

Stage 01: Modification Proposal

Grid Code

GC0114: 'System Operation Guideline: Prequalification Processes'

Purpose of Modification: The EU System Operation Guideline (SOGL) requires NGET to develop prequalification processes for Frequency Containment (FCR), Restoration (FRR) and Replacement Reserves (RR). In line with stakeholder feedback NGET proposes to develop these new processes under the established governance of the Grid Code.

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.

- subject to self-governance
- assessed by a Workgroup

This modification was raised **8 May 2018** and will be presented by the Proposer to the Panel on **16 May 2018**. The Panel will consider the Proposer's recommendation and determine the appropriate route.



High Impact: None



Medium Impact: None



Low Impact: Existing and future balancing service providers, NGET, DNOs

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

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Any Questions?

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Timetable

The Code Administrator will provide a draft timetable to the Grid Code Panel for their approval.

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

1 Summary

Defect

NGET is required to develop new prequalification processes by the EU System Operation Guideline (SOGL).

What

Introduce a new section to the Grid Code describing the prequalification processes as described in the SOGL.

Why

It is requirement of the EU network guideline for NGET to develop these processes. Developing these processes through the Grid Code introduces a clear governance arrangement for these new processes.

How

A new section will be added to the Grid Code to describe the SOGL prequalification processes.

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.

The SOGL requirement is for NGET to develop and publish the details of the prequalification process by 18 September 2018. NGET is looking to develop these processes through the established Grid Code governance, however the Grid Code modification does not need to be finalised by the 18 September 2018 deadline. NGET will publish the details of the processes in September 2018, whilst acknowledging any further development which may be ongoing.

2 Governance

Joint work with the DCRP may be required as some balancing services are procured from distributed providers.

Additionally, it may be valuable to have smaller Balancing Service providers on the workgroup – forums such as ENA open networks and Power Responsive could be used to identify appropriate workgroup members.

Justification for Self-Governance Procedures

SOGL does not recommend or oblige any particular governance route for the development of the SOGL prequalification processes. It instead simply obliges NGET to develop the various prequalification processes. SOGL explicitly does not require regulatory approval of the prequalification processes.

The proposal from NGET is that these new prequalification processes should be developed to map existing practice to the SOGL framework and therefore it is unlikely to discriminate between different classes of Grid Code Parties and is unlikely to have a material effect on;

- i) *Existing or future electricity customers;*
- ii) *Competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution or supply of electricity,*
- iii) *The operation of the National Electricity Transmission System*
- iv) *Matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies*
- v) *The Grid Code's governance procedures or the Grid Code's modification procedures*

Requested Next Steps

This modification should:

- be subject to self-governance
- be assessed by a Workgroup

SOGL requires NGET by 18 September 2018 to;

- *“develop an FCR prequalification process and shall make publicly available the details of the FCR prequalification process” [SOGL Article 155]*
- *“develop a FRR prequalification process and shall clarify and make publicly available its details” [SOGL Article 159]*
- *“develop a RR prequalification process ... and shall clarify and make publicly available the details thereof” [SOGL Article 162]*

It should be noted that the above requirements from SOGL do not require the Grid Code modification to be finalised by the 18 September 2018 deadline.

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 methodologies required by the EU Network Guidelines are still in development and these may in due course require a review of solutions developed for Codes that come into force beforehand.

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
- Regulation 2017/1485 - Transmission System Operation Guideline (SOGL) which entered into force 14 September 2017
- Regulation 2017/ 2196 - Emergency and Restoration (E&R) Guideline which entered into force 18 December 2017
- Regulation 2017/ 2195 - Electricity Balancing Guideline (EBGL) which entered into force 18 December 2017

This modification relates to the SOGL guideline which aims at;

- (a) determining common operational security requirements and principles;*
- (b) determining common interconnected system operational planning principles;*
- (c) determining common load-frequency control processes and control structures;***
- (d) ensuring the conditions for maintaining operational security throughout the Union;***
- (e) ensuring the conditions for maintaining a frequency quality level of all synchronous areas throughout the Union;***
- (f) promoting the coordination of system operation and operational planning;***
- (g) ensuring and enhancing the transparency and reliability of information on transmission system operation;***
- (h) contributing to the efficient operation and development of the electricity transmission system and electricity sector in the Union.”***

Those aims which NGET believes are most impacted by the development of FCR, FRR, and RR prequalification processes are **in bold**.

