmation of the decommissioning of the DSR capability of a **Demand Unit**

Form DSR 4 - Decommissioning Confirmation **Demand Facility Details**	
Demand Facility Address (inc post code)	
Telephone number	
MPAN(s)	
Distribution Network Operator (DNO)	

Demand Unit Details		
Demand Unit Type/Description		
Manufacturer name		
Other identification information		
Voltage of Connection	**Modulated Active Power (kW)**	**Modulated Reactive Power (kVA)**

Annex 4 Terms of Reference

nationalgrid

Workgroup Terms of Reference and Membership

TERMS OF REFERENCE FOR GC0104 WORKGROUP

EU Connection Codes GB Implementation – Demand Connection Code

Responsibilities

1. The Workgroup is responsible for assisting the Grid Code Review Panel in the evaluation of Grid Code Modification Proposal **GC0104, EU Connection Codes GB Implementation – Demand Connection Code** tabled by National Grid at the Grid Code Review Panel meeting on 16 August 2017.

2. The proposal must be evaluated to consider whether it better facilitates achievement of the Grid Code Objectives. These can be summarised as follows:

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

   (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);

   (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; and

   (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. In conducting its business, the Workgroup will at all times endeavour to operate in a manner that is consistent with the Code Administration Code of Practice principles.

Scope

3. The Workgroup must consider the issues raised by the Modification Proposal and consider if the proposal identified better facilitates achievement of the Grid Code Objectives.

4. In addition to the overriding requirement of point 3 above, the Workgroup shall consider and report on the following specific issues:

   a) Implementation;

   b) Review draft legal text should it have been provided. If legal text is not submitted within the Grid Code Modification Proposal the Workgroup should be instructed to assist in the developing of the legal text; and

   c) Consider whether any further Industry experts or stakeholders should be invited to participate within the Workgroup to ensure that all potentially affected stakeholders have the opportunity to be represented in the Workgroup.

d) Technical requirements for new* Transmission-connected Demand Facilities; Transmission-connected Distribution Facilities and Distribution Systems.

e) Technical requirements for Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators.
   - 'New' is defined as not being connected to the system at the time that the code enters into force and not having concluded a final and binding contract for the purchase of main plant items by two years after entry into force.

f) *The scope and applicability of the EU requirements under* DCC, specifically articles are 12-47

g) DSR impact

Distribution Code impact

a) Scope and applicability of EU requirements under Demand Connection Code.

5. As per Grid Code GR20.8 (a) and (b) the Workgroup should seek clarification and guidance from the Grid Code Review Panel when appropriate and required.

6. The Workgroup is responsible for the formulation and evaluation of any Workgroup Alternative Grid Code Modifications arising from Group discussions which would, as compared with the Modification Proposal or the current version of the Grid Code, better facilitate achieving the Grid Code Objectives in relation to the issue or defect identified.

7. The Workgroup should become conversant with the definition of Workgroup Alternative Grid Code Modification which appears in the Governance Rules of the Grid Code. The definition entitles the Group and/or an individual member of the Workgroup to put forward a Workgroup Alternative Code Modification proposal if the member(s) genuinely believes the alternative proposal compared with the Modification Proposal or the current version of the Grid Code better facilitates the Grid Code objectives The extent of the support for the Modification Proposal or any Workgroup Alternative Modification (WACM) proposal WACM arising from the Workgroup's discussions should be clearly described in the final Workgroup Report to the Grid Code Review Panel.

8. Workgroup members should be mindful of efficiency and propose the fewest number of WACM proposals as possible. All new alternative proposals need to be proposed using the Alternative request Proposal form ensuring a reliable source of information for the Workgroup, Panel, Industry participants and the Authority.

9. All WACM proposals should include the Proposer(s)'s details within the final Workgroup report, for the avoidance of doubt this includes WACM proposals which are proposed by the entire Workgroup or subset of members.

10. There is an option for the Workgroup to undertake a period of Consultation in accordance with Grid Code GR. 20.11, if defined within the timetable agreed by the Grid Code Panel. Should the Workgroup determine that they see the benefit in a Workgroup Consultation being issued they can recommend this to the Grid Code Review Panel to consider.

11. Following the Consultation period the Workgroup is required to consider all responses including any Workgroup Consultation Alternative Requests. In undertaking an assessment of any Workgroup Consultation Alternative Request, the Workgroup should consider whether it better facilitates the Grid Code Objectives than the current version of the Grid Code.

12. As appropriate, the Workgroup will be required to undertake any further analysis and update the appropriate sections of the original Modification Proposal and/or WACM proposals (Workgroup members cannot amend the original text submitted by the Proposer of the modification) All responses including any Workgroup Consultation Alternative Requests shall be included within the final report including a summary of the Workgroup's deliberations and conclusions. The report should make it clear where and why the Workgroup chairman has exercised their right under the Grid Code to progress a Workgroup Consultation Alternative Request or a WACM proposal against the majority views of Workgroup members. It should also be explicitly stated where, under these circumstances, the Workgroup chairman is employed by the same organisation who submitted the Workgroup Consultation Alternative Request.

13. The Workgroup is to submit its final report to the Modifications Panel Secretary on 18 April 2018 for circulation to Panel Members. The final report conclusions will be presented to the Grid Code Review Panel meeting on 26 April 2018.

Membership

It is recommended that the Workgroup has the following members:

Role	Name	Representing (User nominated)
Chair	Chrissie Brown	
Technical Secretary	Naomi Davies	
National Grid Representative*	Rachel Woodbridge-Stocks	NGET
	Anthony Johnson	NGET
Authority Representative		
Workgroup Member*	Mike Kay	Electricity North West
Workgroup Member	Timothy Moore	UK Power Networks
Workgroup Member*	Garth Graham	SSE
Workgroup Member*	Graeme Vincent	SP Energy Networks
Workgroup Member*	Isaac Gutierrez	Scottish Power Renewables
Workgroup Member*	Alan Creighton	Northern Powergrid
Workgroup Member*	Alastair Frew	Scottish Power Generation Ltd
Workgroup Member*	Tim Ellingham	RWE

14. A (*) Workgroup must comprise at least 5 members (who may be Panel Members). The roles identified with an asterisk(*) in the table above contribute toward the required quorum, determined in accordance with paragraph 15 below.

15. The Grid Code Review Panel must agree a number that will be quorum for each Workgroup meeting. The agreed figure for GC0104 is that at least 5 Workgroup members must participate in a meeting for quorum to be met.

16. A vote is to take place by all eligible Workgroup members on the Modification Proposal and each WACM proposal and Workgroup Consultation Alternative Request based on their assessment of the Proposal(s) against the Grid Code objectives when compared against the current Grid Code baseline.

    - Do you support the Original or any of the alternative Proposals?
    - Which of the Proposals best facilitates the Grid Code Objectives?

    The Workgroup chairman shall not have a vote, casting or otherwise.

The results from the vote and the reasons for such voting shall be recorded in the Workgroup report in as much detail as practicable.

17. It is expected that Workgroup members would only abstain from voting under limited circumstances, for example where a member feels that a proposal has been insufficiently developed. Where a member has such concerns, they should raise these with the Workgroup chairman at the earliest possible opportunity and certainly before the Workgroup vote takes place. Where abstention occurs, the reason should be recorded in the Workgroup report.

18. Workgroup members or their appointed alternate are required to attend a minimum of 50% of the Workgroup meetings to be eligible to participate in the Workgroup vote.

19. The Technical Secretary shall keep an Attendance Record for the Workgroup meetings and circulate the Attendance Record with the Action Notes after each meeting. This will be attached to the final Workgroup report.

20. The Workgroup membership can be amended from time to time by the Grid Code Review Panel and the Chairman of the Workgroup.

Appendix 1 – Indicative Workgroup Timetable

The following timetable is indicative for GC0104:

Date	Meeting
Workgroup Meeting 1	6 September 2017
Workgroup Meeting 2	6 December
Workgroup Meeting 3	23 January 2018
Workgroup Meeting 4	22 February 2018
Workgroup Consultation issued/closes	8 March/29 March 2018
Workgroup meeting 5 & 6	April 2018
Workgroup Report presented to Panel (submission/presented)	18 April 2018

Post Workgroup modification process:

Date	Meeting
Code Administration Consultation Report issued to the Industry (opens/closes)	16 May 2018/7 June 2018
Draft Final Modification Report presented to Industry and Panel (issued/presented)	8 June/14 June 2018
Modification Panel Recommendation vote	14 June 2018
Final Modification Report issued the Authority	25 June 2018
Authority decision due (25WDs)	30 July 2018
Decision implemented in Grid Code (10WDs)	14 August 2018

Annex 5 DCC Code Mapping

This Annex has been uploaded separately and is located in the Panel papers as GC0104 Annex 5.

