

Stage 01: Modification Proposal

Grid Code

GC0107

Mod Title: The open, transparent, non discriminatory and timely publication of the generic and/ or PGM specific values required to be specified by the relevant TSO(s) and / or relevant system operator et al., in accordance with the RfG.

Purpose of Modification:

This modification will set out within the Grid Code the obligations in the EU Connection Codes as they relate to the specification of certain items by certain obligated party or parties.

The Proposer recommends that this modification should be:

assessed by a Workgroup to form the final proposals for the mod and then proceed to Workgroup Consultation.

This modification was raised on **7 November 2017** and will be presented by the Proposer to the Panel on **15 November 2017** The Panel will consider the Proposer's recommendation and determine the appropriate route.



High Impact: None



Medium Impact: Transmission Owners (including OFTOs and Interconnectors), Distribution Network Operators, Transmission System Users System Operator and Generators



Low Impact: None

What stage is this document at?

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

Contents

1	Summary	3
2	Governance	4
3	Why Change?	4
4	Code Specific Matters	5
5	Solution	5
6	Impacts and Other Considerations	8
7	Relevant Objectives	8
8	Implementation	10
9	Legal Text	10
10	Recommendations	10



Any Questions?

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Timetable

To be discussed at Panel meeting on 15 November 2017. The Proposer has set out in the implementation section that this should be implemented by 18 May 2018.

Workgroup Meeting 1	dd month year
Workgroup Meeting 2	dd month year
Workgroup Meeting 3	dd month year
Workgroup Report presented to Panel	dd month year
Code Administration Consultation Report issued to the Industry	dd month year
Draft Final Modification Report presented to Panel	dd month year
Modification Panel decision	dd month year
Final Modification Report issued the Authority	dd month year
Decision implemented in Grid Code	dd month year

What

The Grid Code will need to be amended to set out the procedure for the publication of those values, as set out in the RfG¹:

- (i) to be specified by the relevant TSO and / or the relevant system operator; and
- (ii) to be coordinated and / or agreed between the relevant TSO and / or the relevant system operator and the power-generating facility owner.

Why

Guidance from BEIS and Ofgem 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.

Recital (15) of the RfG also sets out that:

“The requirements [of the RfG] should be based on the principles of non-discrimination and transparency...”

This modification needs to be undertaken in 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 the RfG (EU) Connection Network Code.

The production of (and ongoing maintenance of) a transparent reporting template, that would arise with this modification, will allow new generators seeking to connect in GB and manufacturers of generation plant and apparatus seeking to sell their equipment in GB to clearly see and understand what the RfG technical requirements are in GB. Thus, for example, if a generator (or manufacturer seeking to sell its equipment in GB) wished to connect and the said equipment fell outside the published applicable RfG value(s) for GB then they would know that a derogation would need to be applied for (if they wished to proceed further with their connection or sale(s)).

How

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

¹ 'Requirement for Generator' Network Code – Regulation 2016/631
<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0631&from=EN>

2 Governance

Given the materiality, complexity and wide-ranging impact of the changes proposed in this Modification, the Proposer believes that self-governance or fast track governance arrangements are not appropriate in this case.

3 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.

Some EU Network Codes/ Guidelines are still in development and these may in due course require a review of solutions developed for those Network Codes/ Guidelines that come into force beforehand. The full set of EU Network Codes/ 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 (TSOG) - entry into force anticipated Summer 2017
- Emergency and Restoration (E&R) Guideline - entry into force anticipated Autumn 2017

The RfG EU Network Code was drafted to facilitate greater connection of renewable generation; improve security of supply; and enhance competition to reduce costs for end consumers, across EU Member States.

The code specifically sets harmonised technical standards for the connection of new equipment for generators.

Significant work to progress GB understanding of these codes and consider the approach for implementation has been undertaken in Grid Code/Distribution Code issue groups GC0048² for RfG

However, this ‘pre-work’ has not considered aspects relating to the publication of the associated value or values for the connection of new equipment for generators in GB.

² Plus GC0090 (HVDC) and GC0091 (DCC).

4 Code Specific Matters

Technical Skillsets

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

Reference Documents

Requirements for Generators legal text:

<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0631&from=EN>

5 Solution

The initial thinking is that the Ofgem Multiple TSO Allocation spreadsheet³ will be amended, by the addition of columns to the right (of those already shown) to act as a transparent reporting template.

The Grid Code will require the parties concerned to populate the template, as appropriate.

The transparent reporting template will show (1) the party or parties who are responsible for the specification of the value or, if appropriate, value range; and (2) the actual applicable value⁴ itself for that organisation (or, if appropriate, organisations).

In respect of (1) it is currently understood that there are four 'groupings' that are responsible, namely:

- (i) the relevant TSO; or
- (ii) the relevant TSO and the relevant system operator; or
- (iii) the relevant system operator; or
- (iv) the relevant TSO and / or the relevant system operator and the power-generating facility owner.

