

# EU Prequalification Processes



## Managing the GB system frequency

We have a licence obligation to control system frequency at 50Hz plus or minus 1%. We make sure there is sufficient generation and demand held in readiness to manage all credible circumstances that might result in frequency variations. We procure services to balance demand and supply.

The services we procure will fall into one (or more) of the three **EU reserve categories**;

**FCR** – Frequency Containment Reserves means the active power reserves available to contain system frequency after the occurrence of an imbalance.  
*Full activation time ≤ 10 seconds*

**FRR** – Frequency Restoration Reserves means the active power reserves available to restore system frequency to the nominal frequency.  
*10 seconds < Full activation time*  
*Full activation time ≤ 15 minutes*

**RR** – Replacement Reserves means the active power reserves available to restore or support the required level of FRR to be prepared for additional system imbalances, including generation reserves.  
*Full activation time > 15 minutes*

For further information please contact;

[europeancodes.electricity@nationalgrid.com](mailto:europeancodes.electricity@nationalgrid.com)

Or visit;

[www.nationalgrid.com/uk/electricity/codes/european-network-codes](http://www.nationalgrid.com/uk/electricity/codes/european-network-codes)

**Prequalification** is the process to verify the compliance of a reserve providing unit or a reserve providing group with the requirements set by National Grid. Potential reserve and response providers are required to go through the prequalification processes. Prequalification processes will be established for each Balancing Service used to manage the GB system frequency. These EU prequalification processes set out some **common timescales** and **minimum technical requirements**.

This paper **makes publicly available the details of the current EU prequalification processes**. Further modification to these processes is expected through the ongoing development of Grid Code modification GC0114. Once established in the Grid Code the ongoing maintenance of these processes will be managed via the Grid Code governance rules.

## EU regulatory requirement

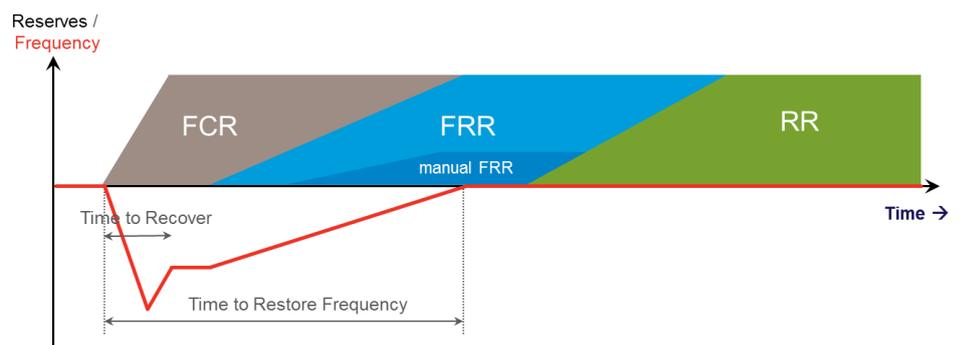
The EU System Operation Guideline (SOGL) requires National Grid Electricity Transmission (NGET) in its role as Electricity System Operator to develop prequalification processes for:

- 1) Frequency Containment Reserves (FCR)
- 2) Frequency Restoration Reserves (FRR)
- 3) Replacement Reserves (RR)

In accordance with SOGL Articles 155, 159, and 162, National Grid must develop and make publicly available the details of these EU prequalification processes.

In line with stakeholder feedback National Grid is developing these new processes under the established governance of the Grid Code. In May 2018, National Grid raised Grid Code modification GC0114 to develop these processes.

## Overview of EU reserve category timescales



Individual Balancing Services, used to manage the GB frequency, fall into one of the three EU categories of reserve; FCR, FRR and RR. These EU categories are separated from one another by the full activation time of the Balancing Service.

**Who should prequalify?**

The party with the contractual or legal obligation to supply the Balancing Service to National Grid. This may be for individual unit(s) at a single connection point or, via aggregation, a group of units of power generating modules, demand units and / or reserve providing units at multiple connection points.

Although National Grid anticipates that these EU prequalification processes will be governed under Grid Code governance rules – all Balancing Service providers (including parties who are not Grid Code Users) should undertake prequalification activities.