Annex 6 Workgroup Consultation responses

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*Rick Parfett, rick.parfett@theade.co.uk*
Company Name:	*The Association for Decentralised Energy (ADE)*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the

	Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	The ADE believes that the GC0104 Original proposal better facilitates Grid Code objective four by ensuring GB compliance with EU legislation. As part of the third Energy Package, the proposal has the potential to better facilitate Grid Code objectives one, two and three. In its current form, however, the proposal risks creating unnecessary barriers to entry and certification requirements for DSR providers, with consequent impacts upon competition and efficiency. These issues are outlined in our response to Question 10.
2	Do you support the proposed implementation approach?	The ADE supports the implementation approach, noting the need for implementation by 7 September 2018, if the issues outlined are resolved.
3	Do you have any other comments?	The ADE has no comment.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, https://www.nationalgrid.com/uk/electricity/codes/grid-code and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the	The ADE has no comment.

	other DSR services in Article 27 are services for the Transmission System Operator?	
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	The ADE has no comment.
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	The ADE has no comment.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	The ADE has no comment.
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	The ADE has no comment.
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	The ADE welcomes most of the contents of the DRSC. There are currently, however, several sections which contain requirements that are either too broadly defined or should only apply to providers of certain Demand Response services. These are: 1. DRSC.5.1 requires that any plant or apparatus that provides Demand Response services must tolerate frequencies above 51.5 Hz for 15 minutes and below 47.5 Hz for 20 seconds, as well as a Rate of Change of Frequency of 1 Hz/s. Similar requirements exist for voltage tolerances. While these requirements are reasonable for new transmission-connected customer sites, extending this requirement to all sites that provide demand response is unreasonable and likely to strongly deter the provision of

		demand response. DSR aggregators will be unable to prove that all of a customer's plant can meet the above requirements; it would be extremely onerous to collect certification for every piece of equipment on the customer site (certificates which may not exist in all cases) and testing would be extremely expensive and disruptive. Testing an entire customer site would require an aggregator to take the whole site 'off grid' and supply it all from a generator that is then modulated to the required extremes of frequency and voltage. The requirements are therefore disproportionate and impossible to implement on these sites. In addition, it is unclear how these requirements could be proven, as is required under DRSC.11.6.1.1 2. We welcome the acknowledgement under DRSC.9.1 that operational metering requirements will vary depending upon the type of Ancillary Service. We would like to see explicit recognition, however, that, lower resolution metering is acceptable in certain cases, so long as it is allowed by the service. This is because units providing DSR services do not necessarily have standard metering equipment, in the same way that generation does, and such equipment would be prohibitively costly to install on every asset. 3. DRSC.11.4.2.3(a) contains a requirement to provide "*all* documentation and certificates" (my italics) to evidence compliance. This is too broad a piece of drafting and is therefore impossible to satisfy; the word 'all' should be replaced by the word 'relevant'. 4. DRSC.11.4.2 and 11.5 allow NGET to request extra information and testing from Providers in a broad range of scenarios. While this is completely legitimate in certain scenarios, the current drafting seems too broad. Fulfilling extra tests is costly and burdensome for a DSR provider in a way that it is not for most generation because it involves customers altering or interrupting production schedules, leading to potential loss of revenue. While this is sometimes

		unavoidable, the costs imposed mean that a limited list of specific scenarios where NGET can request extra information or testing should be included in the drafting. 5. DRSC.11.4.2.3(c) and (d) require DSR providers to submit "steady state and dynamic models of plant and apparatus" and "study results showing the expected steady state and dynamic performance". While this requirement is reasonable for reactive power services and dynamic frequency response, it seems unnecessary for reserve services and static frequency response. 6. DRSC.11.8.1 requires that Demand Units providing Demand Response Very Fast Active Power Control supply a model to NGET to demonstrate technical capability. While this requirement is suitable for very fast dynamic frequency response, it is likely that test results will be sufficient to demonstrate technical capability for very fast static frequency response. 7. We welcome the recognition in DRSC.6.1 that demand units that provide DSR services to the Grid through an aggregated pool (rather than individually) should submit information at an aggregated level, via the aggregator. This is very important, because each unit may only make a partial contribution to the overall service so being able to define, for example, the frequency range operated within at an individual level would be impossible; what matters is the aggregate outcome. We would appreciate clarification, however, on the subclause highlighted in bold: "For the avoidance of doubt, these requirements shall apply either individually or **where it is not part of a Non-Embedded Customers System**, collectively as part of a Demand aggregation scheme through a Demand Response Provider". It is important that these subclause is not interpreted as obliging certain sites to declare information and fulfil requirements on a standalone, rather than aggregate, basis. We would therefore

		appreciate a clear statement that, for any aggregated pool of sites, the relevant range of frequency is to be delivered at an aggregate level.
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	The ADE has no comment.
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	The ADE has no comment.
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	The ADE has no comment.

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*David Spillett - 02077065124*
Company Name:	*Energy Networks Association*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the

	Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Yes
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	Demand side response services are in their infancy. The drafting of requirements into GB codes must do no more than reflect the absolute basics of the DCC, leaving as much scope as possible for technical and commercial innovation in delivering such services. The consultation drafting of the Grid and Distribution Code appears to achieve this balance, and it would be wrong to press for more detail to be included at this time.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	Yes.
6	Are the rights and obligations of aggregators appropriately	Given the immaturity of such services, it is in

	allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	appropriate to consider creating more detailed requirements at this time, which might stifle appropriate commercial development of services.
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	No additional comments and we agree that the installation document and DRUD can be combined.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	Not at this time.
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	Yes. There is insufficient clarity about when a GSP might become an EU GSP, ie what sort of modification to the site will trigger the change of status. There are some suggested changes to legal text below
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	Yes
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	The proposal is adequate for compliance with the DCC.
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO	N/A

	to consult with TSO's in the Synchronous Area.	
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	See below:

Glossary and Definitions

The definition of Main Plant and Equipment can be clarified to make it clear that an EU GSP has this status based on a substantial investment, not just on, for example, the addition of a new circuit breaker.

EU Code User

….

(h) A Network Operator whose entire distribution System was first connected to the ~~Transmisison~~Transmission System on or after 7 September 2019 or who had placed Purchase Contracts for its Main Plant and Apparatus in respect of its ~~total~~ entire distribution System on or after 7 September 2018. In this case, a Network Operator's entire system would only have EU Grid Supply Points at each Connection Point with the National Electricity Transmission System.

Main Plant and Equipment

…

In respect of a Network Operator's equipment or a Non-Embedded Customer's equipment, is ~~one~~ the majority of the principal~~e~~ items of ~~Plant or~~ Apparatus required at each EU Grid Supply Point to facilitate the import or export of Active Power or Reactive Power to a Network Operator's or Non Embedded Customer's System.

ECC

In ECC 6.4.5.1 it is necessary to consider the implications of wider reactive power limits (ie requiring the capability to support more MVAr) rather than narrower.

ECC.6.4.5.1 At each **EU Grid Supply Point**, **Non-Embedded Customers** and **Network Operators** who are **EU Code Users** shall ensure their **Systems** are capable of steady state operation within the **Reactive Power** limits as specified in ECC.6.4.5.1(a) and ECC.6.4.5.1(b). Where **NGET** requires a **Reactive Power** range which is ~~narrower~~ broader than the limits defined in ECC.6.4.5.1(a) and ECC.6.4.5.1(b), this will be agreed as a reasonable requirement through joint assessment between the relevant **EU Code User** and **NGET** and justified in accordance with the requirements of ECC.6.4.5.1(c), (d), (e) and (f). For the avoidance of doubt, the requirements of ECC.6.4.5 do not apply to **Network Operators** who are also **GB Code Users** and own or operate one or more **EU Grid Supply Points** .

The text in Appendix E5 has misinterpreted the intent of the DCC in relation to directional blocking of LFDD. It is also unlikely that there would be a LFDD relay at a GSP.

ECC.A.5.1.1 The **Low Frequency Relays** to be used shall have a setting range of 47.0 to 50Hz and be suitable for operation from a nominal AC input of 63.5, 110 or 240V. The following parameters specify the requirements of approved **Low Frequency Relays**:

(a) **Frequency** settings:	47-50Hz in steps of 0.05Hz or better, preferably 0.01Hz;
(b) Operating time:	Relay operating time shall not be more than 150 ms;
(c) Voltage lock-out:	Selectable within a range of 55 to 90% of nominal voltage;
(d) Direction	Tripping interlock for forward or reverse power flow capable of being set in either position or off
(e~~d~~) Facility stages:	One or two stages of **Frequency** operation;
(f~~e~~) Output contacts:	Two output contacts per stage to be capable of repetitively making and breaking for 1000 operations:
(g~~f~~) Accuracy:	0.01 Hz maximum error under reference environmental and system voltage conditions. 0.05 Hz maximum error at 8% of total harmonic distortion **Electromagnetic Compatibility Level**.
~~(h) Indications~~	~~Provide the direction of **Active Power** flow at the point of de-energisation.~~

In the case of **Network Operators** who are also **GB Code User~~'~~s**, the above requirements ~~would~~ only apply to ~~the~~ a relay (if any) installed at the **EU Grid Supply Point**. **Network Operators** who are also **GB Code Users** should continue to satisfy the requirements for low frequency relays as specified in the **CC~~'~~s** as applicable to their **Total System**.