³ This can be found on the Ofgem website.

<https://www.ofgem.gov.uk/publications-and-updates/decision-our-consultation-assignment-transmission-system-operator-obligations-under-requirements-generators-demand-connection-high-voltage-direct-current-and-forward-capacity-allocation-regulations-within-gb>

⁴ Or, where applicable, value range.

In respect of (2) it is currently understood that there are a number of possible organisations that are relevant, including: National Grid (as SO), National Grid (as E&W TO), the two Scottish TOs, OFTOs (plus, in the future, potentially CATOs?) and the 14 licenced DNOs⁵.

We have prepared an illustrative representation of what the transparent reporting template might look like with item (1) shown in columns H-K (in yellow) and item (2) shown in columns L-AE (in light green).

We would suggest that the Workgroup review all the RfG obligations, in respect of the specification of certain values by the party or parties concerned (as per (1) above) and identify if these are either:

a generic value – that is they are to be applied by the party or parties concerned in a harmonised way to all newly connecting generators of that Type (A-D) – such as Articles 13 (1) (b)⁶ or 14 (5) (d) (ii)⁷; or

(only where permitted by the RfG) a power-generating facility specific value – that is to be applied by the party or parties concerned to a specific facility only – such as Articles 13 (1) (a) (ii)⁸ or 16 (2)(b)⁹.

In respect of the generic value, as set out in the RfG, for example, at recital (3)¹⁰, the value should be harmonised by the party or parties concerned.

This is because the failure to provide a harmonised generic value will not facilitate Union-wide trade in electricity, will not ensure system security, will not facilitate the integration of renewable electricity sources, will not increase competition and will not allow more efficient use of the network and resources and, therefore, the benefit of consumers will not be achieved.

In a limited number of cases the RfG (EU) Connection Network Code does permit non harmonised values to be applied¹¹, in coordination with and with the

⁵ Eastern Power Networks Plc; Electricity North West Limited; London Power Networks Plc; Northern Powergrid (Northeast) Limited; Northern Powergrid (Yorkshire) Plc; Scottish Hydro Electric Power Distribution Plc; South Eastern Power Networks Plc; Southern Electric Power Distribution Plc; SP Distribution Plc; SP Manweb Plc; Western Power Distribution (East Midlands) Plc; Western Power Distribution (South Wales) Plc; Western Power Distribution (South West) Plc; and, Western Power Distribution (West Midlands) Plc.

⁶ “With regard to the rate of change of frequency withstand capability, a power-generating module shall be capable of staying connected to the network and operate at rates of change of frequency up to a value **specified** by the relevant TSO, unless disconnection was triggered by rate-of-change-of-frequency-type loss of mains protection. The relevant system operator, in coordination with the relevant TSO, shall specify this rate-of-change-of-frequency-type loss of mains protection.”

⁷ “power-generating facilities shall be capable of exchanging information with the relevant system operator or the relevant TSO in real time or periodically with time stamping, as **specified** by the relevant system operator or the relevant TSO;”

⁸ “the relevant system operator, in coordination with the relevant TSO, and the power-generating facility owner may **agree** on wider frequency ranges, longer minimum times for operation or specific requirements for combined frequency and voltage deviations”

⁹ “wider voltage ranges or longer minimum time periods for operation may be **agreed** between the relevant system operator and the power-generating facility owner in coordination with the relevant TSO.”

¹⁰ “Harmonised rules for grid connection for power-generating modules 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.”

¹¹ Or where a derogation has been applied for and been granted by the NRA.

agreement of, the power-generating facility owner – which we refer to as 'power-generating facility specific value'.

For illustrative purposes we refer to the generic value to be applied as 'X' (or, where the RfG permits this value to be a range 'X₁-X₂') when the Workgroup reviews the RfG specification obligations.

For illustrative purposes we refer to the power-generating facility specific value to be applied as 'Y' (or, where the RfG permits this value to be a range 'Y₁-Y₂') when the Workgroup reviews the RfG specification obligations.

It is proposed that, if approved, the party or parties who are responsible for the specification of the value(s)¹² would be required to populate the transparent reporting template; i.e. replace the 'X' (or 'X₁-X₂') or 'Y' (or 'Y₁-Y₂'); with their respective value¹³ by Tuesday 1st May 2018 at the latest, although they would be free to do so prior to this date if they wished¹⁴.

Where, going forward beyond 1st May 2018, the party or parties who are responsible for the specification of the value(s) etc., wished to change the said value¹⁵ they would provide to National Grid SO¹⁶ their updated value¹⁷ within one Business Day of the party or parties specifying the new said value¹⁸ and National Grid SO would, within one Business Day amend, update and (re)publish the transparent reporting template. The change in the said value¹⁹ would take effect from 00:01 on the next Business Day after the Business Day²⁰ that the amended and updated transparent reporting template was (re)published by National Grid SO.

