

Modification proposal:	Grid Code GC0104: EU Connection Codes GB Implementation – Demand Connection Code		
Decision:	The Authority ¹ directs ² that the proposed modification to the Grid Code be made		
Target audience:	National Grid Electricity Transmission PLC (NGET), the Grid Code Review Panel, Grid Code users and other interested parties		
Date of publication:	4 September 2018	Implementation date:	7 September 2018

Background

The European Third Energy Package came into force on 3 September 2009. The Requirement for Generators (RfG), Demand Connection Code (DCC) and High Voltage Direct Current (HVDC) codes are part of a suite³ of European Regulations developed following implementation of the Third Package.⁴

- COMMISSION REGULATION (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (RfG) – specifies the technical connection requirements that new generators must abide by.⁵
- COMMISSION REGULATION (EU) 2016/1388 of 17 August 2016 establishing a Network Code on Demand Connection (DCC)– specifies the technical connection requirements that new distribution networks connecting to the transmission system, new demand users connecting to the transmission system and new customers wanting to provide demand side response services, must abide by.⁶
- COMMISSION REGULATION (EU) 2016/1447 of 26 August 2016 establishing a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules (HVDC) – specifies the technical connection requirements that new long distance DC connections, new links between different synchronous areas (e.g. interconnectors) and new DC-connected generation (e.g. offshore wind farms) must abide by.⁷

These European Regulations intend to deliver a harmonised set of rules for the operation of the electricity sector in Europe. The European Regulations aim to help ensure security of supply, facilitate the decarbonisation of the energy sector and create a competitive, pan-European market which benefits consumers.

These European Regulations are directly applicable to GB without having to be transposed into our national laws or regulatory frameworks. European Regulations also take precedence in the legal “hierarchy of laws” over domestic law (i.e. if a domestic law

¹ References to the “Authority”, “Ofgem”, “we” and “our” are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.

² This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

³ Collectively referred to as the European Network Codes (ENCs)

⁴ More information on the European Third Energy Package can be found on our website; [link here](#)

⁵ Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (referred to as the RfG); [link here](#)

⁶ Commission Regulation (EU) 2016/1388 establishing a network code on demand connection; [link here](#)

⁷ Commission Regulation (EU) 2016/1447 of 26 August 2016 establishing a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules (referred to as the HVDC); [link here](#)

is incompatible with a European Regulation, it is the European law which takes precedence).

In GB, we already have existing national technical codes and standards for parties that want to connect to the GB electricity transmission system. The Grid Code covers all material technical aspects relating to connections to, and the operation and use of, the national electricity transmission system (NETS). In accordance with our decision to incorporate the new EU requirements within the existing GB regulatory frameworks,⁸ this modification seeks to amend the Grid Code to ensure that it is compliant and remains consistent with the requirements of the European Network Codes. This will provide accessibility and familiarity to GB parties and utilises the existing code governance processes to apply the new requirements in a transparent and proportionate way.

It is important to note that until we formally leave the EU and the terms of the exit are established, we will continue to participate constructively in EU institutions and the European Internal Energy Market (IEM). We will also continue to comply with and implement EU laws.

This decision letter should be read in conjunction with our decisions on GC0100, GC0101, GC0102, GC0102/DCRP and GC0104/DCRP as together they implement the requirements of the RfG, DCC and HVDC codes in the Grid and Distribution Codes.

The modification proposal

GC0104 was raised by NGET and seeks to implement:

- the scope and applicability of the ENCs;
- the technical requirements for Transmission-connected Demand Facilities; Transmission-connected Distribution Facilities and Distribution Systems.
- the technical requirements for Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators.

Detailed code mapping is available in the annex to the modification report. In this decision letter we highlight the key areas of change.

Previously, a joint GCRP and DCRP Working group was formed as part of Grid Code proposal GC0091 to:

- Comprehensively review the Grid Code to identify those aspects of the DCC requirements which need to be added to the code;
- Undertake a mapping exercise between the EU and GB codes to understand the extent for possible code changes;
- Form proposals, to be taken forward as formal modifications.

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:

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

⁸ Implementing the Electricity EU Network Codes, 18 December 2014; [Link here](#)

2. Operational notification procedure for new connection of transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems
3. Technical requirements of new Demand Units used by a Demand Facility or a Closed Distribution System to provide Demand Response Services to System Operators
4. 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
5. Compliance procedures and requirements: testing, simulations, and monitoring

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 was undertaken in Grid Code and Distribution Code Review Panel Working group GC0091 and allowed GB stakeholders to engage with the European Network Code drafting process.