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*Please insert your name and contact details (phone number or email address)*
Company Name:	*Please insert Company Name*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs

	by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Yes
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	See responses to the specific questions
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, https://www.nationalgrid.com/uk/electricity/codes/grid-code and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	No, agreed that DNOs do not manage frequency (b)(i) demand response system frequency control should be excluded. There is a presumption that very fast active power control is solely to manage frequency, is that definitely the case or are there other potential ? Also under a whole system approach couldn't DNOs/ DSOs procure services for transmission constraint management. These proposals should not prevent such developments if they are in the best interests of consumers.
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what	The drafting appears satisfactory.

	additional provisions would you suggest?	
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	Yes, we do not agree with the proposed approach. The pro-forma document seems to request information that is not specified in Article 32(6). Implementation should focus on doing the minimum to ensure compliance not adding additional regulatory burdens.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	We should avoid embedding too much into codes at this stage as these services are evolving and further codification should wait until best practice has emerged.
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	None that we have identified
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	The drafting appears to reflect the provisions in the DCC. Should the detail referred to in APPENDIX II – DRSC.A.2 be included in the Grid Code or left to the contractual agreements. The information specified appears in excess of that required in the DCC
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	It appears to include into the Grid Code the DCC requirements
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	

	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	Legal text not reviewed.

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	~~*Please insert your name and contact details (phone number or email address)*~~*Saskia Barker saskia.barker@flexitricity.com*
Company Name:	*Flexitricity Ltd*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs

	by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	The original proposal better facilitates Grid Code Objective (iv) because it discharges the TSOs obligations under the DCC. There are issues with the way the solution has been written that make the process of providing demand side response more confusing, and thus it is not in line with Grid Code Objective (v). But overall the proposal is better than the baseline because the alternative is non-compliance with EU legislation.
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	If the proposal is implemented as suggested, in that the SCTs for DSR services are only updated to point users to the new DRSC section of the Grid Code, it will create a lot of confusion in the market. National Grid and any DNOs procuring DSR services must write guidance documents to explain what the new obligations on DSR providers are. Especially since the legal text is vague in many areas, for example in asking for 'All documentation and certificates' from a DSR provider. It is unclear what documentation the TSO will require and what use it will be to the TSO. As there are many types of demand that can provide DSR services, it makes sense to draft that legal text as such, but the TSO must work with providers to understand what kind of documentation, modelling, etc is appropriate, useful to the TSO and practically available to providers. While National Grid have made a strong, and appreciated effort to attempt to demystify what the obligations on DSR providers will be, the decision to put the changes in the grid code rather than in the STCs for demand response mean that the changes will ultimately be confusing to DSR participants, especially those customers not going through an aggregator. This seems counter to the principals set

		out in the entso-e guidelines which are supposed to remove barriers to entry, rather than create them.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	Yes.
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	The default response time specified in DPC9.3.3.3 is in the frequency response range, rather than active or reactive power DSR range. A default of something along the lines of 5-10 minutes would make more sense. The data specified in DPC9.4.1 being specified one month in advance is fine, but must be implemented correctly for aggregated groups. If new units are added to a group, this should not bar the rest of that group from operation for example. The references to other pieces of EU legislation (EU 2016/631 etc) in the definition of 'Manufacture's information' in DPC9 should be more explicit so that providers are not being made to wade through EU legislation. The paperwork required from providers should be described clearly by the DNO procuring the service in the service contract, rather than sending the provider needing to be versed in EU legislation. There is no mention of aggregators or aggregation in the ECC that I could see, so if there are any, they are difficult to find.
7	Do you have any comments on the approach taken with the	There is no distinction necessary for HV and LV customers.

	Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	Where is 'fully type tested' defined? The obligations in DSR3 are either excessively complex or poorly expressed. Who will be carrying out these tests for individual sites, how will it be verified? How much manufacturer involvement does ENA actually expect to have in this process? Will there be any incentive for manufacturers to participate, especially considering that DNO DSR is currently rare and made up mostly of short term contracts.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	The easiest way to do this is to have the compliance and documentation process be on a site by site or unit by unit basis, and then have a secondary process for assigning compliant, documented units or sites to aggregated groups. If the units are not tested and documented individually, the other units in an aggregated portfolio would be forced out of the market every time a new unit joins, or has a temporary outage.
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	No opinion
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	No, the DRSC does not provide sufficient information for Demand Response Providers. There is not enough detail in the DRSC for providers to know what the obligations on them will be, so there will need to be another document, on top of the DRSC, and the SCTs for the service to explain how the two relate to each other. This is obviously not ideal as it means providers will now have 3 sets of documentation they need to comply with, rather than the one they currently need to. This could be avoided if the obligations from the DRSC are transposed into the SCTs.
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	N/A
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are	N/A

	there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	
	Legal text comments	None
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	N/A

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*Rachel Woodbridge-Stocks*
Company Name:	*National Grid*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	We believe this Workgroup Consultation comes at a good point in the workgroup development of this modification to open up GC0104 to wider opinion and to help ratify the issues that have been discussed and resolved in the workgroup. A lot of work has gone into bringing in the wider views of stakeholders, who are often new to the Grid Code modification process, throughout this work and encouraging demand providers in particular to offer suggestions and provide feedback. The responses to this consultation will be used to help finalise the solution and implement the Demand Connection Code which it should be remembered is one of a suite of European Connection Codes which places technical requirements on parties connecting equipment to the system; these codes though do not attempt to address any commercial issues or frameworks. *For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	We believe the Original proposal better facilitates the Grid Code Objectives. An assessment of the original proposal against the Grid Code objectives is as follows: *i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity* Positive. By implementing DCC into the Grid Code in line with Ofgem's guidance to only make those changes necessary to GB frameworks (as can be found in their 2014 Decision Letter), the current framework requirements for operating the system efficiently have been maintained whilst incorporating the requirements necessary to harmonise with Europe in this area. This

		therefore facilitates the further development of a coordinated and efficient system in the growing area of demand side services.
		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)* Positive. By implementing the necessary changes required by DCC, competition will be extended and harmonised across demand and generation services.
		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* Positive. By establishing harmonised requirements for demand side services and the security and efficiency of the system will be enhanced.
		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; and* Positive. This modification is required to implement elements of the European Connection Codes forming part of the suite of European Network Codes resulting from the EU 3rd Package legislation (EC 714/2009). The most efficient way of discharging these obligations is to adopt Ofgem's approach of using existing processes to make only those changes necessary to GB frameworks.
		v. *To promote efficiency in the implementation and administration of the Grid Code arrangements* Neutral. No major impacts on the process of administering the Grid Code.

2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	No
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, https://www.nationalgrid.com/uk/electricity/codes/grid-code and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	Yes
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	We believe they are.
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	We believe the requirements in the Installation Document and the Demand Response Unit Document are similar enough that they can be combined into one document. However, if an additional requirement is identified in the DRUD that isn't required in the ID it should be highlighted that this information isn't required from LV customers.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	We don't have views on this and welcome suggestions from stakeholders.

9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	This was subject to extensive discussion late in the workgroup development process. The issues may hinge around interpretation of new/existing provisions in the particular case of substantial modification. However, a basic principle is that an existing GSP would only be considered as new if substantially modified to the extent that it firstly needed a new connection agreement (which is hard to envisage and is subject to Ofgem resolution of dispute under licence condition C9) and secondly that equipment would have been replaced to such an extent that complying with any requirements in DCC would not be a likely issue.
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	Yes, however, if improvements are identified during this consultation we will of course take the feedback on board and make changes where appropriate.
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	We believe the proposal sufficiently discharges DCC obligations.
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	No, we support this process and consultationwhich gives further opportunity for engagement with all GB synchronous area TSOs as has also been afforded through the workgroup and will continue in the Code Administrator consultation that will follow conclusion of the workgroup.
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following	

	the closure of this Consultation.	

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	Alan Creighton
Company Name:	Northern Powergrid
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better	Yes

	facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	Demand side response services are in their infancy. The drafting of requirements into GB codes should do no more than reflect the absolute basics of the DCC, leaving as much scope as possible for technical and commercial innovation in delivering such services. The consultation drafting of the Grid and Distribution Code appears to achieve this balance, and it would inappropriate to press for more detail to be included at this time.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	Yes. A WG Consultation Alternative Request forms part of our consultation response.

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	Yes.
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	Given the immaturity of such services, it is inappropriate to consider creating more detailed requirements at this time, which might stifle appropriate commercial development of services.
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	We have no comments on the approach taken re the providers of services to DNOs and the System Operator. We agree that this is no need to distinguish between service providers connected at HV and LV.
8	Do you have any views on how	Not at this time.

	to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	Yes. The WG Consultation Alternative Request which forms part of our consultation response seeks to address this issue.
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	Yes.
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	The proposal seems adequate for compliance with the DCC.
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	N/A
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this	See below:

	Consultation.	

Marked versions of the following consultation documents containing comments on the legal text are attached as part of this consultation response:

Distribution Code

DPC9

DRUD

Grid Code

Glossary and Definitions

DRC

DRSC

DRUD

ECC

ECP

PC

Alternative request Proposal form

Grid Code

Modification potential alternative submitted to:

What stage is this document at?

01	Proposed alternative
02	Formal Workgroup alternative

GC0104 – WACM1

Mod Title: EU Connection Codes GB Implementation – Demand Connection Code – clarifying the application to existing Grid Supply Points

Purpose of alternative Proposal:
The purpose of this Alternative Proposal is the same as the Original Proposal and to clarify the application of the DCC when work is proposed to existing Grid Supply Points.

