Grid Code **Code Administration Consultation**	At what stage is this document in the process?
# GC0114: ## Mod Title: 'System Operation Guidelines Prequalification Processes'	01 Proposal Form 02 Workgroup Consultation 03 Workgroup Report **04 Code Administrator Consultation** 05 Draft Grid Code Modification Report 06 Final Grid Code Modification Report

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

The purpose of this document is to consult on GC0114 with Grid Code Parties and other interested industry members. Parties are requested to respond by 5pm on 28 January 2019 to grid.code@nationalgrid.com using the Code Administrator Consultation Response Pro-forma which can be found via the following link:

https://www.nationalgrideso.com/codes/grid-code/modifications/gc0114-system-operation-guideline-prequalification-processes

Published on: **7 January 2019**

Length of Consultation: **15 Working Days**

Responses by: **28 January 2019**

Low Impact: Existing and future balancing service providers

The workgroup concludes:

All workgroup members concluded that the WAGCM1 proposal facilitates the Grid Code Objectives better than the baseline.

Contents

Timetable

The Code Administrator recommends the following timetable:

Workgroup Meeting 1	01 June 2018
Workgroup Meeting 2	03 July 2018
Workgroup Meeting 3	03 August 2018
Workgroup Consultation issued to the Industry	16 August 2018
Workgroup Consultation closed	27 September 2018
Workgroup Meeting 4	30 October 2018
Workgroup Meeting 5	21 November 2018
Modification concluded by Workgroup	05 December 2018
Workgroup Report presented to Panel	19 December 2018
Code Administration Consultation Report issued to the Industry	7 January 2019
Code Administration Consultation closes	28 January 2019
Draft Final Modification Report presented to Panel	28 February 2019
Modification Panel decision	28 February 2019
Final Modification Report issued the Authority	07 March 2019
Decision implemented in Grid Code	11 April 2019

Any questions?

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1 About this document

This document is the Code Administrators Consultation document that contains the discussion of the Workgroup which formed in 6 June 2018 to develop and assess the proposal, the responses to the Workgroup Consultation which closed on 27 September 2018, the voting of the Workgroup held on 5 December 2018. The Panel reviewed the Workgroup Report at their Grid Code Panel meeting on 19 December 2018 and agreed that the Workgroup had met its Terms of Reference and that the Workgroup could be discharged.

GC0114 was proposed by National Grid and was submitted to the Grid Code Review Panel for its consideration on 16 May 2018. The Panel decided to send the Proposal to a Workgroup to be developed and assessed against the Grid Code Objectives.

The Workgroup consulted on this Modification and a total of 10 responses were received. These responses can be viewed in Annex 3 of this report.

Workgroup Conclusions

At the final Workgroup meeting, Workgroup members voted on the Original proposal and WAGCM. Three Workgroup members voted that the Original Proposal better facilitated the applicable Grid Code objectives and six Workgroup members voted that the WACM better facilitated the applicable Grid Code objectives.

This Code Administrator Consultation has been prepared in accordance with the terms of the Grid Code. An electronic copy can be found on the National Grid Website, https://www.nationalgrideso.com/codes/grid-code along with the Grid Code Modification Proposal Form.

Acronyms

This document uses the following acronyms:

Acronym	Definition
CACM	Capacity Allocation and Congestion Management

DCC	Demand Connection Code
DNO	Distribution Network Operator
DSO	Distribution System Operator
EBGL	Electricity Balancing Guideline
E&R	Emergency and Restoration
FCA	Forward Capacity Allocation
FCR	Frequency Containment Reserves
FRR	Frequency Restoration Reserves
HVDC	High Voltage Direct Current
MARI	Manually Activated Reserves Initiative
NGESO	National Grid Electricity System Operator
RfG	Requirements for Generators
RR	Replacement Reserves
SOGL	Transmission System Operation Guideline
TERRE	Trans European Replacement Reserves Exchange
WAGCM	Workgroup Alternative Grid Code Modification
STOR	Short Term Operating Reserve
BEGA	Bilateral Embedded Generation Agreement
TSO	Transmission System Operator

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 4 of the Workgroup Report contains the discussion by the Workgroup on the Proposal and the potential Solution.