To implement the technical requirements of the DCC, GC0104 proposes changes to the existing Grid Code sections, including those introduced via GC modification GC0102. In addition, it introduces a new section to the Grid Code, Demand Response Services Code (DRSC), to facilitate the DCC requirements relating to Demand Response Services.

Similarly a new section of the Distribution Code, DPC9, has been introduced as the repository of new DSR requirements for DCC compliance for distribution connected load.

GC0104 incorporates into Grid Code the technical requirements as set out in Articles 12 to 47 of the DCC that cover the five key areas of change highlighted above. The Workgroup set up to consider this Grid Code modification deliberated on these changes. Following Workgroup discussions and the consultation, changes were made to some of the proposed definitions, in particular, the EU Grid Supply Point, to more accurately reflect the requirements in the DCC. The Workgroup also identified that the newly introduced DRSC may be too complex and it was consequently redrafted to improve clarity and to ensure that it ties in with Standard Contract Terms (SCTs). In addition, NGET has undertaken to produce a guidance note which will illustrate how the SCTs will be affected by the DRSC. The SCTs will also be updated to reflect the link to the DRSC.

Substantial Modification as defined in Original and WACM1

For existing connected plant and equipment which will undergo modernisation or replacement, GC0104 has a similar definition of 'Substantial Modification' used for the implementation of ENCs under GC0100-102. If the facilities are deemed to have been substantially modified then the requirements of RfG, DCC and HVDC would apply. Under the Original proposal, NGET would decide if a Substantial Modification requires the connection agreement to be amended or a new one issued, with the ability of users to refer any dispute to the Authority. From the workgroup discussions and proposer's responses to the consultation, this arrangement was considered as an efficient way of

implementing this aspect of ENCs whilst protections remain available to the Users who can refer any disputes to the Authority via NGET's Transmission Licence Condition C9 – 'Functions and Authority'. They considered that this discharges the obligations of the DCC as Ofgem's decision is implicit providing both parties are in agreement. This approach is consistent with the decision we have made on the implementation of RfG and HVDC.

There was also an alternative view on this in the Workgroup, and SP Generation proposed a Workgroup Alternative Code Modification (WACM1), which would require the Authority to decide this. The WACM1 refers to the application of the ENC connection conditions to existing facilities as in Article 4 of the DCC which requires National Regulatory Authority (NRA) to do a determination in such cases.

The only difference between the Original and WACM1 is the definition of Substantial Modification. The Workgroup voted by majority that WACM1 better facilitates the Grid Code objectives.

Grid Code Review Panel recommendation

At the GCRP meeting of 14 June 2018, the GCRP agreed that both the Original modification and WACM1 better facilitated the Grid Code objectives with the majority view that WACM1 is best and should be implemented.

Our decision

We have considered the issues raised by the modification proposal and in the Final Modification Report dated 25 June 2018. We have considered and taken into account the responses to the industry consultation on the modification proposal which are included in the Final Report⁹. We have concluded that:

- implementation of the Original modification proposal will better facilitate the achievement of the objectives of the Grid Code¹⁰ compared to the Grid Code baseline and WACM1, and
- approving the modification is consistent with our principal objective and statutory duties.¹¹

Reasons for our decision

We consider, both, the Original modification and WACM1 to better facilitate Grid Code objectives (i), (ii), (iii) and (iv) and have a neutral impact on (v). We consider that Original modification facilitates Grid Code objective (iv) more efficiently compared to WACM1.

The Proposer and the majority of respondents have, during this modification's consultation phases, commented that the modification better facilitates a number of code objectives. We note these comments and are grateful for the work that industry has done to consider this modification. We have assessed this modification against the applicable objectives with particular focus on (iv) as the primary driver for the modification and (iii)

⁹ Grid Code proposals, final reports and representations can be viewed on NGET's website at: <http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Modifications/>

¹⁰ As set out in Standard Condition C14(1)(b) of NGET's Transmission Licence, available at: <https://epr.ofgem.gov.uk/>

¹¹ The Authority's statutory duties are wider than matters which NGET must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

where we consider the Original modification better facilitates the applicable objective compared to WACM1.