Date submitted to Code Administrator: 29 March 2019

You are: A Workgroup member

Workgroup vote outcome: Formal alternative/not alternative

(Should your potential alternative become a formal alternative it will be allocated a reference)

Any Questions?

Contact:
Chrissie Brown
Code Administrator

Christine.brown1@nationalgrid.com
Code Administrator

01926 65 3328

Alternative Proposer(s):
Alan Creighton
Northern Powergrid

alan.creighton@northernpowergrid.com

01977 605290

Contents

Should you require any guidance or assistance with this form and how to complete it please contact the Code Administrator at grid.code@nationalgrid.com

1 Alternative proposed solution for workgroup review

This Alternative seeks to implement the changes required to implement DCC as set out in the Original Proposal and to clarify the application of the DCC when work is proposed to existing Grid Supply Points.

2 Difference between this proposal and Original

The draft text included in the Workgroup Consultation would result in an existing Grid Supply Point being treated as an EU Grid Supply Point under the Grid Code in circumstances where Commission Regulation (EU) 2016/1388 (the "Regulation") is clear it should not be treated as such. The Regulation is EU law and the Grid Code must not be drafted so as to conflict with it.

Article 3 of the Regulation states that:

> *The connection requirements set out in this Regulation shall apply to:*
>
> *(a) new transmission-connected demand facilities;*
>
> *(b) new transmission-connected distribution facilities;*
>
> *(c) new distribution systems, including new closed distribution systems;*
>
> *(d) new demand units used by a demand facility or a closed distribution system to provide demand response services to relevant system operators and relevant TSOs.*

Article 4 1 of the Regulation states that:

> *Existing transmission-connected demand facilities,* ***existing transmission-connected distribution facilities,*** *existing distribution systems and existing demand units that are or can be used by a demand facility or a closed distribution system to provide demand response services to a relevant system operator or relevant TSO,* ***are not subject to the requirements of this Regulation, except where:***
>
> *(a) an existing transmission-connected demand facility, an existing transmission-connected distribution facility, an existing distribution system, or an existing demand unit within a demand facility at a voltage level above 1000 V or a closed distribution system connected at a voltage level above 1000 V,* ***has been modified to such an extent that its connection agreement must be substantially revised in accordance with the following procedure****:*
>
> > *(i) demand facility owners, DSOs, or CDSOs* ***who intend to undertake the modernisation of a plant or replacement of equipment impacting the technical capabilities of the transmission-connected demand facility,*** *the transmission-connected distribution facility, the distribution system, or the demand unit shall* ***notify their plans to the relevant system operator in advance****;*
> >
> > *(ii) if the relevant system operator considers that the extent of the modernisation or replacement of equipment is such that a new connection agreement is required, the system operator shall notify*

the relevant regulatory authority or, where applicable, the Member State; and

(iii) the relevant regulatory authority or, where applicable, the Member State shall decide if the existing connection agreement needs to be revised or a new connection agreement is required and which requirements of this Regulation shall apply; or

(b) a regulatory authority or, where applicable, a Member State decides to make an existing transmission-connected demand facility, an existing transmission-connected distribution facility, an existing distribution system, or an existing demand unit subject to all or some of the requirements of this Regulation, following a proposal from the relevant TSO in accordance with paragraphs 3, 4 and 5.

Article 4 2 of the Regulation states that:

For the purposes of this Regulation, a transmission-connected demand facility, a ***transmission-connected distribution facility****, a distribution system, or a demand unit that is, or can be, used by a demand facility or a closed distribution system to provide demand response services to a relevant system operator or relevant TSO,* ***shall be considered as existing if****:*

(a) it is already connected to the network on the date of entry into force of this Regulation; or

(b) the demand facility owner, DSO, or CDSO ***has concluded a final and binding contract for the purchase of the main demand equipment or the demand unit by two years after the entry into force of the Regulation****. The demand facility owner, DSO, or CDSO must notify the relevant system operator and relevant TSO of the conclusion of the contract within 30 months after the entry into force of the Regulation.*

Article 59 of the Regulation states that:

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union. Without prejudice to Article 4(2)(b), Article 6, Article 51, Article 56 and Article 57, ***the requirements of this Regulation shall apply from three years after publication****.*

[Emphasis added]

Consequently, the Regulation applies to:

(a) new distribution assets at GSPs where none of the contracts for the main equipment are placed before 7 September 2018;

(b) new distribution assets at GSPs where none of the assets are connected before 7 September 2019; and

(c) existing distribution assets at GSPs where on or after 7 September 2019 (i) the assets are modified to such an extent that the relevant

connection agreement must be substantially modified and (ii) the distributor initiated the modification.

The following draft text included in the Workgroup Consultation defines an EU GSP as follows:

EU Grid Supply Point	A point of supply from the **National Electricity Transmission System** to **Network Operators** or **Non-Embedded Customers** where:- (i) the **Network Operator** or **Non Embedded Customer** had placed **Purchase Contracts** for its **Main Plant** and **Apparatus** at that **Grid Supply Point** on or after 7 September 2018 or (ii) the **Network Operators** or **Non Embedded Customers Main Plant** and **Apparatus** at that **Grid Supply Point** was first connected to the **Transmission System** on or after 7 September 2019 or (iii) the **Network Operator** or **Non Embedded Customer** is the subject of a **Substantial Modification** at that **Grid Supply Point** on or after 7 September 2019.

This attempts to set out the three scenarios whereby a GSP would be treated as an EU GSP (the effect of which is to subject the GSP to the provisions of the Regulation). However, the three limbs must be amended so that they correctly reflect the Regulation.

3 Justification for alternative proposal against Grid Code objectives

As per the Original Proposal.

Impact of the modification on the Relevant Objectives:	
Relevant Objective	**Identified impact**
To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	**Positive**
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)	**Positive**

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	**Positive/**
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; and	**Positive**
To promote efficiency in the implementation and administration of the Grid Code arrangements	**Neutral**

This change will impact the relevant Code objectives as per the Original Proposal.

4 Impacts and Other Considerations

The Alternative Proposal will ensure that the DCC does not conflict with the Regulation and, therefore, with EU law.

Consumer Impacts

As per the Original Proposal.

5 Implementation

As per the Original Proposal.

6 Legal Text

The proposed text to implement this Alternative Proposal is as per the Original Proposal but with the following amendments to the definitions.

EU Grid Supply Point	A ~~point of supply~~**Grid Supply Point** ~~from the **National Electricity Transmission System** to **Network Operators** or **Non-Embedded Customers**~~ where:- (i) the **Network Operator** or **Non Embedded Customer** had not placed **Purchase Contracts** for any of its **Main Plant** and **Apparatus** at that **Grid Supply Point** ~~on or after~~before 7 September 2018; ~~or~~ (ii) none of the **Network Operator's** or **Non Embedded Customer's Main Plant** and **Apparatus** at that **Grid Supply Point** was first connected to the **Transmission System** ~~on or after~~before 7 September 2019; or (iii) there ~~**Network Operator** or **Non-Embedded Customer** is the subject of~~ is a completed **Substantial Modification** at that **Grid Supply Point** on or after 7 September 2019.

Grid Supply Point	A point of supply from the **National Electricity Transmission System** to **Network Operators** or **Non-Embedded Customers**.

Main Plant and Apparatus	In respect of a **Power Station** (including **Power Stations** comprising of **DC Connected Power Park Modules**) is one or more of the ~~principe~~principal items of **Plant** or **Apparatus** required to convert the primary source of energy into electricity. In respect of **HVDC Systems** or **DC Converters** or **Transmission DC Converters** is one of the ~~principe~~principal items of **Plant** or **Apparatus** used to convert high voltage direct current to high voltage alternating current or ~~visa~~ vice versa. In respect of **Network Operators** equipment or **Non-Embedded Customers** equipment, is one of the ~~principe~~principal items of **Plant** or **Apparatus** required at each ~~**EU**~~ **Grid Supply Point** to facilitate the import or export of **Active Power** or **Reactive Power** to a **Network Operators** or **Non Embedded Customer's System.**

Substantial Modification	A **Modification** in relation to modernisation or replacement of the **User's Main Plant and Apparatus**, which, following notification by the relevant **User** to **NGET**, results in substantial amendment to the **Bilateral Agreement**.

Modification	Any actual or proposed replacement, renovation, modification, alteration or construction by or on behalf of a **User** or **NGET** to either that **User's Plant** or **Apparatus** or **Transmission Plant** or **Apparatus**, as the case may be, or the manner of its operation which has or may have a **Material Effect** on **NGET** or a **User**, as the case may be, at a particular **Connection Site**.

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*Tim Ellingham* *Windmill Hill* *Swindon* *SN7 7LR*
Company Name:	*RWE Supply and Trading*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of

	electricity. iii. Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Not quite depending on how storage is handled, competition may be affected. Competition would also be affected if Units in the UK are subject to more stringent rules, due to a Substantial Modification, which are not applied across the continent.
2	Do you support the proposed implementation approach?	I am broadly ok with the proposal less the points I have raised.
3	Do you have any other comments?	I am not clear on how battery storage is to be handled in respect to when it is exporting. Is it a demand site or a Power Generating Module, over a full cycle it would be a net demand unit, and not being a pump storage unit it would then be a demand site. However, how are negative demands handled? I see no mention of such a thing in the EU code or in the 104 implementation, should there be something explicit?
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	Would more likely be a new modification *If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, https://www.nationalgrid.com/uk/electricity/codes/grid-code and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating	

	to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	
12	**Consultation question specifically for Transmission Licensees**	

	As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	

Definition of EU Code user, EU Grid Supply Point, Substantial Modification and Application to existing

As with the implementation of the RfG (631/2016) we find that the test applied for evaluation of a Supply Point to become an EU Code User or EU Grid Supply Point does not accurately reflect the wording in 2016/1388.