The EU System Operation guideline (SOGL) requires NGET to develop a prequalification process for the three categories of frequency reserve;

- Frequency Containment Reserves (FCR),

- Frequency Restoration Reserves (FRR) and
- Replacement Reserves (RR)

NGET believes existing GB balancing services used to manage frequency can be maintained but must be mapped to one of the above categories. E.g. primary response maps to FCR, STOR to RR.

Prequalification processes must be developed by 18 September 2018, and SOGL specifies some minimum requirements. There is no governance requirement in SOGL for the process development, and no regulatory approval required.

Stakeholders have expressed concern that the new processes may introduce additional requirements, and have been particularly concerned by the lack of visibility and governance surrounding their development.

We propose to develop the SOGL Prequalification processes as a Grid Code modification, which should give customers the desired visibility and governance. NGET believes that this approach will ensure those considerations set out with regards to application of the SOGL in Article 4 are met, namely that;

“When applying this Regulation, Member States, competent authorities, and system operators shall:

- (a) apply the principles of proportionality and non-discrimination;*
- (b) ensure transparency;*
- (c) apply the principle of optimisation between the highest overall efficiency and lowest total costs for all parties involved;*
- (d) ensure TSOs make use of market-based mechanisms as far as possible, to ensure network security and stability;*
- (e) respect the responsibility assigned to the relevant TSO in order to ensure system security, including as required by national legislation;*
- (f) consult with relevant DSOs and take account of potential impacts on their system; and*
- (g) take into consideration agreed European standards and technical specifications.”*

4 Code Specific Matters

Technical Skillsets

Understanding of the GB regulatory framework (particularly the Grid Code)

An understanding of the existing and future GB balancing services and any associated prequalification activities.

An understanding of the FCR, FRR, and RR prequalification processes as set out in the EU System operation Guideline (SOGL).

Reference Documents

COMMISSION REGULATION (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R1485>

National Grid Balancing Services

<https://www.nationalgrid.com/uk/electricity/balancing-services>

5 Solution

The intention is introduce a new section of the Grid Code which would set out the FCR, FRR, and RR prequalification processes in accordance with SOGL. This could be achieved by modifying the proposed BC4 section as proposed under Grid Code modification GC0097.

Individual details will be defined for each balancing service, as is the case now. It is envisaged that the SOGL prequalification processes simply provide the overall framework for each type of reserve (FCR, FRR, and RR).

6 Impacts and Other Considerations

- Inclusion of smaller participants (wider engagement through open network, power responsive, etc.).
- Potential for cross-code working with Dcode
- It is noted that GC0097 is also developing prequalification processes for TERRE.

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

No.

Consumer Impacts

No direct consumer or environmental impacts identified.

7 Relevant Objectives

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

- a. Defining FCR, FRR and RR prequalification process in accordance with EU regulations should facilitate greater cross border coordination of frequency ancillary services. This should in turn deliver a more efficient, coordinated and economical system for the transmission of electricity.
- b. A European framework for prequalification of balancing services should facilitate greater competition within balancing markets.
- c. A European framework for prequalification which considers minimum technical requirements should promote security and efficiency in electricity transmission system.
- d. The implementation of EU regulation SOGL should positively impact this objective.
- e. The introduction of prequalification processes is not anticipated to impact the efficiency in the implementation and administration of the Grid Code arrangements.