The original proposal and the subsequent WACM1 modify an existing definition, "Substantial Modification". We note that the ENC's, and in particular DCC, do not contain such a term. We consider that the purpose of Article 4 of the DCC is to set out a procedure that needs to be followed where an existing transmission connected facility has gone through modernisation/replacement to the extent that the SO considers that a new connection agreement would be required and in such circumstances there needs to be a process to resolve any disagreement that would arise between the parties if that facility is not prepared to accept the need for a new connection agreement. The existing term "substantial modification" is necessary at an operational level and this is the term that NGET have refined to set the benchmark at where a new agreement would be needed.

Further, we note that the Grid Code does not deal with new connection agreements which are a matter for the CUSC. In our reasoning set out under objective (iv), below, we comment on the existing dispute resolving arrangements available to parties who do not agree on the SO's opinion that a new connection agreement would be required.

Whilst we recognise that Article 4 does not contain a definition for "substantial modification" but rather states that where a facility has been modified to such an extent that its connection agreement must be substantially revised, then NGET may decide that a new connection agreement is required. NGET have revised the existing definition in the FMR to clarify where the threshold which would require a new connection agreement would be breached. Moreover, we don't believe that the definition set out in WACM1 improves on this because all that it achieves is to include the dispute resolution process rather than set a threshold.

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

The scope of these three European Regulations is to harmonise systems across the internal energy market which should help make it more efficient to operate the electricity system by introducing a common and clear set of requirements which every new connection to the electricity network will need to meet.

(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)

Implementation of the DCC should also help facilitate competition in the supply of electricity and system operation. This removes a potential barrier to entry and creates a transparent, level playing field in terms of connection requirements for Transmission-connected Demand Facilities and Distribution Systems, thus improving competition. This modification also facilitates Demand Facilities and Distribution Systems to provide Demand Response Services to System Operators thus promoting competition in the balancing services market.

(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

As stated above, the ENCs aim to introduce commonality and reduce complexity of arrangements across member states. This should improve the security and efficiency of the system as a whole. This modification introduces a new section in the Grid Code – Demand Response Services Code to cater for provision of Demand Response Services to the System Operator which may help further promote the security and efficiency of the national electricity transmission system. We note stakeholders’ concerns on the complexity of this new code, but we are satisfied with the steps taken by NGET in redrafting and in production of guidance notes to promote the understanding of this code in relation to the SCTs.

(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.

We note that the Panel and the majority of respondents agree that GC0104 better facilitates this relevant objective. The Proposer raised GC0104 in response to the requirement to implement the DCC. The European Regulations are legally binding and directly applicable within GB. The modification seeks to ensure that the Grid Code is consistent with European Regulations. We agree that both the Original modification and WACM1 better facilitate this objective.

We note Panel and Workgroup members’ comments, made by them while voting by majority, that WACM1 is the best option. Members in favour of WACM1 have referred to a direct application of the procedure contained in Article 4 of the DCC for substantially modified existing plant or equipment.

We have considered the arguments and procedures as proposed in the Original and WACM1 for dealing with existing plant or equipment which may fall under the definition of substantial modification. We are satisfied that NGET making a decision on this represents an efficient implementation of the DCC within GB Codes, whilst Users will continue to have the existing legal protection for a referral to the Authority for a determination in case of a disagreement.

Regulation 4.2 of Article 4.1 of the DCC sets out that where a connection agreement must be substantially revised to the extent that the relevant system operator *considers that as a result of those changes a new connection agreement is required* and which will trigger the application of the Regulation to the existing facility, that the regulatory authority or Member State shall decide if the existing connection agreement needs to be revised or a new connection agreement is required. We note the debate around WACM1 however, we consider that the existing regulatory and legislative arrangements, in particular the provisions in Standard Licence Condition C9 in conjunction with the protections afforded under section 44B to 44D of the Electricity Act 1989, give effect to the requirements of Article 4.1(a)(iii) with the added benefit that either party may approach the Authority for a decision on whether the existing connection agreement may stand with appropriate revisions.

Therefore in our view the Original proposal adequately and efficiently satisfies the requirements of Article 4 of the DCC.

Decision notice

In accordance with Standard Condition C14 of NGET's Transmission Licence, the Authority hereby directs that Grid Code modification proposal Grid Code GC0104: 'EU Connection Codes GB Implementation – Demand Connection Code' be made.

Peter Bingham
Chief Engineer

Signed on behalf of the Authority and authorised for that purpose