As with 2016/631 the trigger for becoming, either, an EU Code User or EU Grid Supply Point is the requirement, and approval of, a NEW connection agreement. Substantial Modification is not a term in 2016/1388. The following is the key step from 2016/1388 Article 4.1.a

(ii) if the relevant system operator considers that the extent of the modernisation or replacement of equipment is such that a new connection agreement is required, the system operator shall notify the relevant regulatory authority or, where applicable, the Member State; and

EU Code User	~~(h) A **Network Operator** who's **total System** was first connected to the **Transmission System** after 7 September 2019 or who had placed **Purchase Contracts** for its **Main Plant and Apparatus** after 7 September 2018 or had substantially **Substantially Modified** their **Network Operators System** after 7 September 2019.~~ ~~(i)~~(h) A **Network Operator** who's ~~connects a new substation~~ entire distribution **System** was first connected to the **Transmisison System** on or after 7 September 2019 or who had placed **Purchase Contracts** for its **Main Plant** and **Apparatus** in respect of its entire~~total~~ distribution **System** ~~**Main Plant and Apparatus**~~ after 7 September 2018. ~~in respect of a new Substation or had substantially **Substantially Modified** their **Transmission** connected substation after 7 September 2019~~. In this case, a **Network Operators** entire **System** would only have **EU Grid Supply Points** at each **Connection Point** with the **National Electricity Transmission System.** ~~(i)~~(i) A **Non Embedded Customer** who's **Main Plant and Apparatus** at each **EU Grid Supply Point** was first connected to the **Transmission System** after 7 September 2019 or who had placed **Purchase Contracts** for its **Main Plant and Apparatus** at each **EU Grid Supply Point** on or after 7 September 2018 or is the subject of a ~~had substantially~~ **Substantially** **Modificationed** ~~their **Plant and Apparatus**~~ on or after 7 September 2019.
EU Generator	A **Generator** or **OTSDUA** who is also an **EU Code User**.
EU Grid Supply Point	A point of supply from the **National Electricity Transmission System** to **Network Operators** or **Non-Embedded Customers** where:- (i) the **Network Operator** or **Non Embedded Customer** had placed **Purchase Contracts** for its **Main Plant** and **Apparatus** at that **Grid Supply Point** on or after 7 September 2018 or (ii) the **Network Operators** or **Non Embedded Customers Main Plant** and **Apparatus** at that **Grid Supply Point** was first connected to the **Transmission System** on or after 7 September 2019 or (iii) the **Network Operator** or **Non Embedded Customer** is the subject of a **Substantial Modification** at that **Grid Supply Point** on or after 7 September 2019.

Substantial Modification in itself is poorly defined,

Substantial Modification	A **Modification** in relation to modernisation or replacement of the **User's Main Plant and Apparatus**, which, following notification by the relevant **User** to **NGET**, results in substatantial amendment to the **Bilateral Agreement** and which need not have a **Material Effect** on **NGET** or a **User**.

What is a substantial amendment to a Bilateral Agreement? Not that it should matter as the test should be for a NEW Bilateral Agreement. If the term and process around Substantial Modification is kept then Ofgem risk incurring more refereals due to disagreements over whether the change was sunstantial or not. Having the decision based around the need for a 'NEW' Agreement will only end up refering the few occassions when a new agreement is actually required.

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	Alastair Frew
Company Name:	ScottishPower Generation
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the

	Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Yes
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	No
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, https://www.nationalgrid.com/uk/electricity/codes/grid-code and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	

7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	All DRS need to be treated the same way along with other service providers supply services via existing routes.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	There will also be SOGL prequalification requirements for Demand Response Service Providers which will need to be added somewhere.
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	No
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	

	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	Definitions section **Compliance Statement** Change the following paragraph as follows **"Network Operators Total System where such Network Operators Total System comprises solely of** Plant and Apparatus **procured after 7 September 2018 ~~or~~ and was connected to the** National Electricity Transmission System **after 7 September 2019. In this case, all connections to the** National Electricity Transmission System **would comprise only of** EU Grid Supply Points**; or"** **Demand Response Provider** Change one paragraph as follows "A party (other than NGET) who's Main Plant and Apparatus was first connected to the Total System on or after 7 September 2019, ~~or~~ and who had placed Purchase Contracts for its Main Plant and Apparatus after 7 September 2018 or is the subject of a Substantial Modification on or after 7 September 2019 and has an agreement with NGET to provide a Demand Response Service(s). **EU Code User** Change the following 2 paragraphs as follows "(h) A Network Operator who's entire distribution System was first connected to the Transmission System on or after 7 September 2019 ~~or~~ and who had placed Purchase Contracts for its Main Plant and Apparatus in respect of its entire distribution System after 7 September 2018." "(i) A Non Embedded Customer who's Main Plant and Apparatus at each EU Grid Supply Point was first connected to the Transmission System after 7 September 2019 ~~or~~ and who had placed Purchase Contracts for its Main Plant and Apparatus at each EU Grid Supply Point on or after 7 September 2018" **EU Grid Supply Point** Definition needs to be rewritten to get the ors and ands correct as follows A point of supply from the **National Electricity Transmission System** to **Network Operators** or **Non-Embedded Customers** where:- the **Network Operators** or **Non Embedded Customers Main Plant** and **Apparatus** at that **Grid Supply Point** was first connected to the **Transmission System** on or after 7 September 2019 and had placed **Purchase Contracts** for its **Main Plant** and **Apparatus** at that **Grid Supply Point** on or after 7 September 2018, or is the subject of a **Substantial Modification** at that **Grid Supply Point** on or after 7 September 2019. **GB Code User** Subparagraph (d) date for substantial modification needs changed from 2018 to 2019.

		Substantial Modification To deal with various difficulties with DCC text (and RfG & HVDC) this definition may work better A Modification in relation to modernisation or replacement of the User's Main Plant and Apparatus, which, following notification by the relevant User to NGET, results in NGET notifying the Authority that they believe a new connection agreements is required and the Authority agreeing.

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*Garth Graham (garth.graham@sse.com*
Company Name:	*SSE Generation Ltd.*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the

	Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Given that the proposal is currently deficient in terms of the lack of detail around the technical requirements that new Transmission-connected Demand Facilities, new Transmission-connected Distribution Facilities, new Distribution Systems and new Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators have to comply with we can't therefore say that we believe that GC0104 does better facilitate the applicable Grid Code Objectives.
2	Do you support the proposed implementation approach?	We note the recent public statement of the Commission that, in accordance with the existing transparency rules (set out in Directive 2015/1535), **the technical requirements** associated with the European Connection Codes (RfG, DCC and HVDC) <u>are</u> required to be notified to them (the Commission) and the other Member States (as per 2015/1535) three months <u>in advance</u> of them being applied in the Member State. Given that the stated purpose of GC0104 is (according to proposal) to set out the technical requirements for new users this means, as the Commission has noted, that the legal obligations as set out in Directive 2015/1535 are applicable to GC0104. Only if the proposed GC0104 implementation approach fully accords with this (2015/1535) (i.e. includes all technical requirements *within the Grid Code* rather than specific technical requirements (parameters) being referred to within BCAs) requirement can we support it.
3	Do you have any other comments?	We note that the title page of this GC0104 Workgroup consultation states that: *"**Purpose of Modification:*** *<u>This modification will set out</u> within the Grid and Distribution Codes the following compliance*

		obligations in the European Network Code – Demand Connection Code (DCC): *1. Technical requirements for new* Transmission-connected Demand Facilities; Transmission-connected Distribution Facilities and Distribution Systems.* *2. Technical requirements for Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators."* [emphasis added] A similar point (that GC0104 was to address the technical requirements of the DCC) was made in the opening moments of the webinar / podcast held by the Proposer on 21st March 2018. However, what is striking is the lack of detail of the complete actual technical requirements themselves (including country specific parameters)within the consultation document itself and the associated legal text. This lack of technical detail (which is, apparently, to be provided in later documents – such as a future version of the 'Ancillary Services agreement') has severely limited our (and other stakeholders) ability to respond meaningfully to this consultation. It has also unduly restricted our ability to raise WG Consultation Alternative Request(s) for the Workgroup to consider as we cannot see the complete technical requirements detailed in the Original proposal (and thus determine what, if any, potential alternatives, we wish to raise). Given that the TSO has had circa 18 months to develop the necessary complete technical requirements for the application of the DCC in GB it is disappointing that this is still not forthcoming, In addition, the lack of detail provided on the part of the TSO would also appear to be contrary to Article 6(3) (b) of DCC as it fails to ensure transparency. Furthermore this lack of detail points to the wider concern that harmonisation is not being applied, with the GC0104 proposal. This lack of harmonisation in the GC0104 proposal will lead to increased costs for consumers, will not achieve the best social welfare outcome and will not be reasonable, proportionate or efficient.