8 Implementation

To be confirmed following feedback from the workgroup, especially with regards to any transitional arrangements. SOGL has a large degree of flexibility regarding

implementation timescales. NGET are keen to understand the likely costs associated with any proposed implementation timescale.

Transitional arrangements will need to be determined. Some options are detailed below, however this list is not exhaustive and should be further developed with input from the workgroup.

Options;

- Automatic prequalification for existing service providers with review in 5 years time
- Prequalification processes defined and implemented as and when with new and existing service providers
- Other options, to be confirmed in workgroup discussions.

9 Draft Legal Text

GLOSSARY & DEFINITIONS

Balancing Services	As defined in the Transmission Licence .
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(NB: Numberings to be reviewed alongside GC0097 development)

BC4.1 PREQUALIFICATION

European Regulation (EU) 2017/1485 provides an overview of the minimum technical requirements and the prequalification process.

NGET shall list relevant **Balancing Services** as Frequency Containment Reserves (FCR), Frequency Restoration Reserves (FRR) or Replacement Reserves (RR) as defined in European Regulation (EU) 2017/1485.

Where a **Balancing Service** has been listed as FCR, FRR or RR, **NGET** shall ensure that prequalification processes for that **Balancing Service** follows the processes as set out here.

NGET shall ensure that each relevant **Balancing Service** requires a formal application from the FCR, FRR or RR provider to prequalify.

[Where the **Connection Conditions** require the capability as a condition of connection, the connection application shall be understood to fulfil this formal application.] (To be validated whether this is an appropriate route in workgroup discussions)

BC4.1.1 Prequalification Timelines

European Regulation 2017/1485 gives the following minimum timescales applicable to FCR, FRR and RR prequalification processes;

- (a) Within 8 weeks of a formal application from the FCR, FRR or RR provider **NGET** shall confirm the application is complete (from the perspective of information provision)
- (b) If the application is incomplete the FCR, FRR, or RR provider shall provide the missing evidence within 4 weeks of the a request from **NGET** or it will be presumed that the application has been withdrawn

- (c) Within 3 months of confirming that all information has been provided **NGET** shall confirm if the potential FCR, FRR or RR provider meets the requirements in **BC4.2.1, BC4.3.1 or BC4.4.1** respectively.

NGET shall re-assess the qualification of FCR, FRR or RR providing units or groups:

- a) at least once every 5 years;
- b) in case the technical or availability requirements or the equipment have changed; and
- c) in the case of FCR providing units or groups, in case of modernisation of the equipment related to FCR activation.

BC4.2 FCR PREQUALIFICATION PROCESS

NGET shall ensure that each relevant **Balancing Service** prequalification process shall, as a minimum, require the FCR provider to submit a self-certification of the FCR Minimum Technical Requirements as defined in **BC4.2.1**.

A transitional period for the introduction of FCR Minimum Technical Requirements, as defined in **BC4.2.1**, shall apply until [20XX] **To be discussed with affected parties in workgroup discussions**, for those FCR providers who;

- a) provide the FCR capability as a condition of connection, and
- b) are considered as “existing” rather than “new” in accordance with Regulation (EU) 2016/631.

BC4.2.1 FCR Minimum Technical Requirements

Each FCR providing unit and each FCR providing group shall;

- a) activate the agreed FCR by means of a proportional governor reacting to frequency deviations or alternatively based on a monotonic piecewise linear power-frequency characteristic in case of relay activated FCR.
- b) be capable of activating FCR within the frequency ranges specified in Article 13(1) of Regulation (EU) 2016/631.
- c) and comply with the following properties
 - i) Maximum combined effect of inherent frequency response insensitivity and possible intentional frequency response dead band of the governor of the FCR providing units or FCR providing groups of 15 mHz
 - ii) FCR full activation time of 10 s
 - iii) FCR full activation frequency deviation of ± 500 mHz
- d) specify the limitations of the energy reservoir of its FCR providing units or FCR.