*“reserve provider” means a legal entity with a legal or contractual obligation to supply FCR, FRR or RR from at least one reserve providing unit or reserve providing group”*

**Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (SOGL)**

**Prequalification process overview**

**Step One:**

Any potential party who wishes or is obliged to provide a Balancing Service (which is categorised as FCR, FRR or RR) to National Grid would need to complete a short prequalification application form and formally submit it to National Grid. The intention is that the form will be simple to complete and if, for example, a party is already providing certain services to National Grid that by indicating this on the form then little additional information would be required.

**Step Two:**

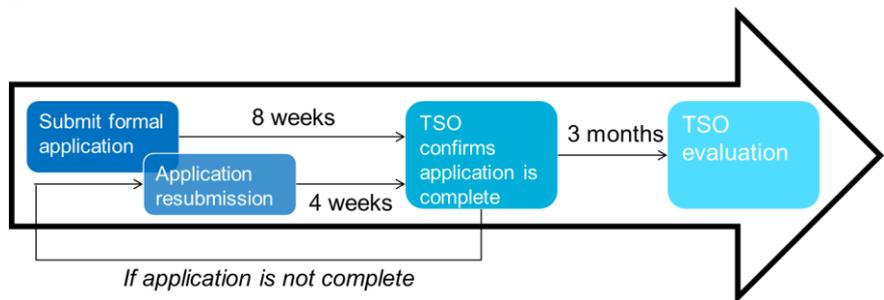
Once National Grid receives the formal application we will consider it. Within eight weeks of the submission date National Grid will confirm that the application is complete – if it is not then the applicant has four weeks to submit the additional information requested by National Grid. If this additional information is not submitted, then the application will be deemed withdrawn.

**Step Three: (Transmission connected provider)**

Where the connection point(s) of the unit(s) or group(s) are on the transmission system then, within three months of confirming that the application is complete National Grid will have evaluated the application and confirmed back to the party whether their FCR, FRR or RR unit(s) or group(s) meet the prequalification criteria.

**Step Three: (Distribution connected provider)**

Where the connection point(s) or the unit(s) of group(s) are on the distribution system then, within three months of confirming that the application is complete National Grid will, having liaised with the relevant DNO(s), have evaluated the application and confirmed back to the party whether their FCR, FRR or RR unit(s) or group(s) meet the prequalification criteria.



**EU or GB processes?**

The European FCR, FRR and RR prequalification processes act as umbrella processes for individual GB Balancing Services. Each Balancing Service will have its own prequalification process, which will adhere to the timescales and minimum technical requirements set out in the EU processes.

Balancing Service providers only need to follow the GB Balancing Service prequalification process.

National Grid will ensure that the GB processes are in line with the EU processes.



*“ ‘prequalification’ means the process to verify the compliance of a reserve providing unit or a reserve providing group with the requirements set by the TSO ”*

**Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (SOGL)**

**The development of the EU prequalification processes through the Grid Code modification, GC0114, has identified several issues. A summary of each these issues is presented below. A more detailed analysis of the issues is presented in the GC0114 Workgroup Consultation.**

**Mandatory or voluntary?**

The capability to provide certain Balancing Services in GB is a mandatory condition of connection (e.g. BM participation, and Mandatory Frequency Response). This ensures National Grid has sufficient tools to enable the safe, economic and efficient operation of the transmission system. National Grid considers that parties who are currently mandated to provide a capability as a condition of connection should not be required to go through additional prequalification activities, and therefore the existing connection process would provide sufficient verification of compliance.

**Providers connected to the distribution networks**

During the three month prequalification assessment period of any individual reserve providing unit(s) or group National Grid will work with the relevant DNO(s) to determine any limits to the delivery of active power reserves located(s) in the distribution system.

**Prequalification without assets**

The implementation of prequalification processes should not inadvertently become a barrier to entry. In the case of new assets whose primary commercial focus is on the delivery of services to National Grid, it is important that the ability to prequalify and enter into a commercial contract before the asset is installed be retained as this mechanism underpins the financing of these assets. As with existing assets, changes after any initial pre-qualification would need to be reviewed.

**Governance and ongoing changes**

The details of the SOGL prequalification processes must be made publicly available following their development by the legal deadline of 14 September 2018. National Grid envisages that these processes will be updated after this deadline through the development of GC0114, and following establishment in the Grid Code they will be modified in line with Grid Code governance rules.