Defect

NGESO 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 NGESO to develop these processes. Developing these processes through the Grid Code introduces a clear governance arrangement for these new processes.

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.

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

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."

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

- Frequency Containment Reserves (FCR);

- Frequency Restoration Reserves (FRR); and

- Replacement Reserves (RR).

NGESO believes existing GB balancing services used to manage frequency can be maintained but must be mapped to one of the above categories; e.g. the existing service of Primary Response maps to FCR, whilst the existing service of STOR maps to RR.

The SOGL was published in the Official Journal of the EU on the 25 August 2017 and came into force 20 days later on the 14 September 2017. The SOGL requires that by 12 month after coming into force NGESO develop and make public the prequalification processes. Therefore the prequalification processes must be developed and published by NGESO by 14 September 2018, and SOGL specifies some minimum requirements; which can be found in Articles 152-179 plus Article 182) of the SOGL. There is no governance requirement in SOGL for the process development, and no regulatory approval required.

Stakeholders have expressed concern that the proposed new processes associated with FCR, FRR and RR in terms of this modification may introduce additional requirement's than those set out in SOGL; such as non-harmonised and discriminatory application; and have been particularly concerned by the lack of visibility and governance surrounding their development.

The Proposer wishes to develop the SOGL Prequalification processes as a Grid Code modification, which should give customers the desired visibility and governance. NGESO 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."

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 NGESO to develop and publish the details of the prequalification process by 18 September 2018. NGESO 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. NGESO will publish the details of the processes in September 2018, whilst acknowledging any further development which may be ongoing.

3 Proposer's solution

The 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 4 of the Workgroup Report contains the discussion by the Workgroup on the Proposal and the potential Solution.

The intention is introduce a new section titled Balancing Code 5 Prequalification (BC5) into the Grid Code which will set out the FCR, FRR, and RR prequalification processes in accordance with SOGL. Details of the proposed legal text are given in Annex 2.

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).

In order to maintain consistency a consequential modification is also required in Balancing Code 4 for Project TERRE as this already includes prequalification requirements for Project TERRE participants. This will involve removing the prequalification paragraphs from BC4 and adding a statement that Project TERRE participants require to complete the prequalification process detailed in BC5. Again, details of the proposed legal text are given in Annex 2.

4 Workgroup Discussions

The Workgroup convened 5 times between June 2018 and November 2018 to discuss the issue, detail the scope of the proposed defect, devise potential solutions and assess the proposal in terms of the Applicable Grid Code Objectives.

The Workgroup discussed a number of the key attributes under GC0114 and these discussions are described below.

1. Background and Context

The Proposer, presented the proposal and explained the rationale behind the changes being suggested. A general overview of modification process and of GC114 overview was given. It was explained to the Workgroup that the EU System Operation Guideline (SOGL) requires NGESO to develop prequalification processes for Frequency Containment Reserves (FCR), Frequency Restoration Reserves (FRR) and Replacement Reserves (RR) by 14th September 2018, and that these processes were new within the GB market.

The Proposer advised that NGESO (in line with stakeholder feedback) proposes to develop these new FCR, FRR and RR prequalification processes under the established governance of the Grid Code. One Workgroup member noted that these proposed new prequalification processes should be under the established governance of the Grid Code, whereby some 400 industry parties could raise modifications, where all stakeholders could raise potential alternatives and (if material) Ofgem would decide on the change, whereas what is being proposed is that a single party (NGESO) is the only party that could raise potential changes for some of the proposed new processes. Another Workgroup member reminded the Workgroup that not all affected parties could raise Grid Code Modifications.

The Proposer also advised the Workgroup that this Grid Code modification does not need to be finalised by the 14th September 2018 deadline, however, NGESO will publish the details of the FCR, FRR and RR prequalification processes in September 2018, whilst acknowledging any further development which may be ongoing.