We recognise that in respect of a power-generating facility specific value that there may be reservations around the confidentiality of the value(s) concerned. We note however, that such reservations would not be relevant where a derogation has been granted, from the RfG value(s), as the applicable value(s) in that case would be published, as part of the derogation notice, by the NRA.

Nevertheless, in recognition of the reservations around the confidentiality of the value(s) we would propose the following approach. Where an organisation concerned with specifying the value(s) has agreed the power-generating facility specific value(s) for less than four sites then those values would only be notified to Ofgem.

However, where four or more such sites had the power-generating facility specific value(s) then all these values (or more likely the range of the said values) would be notified (by the organisation concerned) via the transparent reporting template, rather than to Ofgem only. We have shown this in columns AF-AY (in light blue) in

¹² Or, if appropriate, range of values.

¹³ Or, if appropriate, range of values.

¹⁴ We would suggest that the implementation date for this proposal be set five Business Days after an Authority decision – thus parties could populate the template from that date onwards.

¹⁵ Or, if appropriate, range of values.

¹⁶ As the Grid Code (Code) Administrator.

¹⁷ Or, if appropriate, range of values.

¹⁸ Or, if appropriate, range of values.

¹⁹ Or, if appropriate, range of values.

²⁰ Thus a change published by NG SO during Wednesday would take effect from 00:01 on Thursday.

the illustrative representation of the transparent reporting template. We also recognise that the Workgroup might wish to consider if these power-generating facility specific value(s) should be published by generator technology type (if appropriate).

Finally, for completeness, we would propose that where a derogation has been granted by Ofgem that the value²¹ concerned would also be placed on the transparent reporting template²² by the relevant organisation²³ (or, if appropriate, organisations). We have shown this in columns AZ-BS (in orange) in the illustrative representation of the transparent reporting template.

6 Impacts and Other Considerations

i. The Grid Code will bear the primary impact of the EU Connection Code modification. Some consequential changes are anticipated in the STC code.

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

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 Codes/ Guidelines implementation is being undertaken as a substantial programme of work within the GB industry. However, this modification does not impact on any on-going SCR.

Consumer Impacts

This modification facilitates the implementation of consistent technical standards across the EU for the connection of new Generation equipment.

7 Relevant Objectives

Impact of the modification on the Relevant Objectives:

Relevant Objective	Identified impact
<p>To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity</p> <p>The proposed solution will allow the System Operator / Distribution Network Operators to efficiently apply the EU Network Code/ Guidelines requirements to the Users of the system through the National Industry Codes.</p>	<p>Positive</p>

²¹ Or, if appropriate, range of values.

²² We would suggest this be done within two Business Days of the publication of the Ofgem derogation notification.

²³ Such as the Relevant TSO or Relevant System Operator.

<p>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)</p> <p>The proposed solution will assist the Users of the Transmission and the Distribution system during the connection process.</p>	<p>Positive</p>
<p>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</p> <p>The publication of a harmonised set of values or, where permitted by the RfG, of a power-generating facility site specific value will promote the security and, in particular, the efficiency of generation.</p>	<p>Positive</p>
<p>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</p> <p>The EU Connection Codes derive from the Third Energy Package legislation which is focused on delivering security of supply; supporting the connection of new renewable plant; and increasing competition to lower end consumer costs.</p> <p>This proposal ensures openness and transparency around the technical values needed by new generators seeking to connect in GB. Without full visibility of the value (or range of values, if applicable) these new generators will be impeded when they are ordering new equipment.</p> <p>The manufactures will also be hindered in the use of ‘equipment certificates’ if the harmonised value(s) is kept secret by the network operator(s). As has been recognised within the RfG, the use of ‘equipment certificates’ will significantly reduce the need (and substantially reduce the cost for new generators and network operators) for each individual new generator in terms of compliance testing – which leads to lower costs to end consumers, thus maximising social welfare (which is conformance with the Electricity Regulation).</p> <p>Furthermore, this modification ensures GB compliance with EU legislation in a timely manner and does so in a way that is not more stringent than EU law permits.</p>	<p>Positive</p>
<p>To promote efficiency in the implementation and administration of the Grid Code arrangements</p> <p>The publication in a single location of the GB applicable RfG values (or range of values, if applicable) will avoid the need (i) for this to be done by each of the parties concerned (1 SO, 3 onshore TOs, numerous OFTOs, 14 DNOs plus possibly countless CATOs in the future) and (ii) for users to have to find this important information, at differing locations within numerous websites (for each of the parties noted under (i)). Therefore this proposal will promote the efficiency in the</p>	<p>Positive</p>

implementation and administration of the Grid Code arrangements.

8 Implementation

This modification must be in place to ensure the requirements of the RfG EU Connection Code are set out in the GB codes *by* two years from the Entry Into Force date of May 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.

9 Legal Text

Not yet agreed.

10 Recommendations

Panel is asked to:

- Refer this proposal to a Workgroup for continuing the formation of proposals