**Prequalification testing requirements**

The proposed EU prequalification processes do not set any harmonised minimum testing requirements for either FCR, FRR, or RR. Instead, the EU prequalification processes require, as a minimum, a self certification against the minimum technical requirements with no testing requirement. National Grid is not intending to define any harmonised minimum level of compliance tests within these EU prequalification processes. Testing requirements for some individual Balancing Services will remain.

**Implementation of the EU prequalification processes**

Under Articles 19 and 26 of the Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing, EU Transmission System Operators (TSOs) and National Grid are required to develop proposals on the definition and the use of ‘standard’ and ‘specific’ products.

National Grid intends implement the prequalification processes for FCR, FRR and RR for individual Balancing Services following the regulatory approval of these services as ‘standard’ or ‘specific’ products.

The anticipated timings of these approvals are given in Annex 1.

For further information on Grid Code modification GC0114 please contact;

[grid.code@nationalgrid.com](mailto:grid.code@nationalgrid.com)

or visit the webpage;

[www.nationalgrid.com/uk/electricity/codes/grid-code/modifications/gc0114-system-operation-guideline-prequalification](http://www.nationalgrid.com/uk/electricity/codes/grid-code/modifications/gc0114-system-operation-guideline-prequalification)

**EU Prequalification processes***Proposed legal text under Grid Code modification GC0114*

It is envisaged that the below legal text will be further developed within the Grid Code GC0114 Workgroup, and once approved will become part of the Grid Code. The current draft legal text is below. National Grid expects this to be updated following Grid Code GC0114 Workgroup discussions, and that Workgroup Alternative Code Modifications will also be developed.

**GLOSSARY & DEFINITIONS**

<b>Balancing Services</b>	As defined in the <b>Transmission Licence</b> .
<b>Demand Unit</b>	An indivisible set of installations containing equipment which could actively control the <b>Demand</b> at one or more sites by a <b>Demand Response Provider</b> , <b>Demand Facility Owner</b> , <b>CDSO</b> or by a <b>Non Embedded Customer</b> , either individually or commonly as part of <b>Demand Aggregation</b> through a third party.
<b>Demand Response Active Power</b>	<b>Demand</b> within a <b>Demand Facility</b> or <b>Closed Distribution System</b> that is available for modulation by <b>NGET</b> or <b>Network Operator</b> or <b>Relevant Transmission Licensee</b> , which results in an <b>Active Power</b> modification;
<b>Frequency Containment Reserves (FCR)</b>	means the active power reserves available to contain system frequency after the occurrence of an imbalance.
<b>Frequency Restoration Reserves (FRR)</b>	means the active power reserves available to restore system frequency to the nominal frequency.
<b>Replacement Reserves (RR)</b>	means the active power reserves available to restore or support the required level of FRR to be prepared for additional system imbalances, including generation reserves;
<b>Standard Product</b>	means a harmonised balancing product defined by all EU TSOs for the exchange of balancing services.
<b>Specific Product</b>	means a product different from a standard product;

1.1 **PREQUALIFICATION**

**NGET** shall list the current status and dates of potential status changes of **Balancing Services** as Frequency Containment Reserves (FCR), Frequency Restoration Reserves (FRR) or Replacement Reserves (RR) or existing GB.

Where a **Balancing Service** has been approved as a **Standard Product** or **Specific Product** providing 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** or **European Connection Conditions** require the capability as a condition of connection, the connection application shall be understood to fulfil this formal application.

1.1.1 **Prequalification Timelines**

The following minimum timescales shall be apply to the 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 submit the additional required information 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 1.2.1, 1.3.1 or 1.4.1 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.

## 1.2 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 1.2.1.

A transitional period for the introduction of FCR Minimum Technical Requirements, as defined in 1.2.1 and 1.2.2, shall apply for those FCR providers who are not an **EU Code User**.

### 1.2.1 FCR Minimum Technical Requirements

Each FCR provider shall have the right to aggregate the respective data for more than one FCR providing unit if the maximum power of the aggregated units is below 1.5 MW and a clear verification of activation of FCR is possible.