The Proposer further explained that Modification proposes to introduce a new section to the Grid Code to describe the SOGL prequalification processes.

NGESO 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 over to FCR and STOR maps over to RR.

One Workgroup member questioned whether the SOGL prequalification processes could be changed following their establishment by the legal deadline of September 2018. General consensus in the Workgroup was that an ongoing change process should be possible, and the Workgroup should detail how this would work and present to Ofgem to confirm consistency with the SOGL regulation.

It was noted that SOGL Article 7- "Amendments to the terms and conditions or methodologies of TSOs" envisages a change process where TSOs make propose amendments to the documents produced under SOGL. NGESO clarified that they considered that the existing change process

of the Grid Code is sufficient for this purpose. Another Workgroup member queried whether the prequalification processes were intended to apply to individual's sites, groups or as a type test.

Consensus of the Workgroup was that the intention of the prequalification process was to apply to Reserve Providers (be this a Unit or a Group, as defined in SOGL, Article (3)). One Workgroup member provided that an example of this would be where an owner of a number of sites who wishes to participate within the market place, grouping these sites together in a common block, it would be the grouping that has to prequalify as the Reserve Provider. The Workgroup member pointed the Workgroup to SOGL Article 3, paragraphs 9, 10 and 11 to underpin this example.

Workgroup Representation

Workgroup Representation was also discussed. It was noted that there was recognition at GCRP and at GCDF that SOGL the prequalification processes will impact parties not subject to the Grid Code, therefore engaging smaller reserve providers was important. The Proposer advised that the Workgroup invitation has been published through ENA Open Networks advisory Group membership, NGESO's Power Responsive via email 31 May 2018, JESG, Grid Code Distribution lists and NGESO's SOGL day in the life webinars.

In between Workgroup 1 and 2, the composition of the Workgroup membership was extended to be more reflective of the impact that the modification will have on smaller reserve providers if implemented. It was noted in Workgroup 2 that the Workgroup members were satisfied that the right participation in the Workgroup had been achieved. It was also noted that all Workgroup memberships have been approved by the Grid Code Review Panel.

In Workgroup 3, a Workgroup member noted that he believed it important that the Workgroup sought representation from Distribution Network Operators (DNO), especially in light of wider industry aspiration for distribution led investment signals. The Workgroup member felt that the Workgroup had overlooked the DNOs. Upon revision, the chair of the Workgroup found that DNOs had been in attendance at Workgroup one. The Workgroup decided that specific questions would be asked to the DNOs at the Workgroup Consultation Phase, which should help to encapsulate any input the DNOs may have to this process.

2. Legal Text

During the first Workgroup, the Proposer discussed the need to define the FCR, FRR and RR pre-qualification processes within the legal text. Likewise, the need was also noted from the outset to ensure all requirements from EU Regulations are captured and mapped (balancing service mapping), as was initial draft balancing service mapping. The current proposed legal text is in Annex 2.

(a) Requirement for Prequalification

During the first three meetings differing views within the Workgroup as to what was meant by "prequalification" were presented.

The Proposer was of the opinion that SOGL does not specify whether those reserve providing units or groups who have been prequalified for FCR, FRR, or RR have a requirement (or not) to provide a reserve service. Instead, the Proposer pointed out that SOGL ensures a process is established (found in SOGL Articles 155(1) and 155(9)) to verify compliance with the specified technical capabilities. The definition in SOGL Article 3(2) (146) is:

"'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;"

It was also discussed by the Workgroup that NGESO has an obligation to develop prequalification processes as part of SOGL implementation in accordance with SOGL Articles 155(1), 159(1), 162(1) by reference to the technical minimum requirements to be specified in accordance with Articles 154(FCR), 158 (FRR) and 161 (RR). It was also noted that any

potential reserve providers who wish to offer an FCR or FRR or RR service have an obligation to submit a formal application to NGESO in accordance with SOGL Articles 155(3), 159(3), 162(3) so that NGESO can verify compliance and that such application(s) by the reserve provider can be deemed withdrawn in certain circumstances.