		We note that a key requirement of the DCC, which appears to be overlooked by the Proposer, is that "*Harmonised rules for grid connection for demand facilities and distribution systems should be set out in order to provide a clear legal framework for grid connections, facilitate Union-wide trade in electricity, ensure system security, facilitate the integration of renewable electricity sources, increase competition, and allow more efficient use of the network and resources, for the benefit of consumers.* " However, there appears to be a theme running through the GC0104 proposal that the TSO will agree 'bespoke' technical requirements and commercial terms for certain parties; such as some providers of DSR and / or some demand units and / or demand facilities; after September 2018 which dis-apply some or all of the DCC obligations[1] on those parties. Not only would this be discriminatory (which is contrary to Article 6(3) (a) of the DCC) it would also mean that these 'bespoke' technical requirements and commercial terms for certain parties would be hidden from all other stakeholders – this would be contrary to Article 6(3) (b) of DCC as it fails to ensure transparency. It would also be contrary to the requirements of harmonisation (as some providers of DSR would be obliged by the TSO to meet all the DCC requirements whilst other providers may not be equally obligated to meet all the DCC requirements, by the TSO). In this respect we note that the obligations on the DSR providers (as well as new connecting parties) set out in the DCC *override anything that they may 'agree' with the TSO*. If this scenario (where 'bespoke' technical requirements and commercial terms for certain parties are 'agreed' with the TSO) were to arise, then the DSR provider(s) cannot rely on the fact that they have an 'agreement' with the TSO when considering their compliance with the DCC (which is not the same

[1] Whilst GC0104 deals with the DCC we note that the definition of SGUs within SOGL makes reference to the DCC definition – DSR providers are thus bound by the SOGL obligations both as new and existing DSR providers. Accordingly, 'bespoke' technical requirements and commercial terms for certain parties proffered by the TSO whereby those parties are relieved from some or all of the SOGL obligations would, for the reasons set out here, be incompatible with the SOGL in the context of harmonisation, transparency and non discrimination.

		as the proposed TSO's compliance approach set out in the GC0104 proposal). In respect of Article 4(1) (a) (iii) we note the statement at the bottom of page 27/ top of page 28 of the Workgroup consultation that : "*In terms of Article 4(1), the working group discussed the issues (eg time delays, resource requirements) associated with Ofgem reviewing and determining whether parties should be treated as "new" or "existing" in all these cases . This was considered unnecessary where the generator and system operator agreed about its status. We considered that a practical interpretation of Article 4(1) was that we reviewed and decided whether parties should be treated "new" or "existing" where there was a dispute about whether the generator should be treated as "new" or "existing".*" We make two observations. Firstly, Article 4(1) (a) (iii) requires that: *"the relevant regulatory authority or, where applicable, the Member State shall decide if the existing connection agreement needs to be revised or a new connection agreement is required and which requirements of this Regulation shall apply"* [emphasis added] We see no wording in Article 4(1), or elsewhere in the DCC, that permits (even if the parties - the TSO and connecting party / DSR provider - all agree) this requirement on the NRA to be delegated, by the NRA, to any other party (or parties, with or without them being in agreement) and only to come to the NRA in the event of a dispute. Given this it appears that the duties in Article 4(1) (a) (iii) reside with the NRA alone and must be exercised accordingly by the NRA. Secondly, with respect to the suggested delegation of the 4(1) (a) (iii) requirements by the NRA, we note the statement from Ofgem in the recent P362 consultation document[2] (which looked at the possibility of delegating the Authority's statutory duties with regard to derogations to (in the case of

[2] https://www.elexon.co.uk/mod-proposal/p362/

		P362) the BSC Panel): "*From a legal perspective my preliminary thoughts are that to permit such an approach may be unlawful on the basis that it would fetter the Authority's discretion and/or purport to delegate the Authority's functions to a 3rd party.* *The Authority is given statutory authority to issue and modify the transmission licence. The licence itself obligates to licence holder to create the code and tightly controls the circumstance within which those codes may be modified, with the Authority ultimately approving modifications in each case. Whilst a derogation may be time-limited, for a set period of time and directed for the benefit of one or more parties it nevertheless would modify the effect of the code for that party for the duration of the derogation. There is an argument therefore that a "derogation" is a type of modification, the delegation of which to 3rd party would be to delegate an important part of the Authority's functions. We think that from a policy and legal perspective it is important that the Authority retains ultimate direction over the derogations process*." [emphasis added]
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, https://www.nationalgrid.com/uk/electricity/codes/grid-code and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	The approach to be followed by providers of demand response services should, according to the DCC, be harmonised. We see no recognition of this requirement for harmonisation by the Proposer of GC0104. Without this harmonisation there is a risk that DSR providers have to meet multiple requirements for the same demand modulation depending on whether it is provided to the relevant system operator or relevant TSO. As noted above, this lack of harmonisation in the GC0104 proposal will lead to increased costs for

		consumers, will not achieve the best social welfare outcome and will not be reasonable, proportionate or efficient.
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	Given the total lack of detail in this consultation around what the 'Ancillary Services agreement' requires of aggregators; in terms of the DCC; it is difficult to say what the rights and obligations, in totality, are and, therefore, it is difficult to say if this has been suitability allowed for in the drafting of ECC and DCP9.
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	Given that the DCC obligations are to be harmonised then so should the documentation; i.e. it should not matter whether the service is provided to the relevant system operator or the relevant TSO, in both cases the form to be completed should be the same and should only need to be completed once. Notwithstanding the above, we note that the General Data Protection Regulation (GDPR) is due to be applicable in the near future. We notice that the draft installation document contains customer personal data – could the Proposer please confirm, in light of the GDPR obligations, that the proposed installation document is fully compliant with the GDPR obligations.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	Reviewing the proposed definition in respect of 'EU Code User' it appears to have missed the scenario where a Network Operator has (i) new transmission connected distribution facilities or (ii) new distribution systems or (iii) has, according to Article 4(1) (a) (i), modernised or replaced equipment impacting the technical capabilities of an existing transmission connected distribution facility or <u>the</u> distribution system. In which case they would be classified as an 'EU Code User'. This does not appear to have been reflected in the treatment of GSPs and EU GSPs.
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient	We do <u>not</u> agree that the DRSC reflects the requirements of DCC and provides sufficient

	information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	information for Demand Response Providers. The draft DSRC has multiple references to an 'Ancillary Services agreement'. However, the documentation of this 'Ancillary Services agreement', duly amended to reflect the requirements of the DCC, has not been provided as part of the Workgroup consultation. This has unduly impeded our ability to respond to this consultation (as we are, in effect, doing so whilst being 'blind' to all the technical requirements associated with DSR). Furthermore, from what little we have seen within the DSRC, it would seem that there has been a misunderstanding, on the part of the Proposer, around what DSR services fall within the remit of the DCC. Based on the definitions within Article 2 we can see that from the date of application of the DCC that <u>all new demand units</u> used by demand facilities that provide demand modulation to the relevant system operators or relevant TSOs will be required to comply with the DCC. It is not clear that the GC0104 proposal accepts this point. Furthermore, we note that Ofgem's CACoP principles do not apply to the governance of the 'Ancillary Services agreement'. In our view the technical requirements and associated terms and conditions for the entire DCC application in GB should be subject to open and transparent governance which is fully in accordance with CACoP including, in particular, the ability for stakeholders to propose amendments. However, as currently drafted within GC0104, this is not to occur - as a closed and non transparent governance approach applies to the 'Ancillary Services agreement' arrangements.
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	The proposal does <u>not</u> sufficiently discharge the DCC obligations as it lacks all the necessary detail on the technical requirement that parties to whom the DCC applies will have to comply with. GC0104 should be the 'complete package' – however, it is not. Instead consultation respondents, the Workgroup, the GCRP and ultimately the Authority are being asked to sign, it would seem, a 'blank cheque' for the TSO to fill in (the necessary technical requirements)

		later. This is, unfortunately, a direct effect of the decision taken by the Proposer to apply a 'policy' approach' rather than a 'legal' approach' when it comes to implementing the European Network Codes within the GB industry codes. There are too many examples to list here; but suffice to say that an impartial review of the code mapping shows that the necessary actual technical detail needed by Users for many items within the DCC is still lacking in the GC0104 'solution' to date.
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	N/A
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	In addition to all the points we noted above, which will need to be fully reflected into the legal text, we would additionally note the following: Why has the use of the term 'EU Code User' been deleted from the body of the text? That being the case, why has the definition of EU Code User been both retained and amended to seek to reflect the DCC? The definition of 'Substantial Modification' is incompatible with Article 4 (1) (a) (i) which requires that: "*demand facility owners, DSOs, or CDSOs who intend to undertake the <u>modernisation of a plant or replacement of equipment impacting the technical capabilities</u> of the transmission-connected demand facility, the transmission-connected distribution facility, the distribution system, or the demand unit*

		shall notify their plans to the relevant system operator in advance"

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	Grace Smith 0755 443 9689 Grace.smith@ukpowerreserve.co.uk
Company Name:	UK Power Reserve Ltd
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	UKPR support this modification and believes it will better facilitate the Grid Code Objectives.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Yes, UKPR believes that GC0104 better facilitates the Grid Code Objectives.
2	Do you support the proposed implementation approach?	Yes, UKPR is confident the modification has the correct implementation approach.
3	Do you have any other comments?	UKPR is concerned at the time taken to reach this stage of ensuring GB compliance to EU Regulations. There have been some process management issues that have potentially caused delays, but we are satisfied this modification will be implemented within a suitable timeframe.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	No, UKPR supports the modification proposal.