Where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **NGET** shall ensure that the prequalification process requires the following to be specified;

- a) voltage levels and connection points of the reserve providing units or groups;
- b) the type of active power reserves;
- c) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

- d) the maximum rate of change of active power for the reserve providing units or groups.

BC 4.3 FRR PREQUALIFICATION PROCESS

NGET shall ensure that each relevant **Balancing Service** prequalification process shall, as a minimum, require the FRR provider to submit a self-certification of the FRR Minimum Technical Requirements as defined in **BC4.3.1**.

BC4.3.1 FRR Minimum Technical Requirements

Each FRR providing unit and each FRR providing group shall;

- a) activate FRR in accordance with the setpoint received from **NGET**;
- b) ensure that the FRR activation of the FRR providing units within a reserve providing group can be monitored. For that purpose, when specified, the FRR provider shall be capable of supplying to **NGET** real-time measurements of the connection point or another point of interaction agreed with **NGET** concerning:
 - i. time-stamped scheduled active power output;
 - ii. time-stamped instantaneous active power for:
 - each FRR providing unit,
 - each FRR providing group, and
 - each power generating module or demand unit of a FRR providing group with a maximum active power output larger than or equal to 1.5 MW;
- c) be capable of activating its complete manual reserve capacity on FRR within the FRR full activation time;
- d) fulfil the FRR availability requirements;
- e) fulfil the ramping rate requirements;
- f) inform **NGET** about a reduction of the actual availability of its FRR providing unit or its FRR providing group or a part of its FRR providing group as soon as possible.

Where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **NGET** shall ensure that the prequalification process requires the following to be specified;

- a) voltage levels and connection points of the reserve providing units or groups;
- b) the type of active power reserves;
- c) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and
- d) the maximum rate of change of active power for the reserve providing units or groups.

BC4.4 RR PREQUALIFICATION PROCESS

NGET shall ensure that each relevant **Balancing Service** prequalification process shall, as a minimum, require the RR provider to submit a self-certification of the RR Minimum Technical Requirements as defined in **BC4.2.1**.

BC4.2.1 RR Minimum Technical Requirements

Each RR providing unit and each RR providing group shall;

- a) activate RR in accordance with the setpoint received from **NGET**;

- b) ensure activation of complete reserve capacity on RR within the activation time defined by **NGET**;
- c) ensure de-activation of RR according to the setpoint received from **NGET**;
- d) ensure that the RR activation of the RR providing units within a reserve providing group can be monitored. For that purpose, the RR provider shall be capable of supplying to **NGET** real-time measurements of the connection point or another point of interaction agreed with **NGET**:
 - i) the time-stamped scheduled active power output, for each RR providing unit and group and for each power generating module or demand unit of a RR providing group with a maximum active power output larger than or equal to 1.5 MW;
 - ii) the time-stamped instantaneous active power, for each RR providing unit and group, and for each power generating module or demand unit of a RR providing group with a maximum active power output larger than or equal to 1.5 MW;
- e) ensure fulfilment of the RR availability requirements
- f) inform **NGET** about a reduction of the actual availability or a forced outage of its RR providing unit or its RR providing group or a part of its RR providing group as soon as possible.

Where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **NGET** shall ensure that the prequalification process requires the following to be specified;

- a) voltage levels and connection points of the reserve providing units or groups;
- b) the type of active power reserves;
- c) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and
- d) the maximum rate of change of active power for the reserve providing units or groups.

Text Commentary

The intention is to introduce the FCR, FRR, and RR prequalification processes as required by SOGL as a new section of the Grid Code. The above draft legal text has been constructed by pulling together the minimum requirements from SOGL. It may be necessary for the workgroup to adapt the legal text to map some of the EU terms into more appropriate GB terms.

The numbering throughout will need to be updated following GC0097 development.

10 Recommendations

Panel is asked to:

- Agree that Self Governance procedures should apply
- Refer this proposal to a Workgroup for assessment.