Each FCR providing unit and each FCR providing group shall;

- a) activate the agreed FCR by means of a proportional governor or load controller 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 the **ECC.6.1.2.1.2**.
- 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 or load controller 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  $\pm 500$  mHz
- d) specify the limitations of the energy reservoir of its FCR providing units or FCR providing groups.
- e) Each FCR provider shall be capable of making available to **NGET**, for each of its FCR providing units and FCR providing groups, at least the following information:
  - i. time-stamped status indicating if FCR is on or off;
  - ii. time-stamped active power data needed to verify FCR activation, including time-stamped instantaneous active power;
  - iii. droop of the governor or load controller for **Type C Power Generating Modules** and **Type D Power Generating Modules** acting as FCR providing units, or its equivalent parameter for FCR providing groups consisting of **Type A Power-Generating Modules** and/or **Type B Power Generating Modules**, and/or **Demand Units** with **Demand Response Active Power**.
- f) An FCR provider shall guarantee the continuous availability of FCR, with the exception of a forced outage of a FCR providing unit, during the period of time in which it is obliged to provide FCR.
- g) Each FCR provider shall inform **NGET**, as soon as possible, about any changes in the actual availability of its FCR providing unit and/or its FCR providing group, in whole or in part, relevant for the results of this prequalification.

- 1.2.2 In addition to the requirements in 1.2.1, where a relevant **Balancing Service** is provided by a reserve providing unit(s) or groups 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.

### 1.3 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 1.3.1 and 1.3.2.

#### 1.3.1 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 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) a FRR providing unit or FRR providing group for automatic FRR shall have an automatic FRR activation delay not exceeding 30 seconds;
- d) be capable of activating its complete manual reserve capacity on FRR within the FRR full activation time;
- e) fulfil the FRR availability requirements;
- f) fulfil the ramping rate requirements;
- g) 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.

- 1.3.2 In addition to the requirements in 1.3.1, where a relevant **Balancing Service** is provided by a reserve providing unit(s) or groups 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.

#### 1.4 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 1.4.1 and 1.4.2.

##### 1.4.1 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.

1.4.2 In addition to the requirements in 1.4.1, where a relevant **Balancing Service** is provided by a reserve providing unit(s) or groups 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.

### Annex 1 Balancing Service mapping

As referenced in the proposed Grid Code modification GC0114 legal text, NGET shall list the current status and dates of potential status changes of Balancing Services as Frequency Containment Reserves (FCR), Frequency Restoration Reserves (FRR) or Replacement Reserves (RR) or existing GB.

The table gives indicative dates when National Grid anticipates that a product may be approved as a 'standard' or 'specific' product.

Please note that this table is a snapshot of the status of existing Balancing Services, and will be updated as individual Balancing Services change in the future. Details of how National Grid anticipates Balancing Services to evolve can be found on our "*Future of balancing services*" website; [www.nationalgrid.com/uk/electricity/balancing-services/future-balancing-services](http://www.nationalgrid.com/uk/electricity/balancing-services/future-balancing-services)

Balancing Services		Proposed Final Product Type		Date of Potential Status Change	Current Product Type
Contract Type	Service	Group	Type		
Mandatory Frequency Response	Primary response	FCR	Specific	2022+ (TBC)	Existing GB
	High response	FCR	Specific	2022+ (TBC)	Existing GB
	Secondary response	FRR	Specific	2022	Existing GB
Commercial Frequency Response Service	Primary response	FCR	Specific	2022+ (TBC)	Existing GB
	High response	FCR	Specific	2022+ (TBC)	Existing GB
	Secondary response	FRR	Specific	2022	Existing GB
Firm Frequency Response (FFR)	Primary response	FCR	Specific	2022+ (TBC)	Existing GB
	High response	FCR	Specific	2022+ (TBC)	Existing GB
	Secondary response	FRR	Specific	2022	Existing GB
Enhanced Frequency Response	Enhanced frequency response	FCR	Specific	2022+ (TBC)	Existing GB
Commercial Frequency Management Service	N/A	FCR	Specific	2022+ (TBC)	Existing GB
STOR	Delivery < 15 minutes	FRR	Specific	2022	Existing GB
	Delivery > 15 minutes	RR	Specific	2020	Existing GB
Demand Turn Up	Delivery < 15 minutes	FRR	Specific	2022	Existing GB
	Delivery > 15 minutes	RR	Specific	2020	Existing GB
Fast Reserve		FRR	Specific	2022	Existing GB
BM Bids and Offers	Delivery < 15 minutes	FRR	Specific	2022	Existing GB
	Delivery > 15 minutes	RR	Specific	2020	Existing GB
Fast Start		FRR	Specific	2022	Existing GB
MARI		FRR	Standard	2021	Draft Standard Product
TERRE		RR	Standard	H2 2019	Draft Standard Product