In addition SOGL Articles 158(3), 158(5), 161(3), and 161(5) refers to monitoring of the compliance with FRR and RR connection requirements respectively for those types of reserve providers.

SOGL Article 158(3) and 161(3) state that NGESO;

"shall adopt the technical requirements for the connection of FRR[/RR] providing units and FRR[/RR] providing groups to ensure the safe and secure delivery of FRR[/RR]."

There is a requirement for NGESO to specify the minimum technical requirements for FRR and RR providing units and groups in SOGL Articles 158 and 161. These are referred to in **SOGL Article 158(3) and Article 161(3).** This is a connection requirement but only for those parties that apply to provide FRR or RR reserve services. There was disagreement in the Workgroup as to whether or not these requirements, be that prequalification or connection, applies only to parties who applied to provide FRR or RR.

(b) Prequalification without Assets

It was noted by one workgroup member that the implementation of prequalification processes should not inadvertently become a barrier to entry. In the new case of assets who's primary commercial focus is on the delivery of reserve services to the TSO 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 finance ability of these assets."

(c) Providers connected to the distribution networks

One Workgroup member stated that it would be prudent to engage DNOs (known as 'DSOs' in SOGL) in regards to the minimum technical requirements, especially in light of wider industry aspiration for distribution led investment signals. It was suggested by another Workgroup member that this could be encapsulated within the Workgroup Consultation questions in order to gauge DNO impacts. It was also agreed by the Workgroup that this engagement is encapsulated within the Terms of Reference of the Workgroup.

A Workgroup member stated that though this may be the case, but it would be prudent to engage other impacted parties. A Workgroup member highlighted that Article 182(2) states that for the purposes of prequalification process, is that NGESO should develop and specify, an agreement between the TSO and DSOs, setting out the terms of the exchange of information required for these prequalification processes. The Workgroup came to the consensus that DNO involvement should be sought in the consultation process, and questions considered by the Workgroup in order to gain the best inputs in scope with the Terms of Reference of the modification.

SOGL Article 182(4) was highlighted to the Workgroup. The Proposer stated that it was his belief that during the three month prequalification assessment period; of any individual reserve providing unit or group prequalification application; that this would be where NGESO would work with the relevant DSO to determine any limits to or exclude the delivery of active power reserves located(s) in its distribution system that application. Several Workgroup members disagreed, as new reserve providing assets to be financed well in advance of prequalification, along with minimum technical any specific DSO limits should be set out prior to prequalification.

It was suggested by the Workgroup that SOGL 182(2), 182(3) and 182(4) in terms of the agreement should be included in the legal text, ensuring that it is clear that conversations will be held with the DSO in line with the provisions set out accordingly. The Proposer said this may be

better developed in conjunction with the DSOs. However, a Workgroup member noted that the TSO and DSOs agreement(s) in this area would have to be fully transparent to stakeholders so that potential reserve providers were fully aware of this prior to submitting their prequalification application.

Post Workgroup 3, the Code Administrator found that there had been DNO attendance in the formative stages of the Workgroup. The Code Administrator made the Workgroup aware of this. The workgroup requested the views of other parties in respect of the role of DSOs in the context of the prequalification process for either FCR, FRR or RR, in question 6 of the GC0114 Workgroup consultation with responses detailed in Annex 3 .

(c) Mandatory GB services

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 NGESO (SO) has sufficient tools to enable the safe, economic and efficient operation of the transmission system. NGESO considers that parties who are currently mandated to provide a capability as a condition of connection should not be required to go through an additional prequalification activities, and therefore the existing connection process would provide sufficient verification of compliance.

NGESO considers that SOGL Article 155(3) recognises this approach:

"Where the compliance with certain requirements of this Regulation has already been verified by the reserve connecting TSO, it will be recognised in the prequalification".