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	Yes, although as the DNO-DSO transition evolves, they should not be precluded from future discussions.
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	N/A
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	UKPR do not see any necessary distinction between LV and HV customers. At the moment, the nature of potential Demand Response services is unclear, but the proforma includes sufficient information.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	UKPR supports the approach taken in the Workgroup report.
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	No, UKPR believes the definitions are fit for purpose.
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	Yes, UKPR agrees the DRSC is fit for purpose.

11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	N/A
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	UPR has no issues to raise on the proposed legal text.

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*Graeme Vincent* *graeme.vincent@spenergynetworks.co.uk*
Company Name:	*SP Energy Networks*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity 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) 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 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; and v. To promote efficiency in the implementation and administration of the Grid Code arrangements. *The Distribution Code objectives are:* i. Permit the development, maintenance, and operation of an efficient, coordinated and economical System for the distribution of electricity. ii. Facilitate competition in the generation and supply of electricity. iii. Efficiently discharge the obligations imposed upon DNOs

	by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators. iv. Promote efficiency in the implementation and administration of the Distribution Code.

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0104 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	As the proposal implements requirements arising from the Demand Connection Code we believe that this better facilitates the objectives.
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	SPEN believe that the working group has strived to achieve a balance between providing a sufficient level of detail in the Grid and Distribution Codes to ensure that GB can comply with the requirements of the DCC whilst still allowing the emerging DSR practices to develop and innovate appropriately without being constrained by prescriptive hard coded text. Whilst significant effort has been made in relation to definitions, SPEN still have concerns in relation to the interpretation and application of the EU GSP definition. We would support the provision of further clarity in this regard.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No but are supportive of a proposed alternative being raised on behalf of the DNOs.*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the	SPEN generally agree with the split of services as identified.

	other DSR services in Article 27 are services for the Transmission System Operator?	
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	As the roles of aggregators is very much in its infancy and is still developing, we believe that an appropriate level of detail has been adopted within the drafting.
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	SPEN have no additional comments and agree that there is no distinction necessary for HV and LV customers.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	No
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	Yes. Further clarity on the application i.e. what constitutes a significant modification and thereby causing a GSP to become an EU GSP would be welcome.
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	No comment at this time.
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	The proposals contained within this modification sufficiently discharge the DCC obligations.
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree	No, from an SPT perspective we have not identified any areas of disagreement, and believe it is appropriate for the relevant TSO to consult with other TSO to ensure a coordinated and consistent approach.

	with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following the closure of this Consultation.	

Grid Code Workgroup Consultation Response Proforma

GC0104 EU Connection Codes GB Implementation – Demand Connection Code

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 **5pm** on **29 March 2018** to 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 by the Workgroup.

Any queries on the content of the consultation should be addressed to Chrissie Brown at Christine.brown1@nationalgrid.com

Respondent:	*Nigel Turvey, 0117 933 2435, nturvey@westernpower.co.uk*
Company Name:	*Western Power Distribution*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*WPD supports the purpose of the consultation and the general implementation method.* *Some more specific comments are detailed in the questions below.*

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0100 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	No
2	Do you support the proposed implementation approach?	WPD agrees that the implementation of technical requirements through codes and commercial requirements through contracts is the best of the alternatives.
3	Do you have any other comments?	WPD has concerns over the treatment of significant modifications to GSPs and the additional requirements that could be placed on networks. This concern is enhanced by the apparent difference between the Workgroup consultation document and the proposed legal text. For example Page 13, article 15 of the consultation expresses that if an existing DNO was to significantly modify their GSP (thus becoming an EU GSP) they

		would not be subject to Reactive Power requirements. However ECC 6.4.5 seems to imply the opposite.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No*

Specific GC0104 questions

Q	Question	Response
5	Do you agree that DNOs should only implement the Demand Response requirements relating to Demand Response Active Power Control and Demand Response Reactive Power Control, recognizing that the other DSR services in Article 27 are services for the Transmission System Operator?	WPD broadly agrees with this distinction. However confusion may arise where a DNO implements a service on the behalf of the Transmission system operator (as will be trialed in the WPD RDP work with National Grid). This is also the case in the Power Potential project.
6	Are the rights and obligations of aggregators appropriately allowed for in the drafting of ECC and DPC9? If not, what additional provisions would you suggest?	The current drafting explicitly allows for participation of aggregators and third parties. If anything the proposal favours third parties over direct customers as they have less onerous requirements in the pro-formas. WPD would encourage equal treatment of aggregators and direct customers.
7	Do you have any comments on the approach taken with the Installation Document pro-forma proposed for Demand Response services contracted to DNOs? Do you agree that there is no distinction necessary here for HV or LV customers?	WPD agrees with the pro-forma approach subject to the comment in Q6. WPD agrees that there is no distinction necessary for HV and LV customers.
8	Do you have any views on how to tailor the compliance process, and documentation, to accommodate both individual Demand Response Service Providers and those Demand Response Service Providers who are aggregators?	As per question 6, WPD would encourage the maximum alignment between compliance and documentation for aggregators or direct customers. For example the current pro-formas require more information on the specific Demand Units for individual customers over aggregators (Technology types, Manufacturers reference number…) Aggregators should be expected to provide the data expected of customers. In addition WPD believes that some of the requirements should be better defined to avoid confusion (for example is the modulated output value

		expected to be the Maximum or Minimum response capacity?). Finally the compliance checks must be reviewed with a view to the practicality of testing required. For example the current DPC9 wording allows significant flexibility for DNOs in terms of the manner in which modulation signals are sent and the response time. By contrast the pro forma requires customers to respond to a non-specific signal within 5 seconds.
9	Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?	No Comment.
10	Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.	No Comment.
11	If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?	WPD believes the DCC obligations are discharged.
12	**Consultation question specifically for Transmission Licensees** As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.	
	Legal text comments	
	If you believe there are issues in the legal text, can you please bring these to our attention by using the space provided on the response proforma. These will then be discussed at the GC0104 legal text session planned following	WPD has identified the following concerns around the legal text of DPC9. - The definition of Demand Service Provider include direct customers, however these are then treated as a distinct subset. For example DPC9.1.1and DPC 9.1.2 could be merged.

	the closure of this Consultation.	This unnecessary distinction is carried throughout the text (9.2.1, 9.2.2….) - The definition of a Demand Unit may cause confusion for a system made up of components and sub-components. Clarification could be provided on the limits of the definition. For example in a BMS with multiple HVAC units each comprised of fans and pumps, what is a demand unit and what isn't? - Demand units including storage are exempt from DPC9. Further clarification may be required as many systems could be considered to have storage (a HVAC unit may claim to have thermal storage).

Annex 7 Summary presentation – Workgroup Consultation responses

GC0104
Workgroup Consultation responses



Workgroup meeting 5 – 4 April 2018

GC 104 Responses (11)

- ENA
- SSE Generation Ltd
- NGET
- RWE
- The ADE
- Flextricity
- SP Generation
- UKPR
- ENWL
- Northern PowerGrid
- SP Energy Networks

Standard Consultation questions

1.Do you believe that GC0104 Original or any potential alternatives for change better facilitate the Grid Code Objectives?

- **9/11** Yes (one stating that new DSR requirements are more confusing – Flextricity)
- **1/11** Not quite depending on how storage is handled (RWE)
- **1/11** No due to the modification being deficient in terms of lack of detail around the technical requirements (SSE)

2.Do you support the implementation approach?

- **9/11** Yes
- **1/11** Broadly ok (RWE)
- **1/11** No – Directive 2015/1535 3 month ahead of implementation submission to the Commission required and technical requirements required in the Grid Code not in BCAs (SSE)

Standard Consultation questions

3.Other comments?

- **SPEN (SP Energy Networks)** The Workgroup have strived to achieve a balance between providing a sufficient level of detail in the Grid and Distribution Codes to ensure that GB can comply with the requirements of the DCC whilst still allowing the emerging DSR practices to develop and innovate appropriately without being constrained by prescriptive hard coded text. Whilst significant effort has been made in relation to definitions, SPEN still have concerns in relation to the interpretation and application of the EU GSP definition. We would support the provision of further clarity in this regard.
- **ENA&Northern PowerGrid** Demand Side Response services are in their infancy. Requirements in GB must do no more than reflect the absolute basics of DCC. Balance appears to have been achieved in the latest drafting.
- **Flextricity –** Confusion will be created in the market if implemented as is. Guidance documentation required to add clarity on what documentation is required
- **RWE –** Storage and how it is being handled when exporting?
- **SSE -** Issues raised around being able to raise an alternative request due to the lack of technical requirements outlined within the Consultation document…

Standard Consultation questions

Comments continued

- **SSE** – Issued also raised around harmonisation. Reference to P362 and Authority delegations.
- **UKPR –** concern around time taken to get the requirements implemented but content that this will be completed in time

Alternative request – Question 4

- One alternative request received from Northern PowerGrid to be discussed this afternoon

Specific GC0104 questions

Q11. If you do not believe the proposal sufficiently discharges DCC obligations, can you please provide examples where this is the case?