Alternatively, some Workgroup members considered that the intention of SOGL is that only those reserve providing units or groups who want to apply to prequalify to provide a reserve service to NGESO are required to undertake the prequalification process. Where a party wishes to provide a reserve service, then a formal prequalification application is required to be submitted to the TSO **(SOGL Article 155(3), 159(3) and 162(3)** plus 182(2), 182(3) and 82(4)), which may not be granted, and therefore this indicates that the submission of a prequalification application is a voluntary activity and therefore the mandatory requirement to provide the capability as a condition of connection in GB is not consistent with SOGL in the context of this been deemed by the TSO as being the automatic application (without the reserve provider making any application) to prequalify for providing FCR, FRR or RR.

The Proposer noted the impact of removing mandatory services. Without mandatory services NGESO would not be able to guarantee that NGESO could secure the system. The presence of the mandatory market means that NGESO can guarantee NGESO's licence obligation to secure the system as there is enough capacity to provide the level of response (albeit at a cost).

Without that, NGESO would be relying on enough reserve providers deciding to participate in the commercial market to secure the system, which would not be guaranteed. For example, all technologies have to be able to provide response so that NGESO could utilise them to secure the system. There is no guarantee that all technologies would take part in a commercial market if they were not required to. Whilst some might, others wouldn't, even if the market price was very high. It was highlighted that the SOGL has provision for GB specifying the operational procedures for when FCR services have been exhausted (SOGL 152(7)) in the Synchronous Area Operating Agreement[1] which, it was noted by the Workgroup, had yet to be finalised). This provision in theory allows for NGESO to specify that Mandatory Services can be called upon by NGESO. If NGESO were to use this approach, parties who do not to offer commercial service would not need to take part in the prequalification application process or

[1] The consultation for Great Britain - Synchronous Area Operational Methodology can be found here; https://consultations.entsoe.eu/markets/synchronous-area-operational-methodology-lfc-block/

the other cumbersome requirements for services they are currently never asked to provide, whilst still permitting NGESO to use this in an emergency only.

A Workgroup member questioned whether NGESO should be using firstly commercial markets, and only mandatory when other options have run out. NGESO set out that procuring at the last minute is the least economic method (although, in accordance with SOGL Article 9 (1), the test is whether the SO action is reasonable, efficient and proportionate, rather than economic). The Proposer outlined that by buying some response ahead of time allows NGESO to hedge their price exposure whilst maintaining flexibility to meet the system needs on the day.

Whilst there is still a difference in views within the Workgroup the proposed legal text is intended to be consistent with both views as it only requires an application to be made for prequalification for approved 'standard' or 'specific' products and currently there are no such approved products. Hence the key question on whether mandatory services are classified as FCR, FRR or RR or not requires to be dealt with when NGESO submit their application to Ofgem, after a public consultation, to get Mandatory Service Agreement services approved (by Ofgem) as 'specific' products as required by EBGL Article 26 in terms of being FCR, FRR or RR as those mandatory services meet the minimum technical requirements (in accordance with Articles 154, 158 and 161).

(d) Direct References to SOGL

The draft legal text provided by the Proposer was initially reviewed by the Workgroup. It was agreed that whilst references within the legal text to the SOGL Regulation itself would be avoided, so that GB parties could understand the GB Grid Code without having to reference to the EU legislation that cross references to SOGL (in the form of 'comments' would be provided at the consultation stage to allow stakeholders to see where the legal text stemmed from). Definitions would be simply copied from the SOGL Regulation where required. The Proposer agreed to provide a mapping of the relevant articles in SOGL to help Workgroup members understand where the requirements originated from. This was provided at Workgroup three and is available in Annex 5.

(e) Standard Forms for Prequalification

One Workgroup member requested that the prequalification processes be set out the form(s) to be completed by potential reserve providers as part of their formal application. The Workgroup agreed that this should be developed as a schedule to the Grid Code. These application forms are still to be developed, and these will be set out in due course. The Proposer's view is that these will be set out in the Standard Contract Terms and available on the NGESO website.