- **5/11** No comment
- **5/11** Discharges requirements
- **1/11** Policy approach rather than legal, no technical requirements in mapping (SSE)

Specific GC0104 questions

Q12. Consultation question specifically for Transmission Licensees

As a Transmission Licensee, are there any aspects of this consultation you do not agree with from a Transmission Licensees perspective? In particular do you have any comments with regard to DCC Articles 28 and 29 in particular Article 29(2)(d) where there is a requirement for the relevant TSO to consult with TSO's in the Synchronous Area.

- No, from an SPT perspective we have not identified any areas of disagreement, and believe it is appropriate for the relevant TSO to consult with other TSO to ensure a coordinated and consistent approach
- NGET – completed through Workgroup and Code Administrator Consultation

4 April 2018

Deep dive on:

Alternative request received and ***question 9*** of Workgroup Consultation:

- *Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?*

Question 10 and DRSC

- *Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.*
- **Start legal text review**

Specific GC0104 questions

Q9. Can you see any issues with treating GSPs and EU GSP's in the way set out in the Glossary and Definitions and European Connection Conditions of the solution?

- **5/11** No comment
- **4/11** Further clarity required/alternative request
- **2/11** Fit for purpose/no issues

Specific GC0104 questions

Q10. Do you agree that the DRSC reflects the requirements of DCC and provides sufficient information for Demand Response Providers. If not, please state why do not believe this to be the case and what you believe would provide a better alternative.

- **1/11** ADE response to be reviewed
- **3/11 No comment**
- **5/11 Yes** plus one comment around DRSC A.2 - Excess of what is required in DCC? **(ENWL)**
- **2/11 No** – Not enough detail to understand obligations, more documents to read rather than in one place. Obligations in DRSC could be put in STCs to avoid this **(Flextricity) No -** Ancillary Service agreement Governance an issue and also this modification should be the whole package and is not – does not reflect requirements **(SSE)**

Annex 8 WACM1 Alternative form – Official alternative

Alternative request Proposal form

Grid Code

GC0104 –WACM1

Mod Title: As per original (Significant Modification Definition)

Purpose of alternative Proposal:
As per the Original.

Date submitted to Code Administrator: April 2018

You are: A Workgroup member

Workgroup vote outcome: Formal alternative

What stage is this document at?

01	Proposed alternative
02	Formal Workgroup alternative

Any Questions?

Contact:
Chrissie Brown
Code Administrator

christine.brown1@nationalgrid.com

01926 65 3328

Alternative Proposer(s):
Alastair Frew
Company

alastair.frew@scottishpower.com

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Contents

1 Alternative proposed solution for workgroup review

During the GC0102 Code Administrators Consultation comments were received suggesting that the proposed definition of **Significant Modification** did not fully represent the legal requirements of the network codes Requirements for Grid Connection of Generators (RfG) EU 2016/631 and Requirements for Grid Connection of High Voltage Direct Current Systems (HVDC) EU 2016/1447. The GC0102 proposal has progressed and is now with the Authority for final determination. This modification proposal GC0104 deals with the Network Code on Demand Connection (DCC) EU 2016/1388 which has the same legal requirements as other two EU network code[1] and whilst initially the Original proposal was to use the same definition of **Significant Modification** as previously set in GC0102 the Original proposal has now been changed to partially match this Alternative proposal, however this is still believed not to cover all requirements. This Alternative proposal will change the definition of **Significant Modification** to be more representative of the legal requirements of the DCC and as a consequence will also improve compliance with the RfG and HVDC requirements.

2 Difference between this proposal and Original

This Alternative proposal will use all the same changes in the original GC0104 proposal except where the Original proposal slightly alters the definition of **Significant Modification** this Alternative proposal will delete the original definition and insert a new definition.

3 Justification for alternative proposal against Grid Code objectives

The application of the DCC connection conditions to existing facilities are dealt with in Article 4 paragraph 1 which states:-

"1.Existing transmission-connected demand facilities, existing transmission-connected distribution facilities, existing distribution systems and existing demand units that are or can be used by a demand facility or a closed distribution system to provide demand response services to a relevant system operator or relevant TSO, are not subject to the requirements of this Regulation, except where:

(a) an existing transmission-connected demand facility, an existing transmission-connected distribution facility, an existing distribution system, or an existing demand unit within a demand facility at a voltage level above 1 000 V or a closed distribution system connected at a voltage level above 1 000 V, has been modified to such an extent that its connection agreement must be substantially revised in accordance with the following procedure:

(i) demand facility owners, DSOs, or CDSOs who intend to undertake the modernisation of a plant or replacement of equipment

[1] Set out in Article 4 of the three respective Regulations.

impacting the technical capabilities of the transmission-connected demand facility, the transmission-connected distribution facility, the distribution system, or the demand unit shall notify their plans to the relevant system operator in advance;

(ii) if the relevant system operator considers that the extent of the modernisation or replacement of equipment is such that a new connection agreement is required, the system operator shall notify the relevant regulatory authority or, where applicable, the Member State; and

(iii) the relevant regulatory authority or, where applicable, the Member State shall decide if the existing connection agreement needs to be revised"

The sections of highlighted yellow text are identical to the wording in the RfG and HVDC codes with only the equipment types being changed, so the rules for modification are to be the same for all equipment types.

The process for dealing with such modifications is currently (as proposed in GC0102) that if an existing installation is determined to be subject to a **Substantial Modification** then the new requirements in the European Connection Conditions shall apply. This Alternative proposal will change this arrangement, by clarifying the definition of **Substantial Modification**, in that the Authority will decide if, and to what extent, the Bilateral Agreement is to be amended (or a new one issued) where a modernisation or replacement of equipment impacts on the technical capability.

The current definition of **Substantial Modification** as proposed in GC0102 is:-

"A **Modification** in relation to modernisation or replacement of the **User's Main Plant and Apparatus**, which, following notification by the relevant User to NGET, results in substantial amendment to the **Bilateral Agreement** and which need not have a **Material Effect** on **NGET** or a **User**."

The GC0104 Original modification proposal is changing this definition to:-

"A **Modification** in relation to modernisation or replacement of the **User's Main Plant and Apparatus** which impacts its technical capabilities, which, following notification by the relevant **User** to **NGET**, results in substantial amendment to the **Bilateral Agreement**."

Whilst this definition does deal with some aspects of the Network Code requirements it (i) does not limit the applicability to just the modernisation or replacement of equipment and its impact on the technical capability; and (ii) it leaves the key decision making duties to NGET and not the Authority (which the Network Codes explicitly states). Although under current proposed (GC0102/GC0104 Original) arrangements Users, if they disagree with NGETs application of the **Substantial Modification** rules, can raise a dispute to the Authority for determination, this arrangement is the opposite

too that specified in the Network Codes in that the decision on the application to the User being made by NGET and not the Authority.

The following proposed Alternative definition of **Substantial Modification** makes it clear it is an Authority decision:-

"In relation to any **GB Code User**, any actual or proposed modernisation or replacement of the **User's Main Plant and Apparatus**, impacting the technical capabilities of the **User's Main Plant and Apparatus***,* which, following notification by the relevant **User** to **NGET**, results in **NGET** requesting, to the **Authority**, that a New **Bilateral Agreement** is required and the **Authority** deciding that either a substantial revision to the existing **Bilateral Agreement** or a new **Bilateral Agreement** is required and which elements of the European Connection Conditions will be applied. "

For the avoidance of doubt this Alternative proposal does not mean every modification nor Bilateral Agreement change needs to go to the Authority it is only the changes which result in the potential application of the new European Connection Conditions being applied to installations to which, currently, only the existing Connection Conditions apply.

Impact of the modification on the Relevant Objectives:	
Relevant Objective	**Identified impact**
To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	**Positive**
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)	**Positive**
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	**Positive**
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; and	**Positive**
To promote efficiency in the implementation and administration of the Grid Code arrangements	**Neutral**

In broad term the reasons why this Alternative proposal better meet the Applicable Objectives are as per the Original whilst, in addition, also being better in terms of discharging 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.

4 Impacts and Other Considerations

As per the Original.

Consumer Impacts

As per the Original.

5 Implementation

As per the Original.

6 Legal Text

As per the Original except for the following definition:-

Existing Definition to be deleted

Substantial Modification	~~A Modification in relation to modernisation or replacement of the User's Main Plant and Apparatus, which, following notification by the relevant User to NGET, results in substantial amendment to the Bilateral Agreement and which need not have a Material Effect on NGET or a User.~~

and replaced with the new definition

Substantial Modification	In relation to any **GB Code User**, any actual or proposed modernisation or replacement of the **User's Main Plant and Apparatus**, impacting the technical capabilities of the **User's Main Plant and Apparatus**, which, following notification by the relevant **User** to **NGET**, results in **NGET** requesting, to the **Authority**, that a New **Bilateral Agreement** is required and the **Authority** deciding that either a substantial revision to the existing **Bilateral Agreement** or a new **Bilateral Agreement** is required and which elements of the European Connection Conditions will be applied.

Annex 9 Draft legal text comments from Workgroup Consultation

This Annex has been uploaded separately and can be located in the Grid Code Panel papers as Annex 9.