(f) Listing of Balancing Services

There was a request from two Workgroup members to list explicitly the existing Balancing Services in terms of whether they would be classified as either FCR, FRR or RR or not classified as any of these three as without this listing stakeholders would be unable to see that the implications of GC0114 could be to them. NGESO believes this would then require codification with the Grid Code of commercial products and services, which would restrict NGESO flexibility in procuring what they need and result in increased consumer cost; although a Workgroup member noted that code changes could (and have in the past) been enacted, if urgently required, within a single Working Day which suggested that flexibility of procurement could be achieved whilst ensuring open governance, full transparency and regulatory approval via a codification route. NGESO considers that codifying testing in the Grid Code would restrict NGESO's ability to development and improve their products over time; however, it was noted by a Workgroup member that the NGESO has to act, according to SOGL, in a fully transparent and non-discriminatory manner (which included the testing arrangements) so that actual and potential reserve providers can see what is (or maybe) expected of them. According to the Proposer if NGESO introduce a new frequency response specific product (which, as per Articles 18 and 26 of EBGL, would need to be subject to a public consultation and Ofgem approval) then the existing testing regime may not be appropriate, NGESO will therefore have to factor in 6-12

month development time to get a Grid Code change in for the new testing regime before any new reserve providers can go live; although a Workgroup member noted that if urgency is warranted, the necessary Grid Code change(s) could be undertaken much quicker.

Furthermore, it would be difficult for stakeholders to respond to a public consultation by NGESO on any future 'specific' product in a meaningful way if key information, such as the testing regime, was unknown. The obligations set out in Articles 18, 25 and 26 of EBGL suggest that there is not necessarily a quick method (as suggested by the Proposer) of introducing a new product in the future and therefore codifying might actually help. Nevertheless, according to NGESO in a world where change is happening faster and new technology types and new business models are being introduced every couple of months, codifying commercial products and services seems very inefficient and will result in additional costs to consumers. It also inhibits innovation; the CLASS project or domestic aggregation are just two examples of projects which would suffer if NGESO were unable to respond to new developments in their testing documents. However, a Workgroup member noted that in respect of the provision of demand side response to the TSO (i.e. NGESO); such as the CLASS project or domestic aggregation; there are multiple EU Network Code obligations associated with that which would have to be discharged prior to any (national) change(s) being implemented and that these could take some time to progress.

(g) Reassessment of Providers

During the sixth Workgroup meeting the main discussion point was around the reassessment of providers. Reassessment of providers of FCR/FRR/RR is required at least every 5 years or where the capability of equipment may have changed (SOGL Arts 155.6, 159.6, 162.5). This requirement has been placed directly into the modification proposal under the text in BC.5.1.1.2. The Proposer would envisage this process as being close to a self-certification but with any further detail being set out in the Standard Contract Terms for specific services once these have been developed. Workgroup members were concerned that if a formal reassessment process was required they might be precluded from providing a service until this was concluded (as happens today with Transmission connected power stations). This would not be the intention with GC0114 where changes did not affect their ability to provide a service which points to the need perhaps for a two part process with the first stage being a very quick assessment of relevance which would not affect availability, followed very rarely by a more detailed re-qualification and only where merited. This would align better with existing compliance testing in which generally service providers inform National Grid only when they are incapable of providing a service (for example, where a generator having excitation issues cannot be frequency responsive) and then when they are available again. This does also return to a discussion about what constituted significant modernisation encountered during implementation of the Requirements for Generators code (see GC0100-102) in which the ability of Ofgem to settle disputes under Transmission Licence Condition C9 was highlighted. For the avoidance of doubt, and in order not to discriminate, it will be necessary to treat all providers of FCR, FRR or RR in the same way in terms of applying the reassessment approach irrespective of whether they are Transmission or Distribution connected.

The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup requested the views of other parties as to whether or not this would be beneficial to the market to have this codified in question 8 of the GC0114 Workgroup consultation responses to which can be found in Annex 3.

3. Balancing Services Mapping

The Workgroup reviewed the existing balancing service mapping to the FCR, FRR and RR reserve products, which was provided by NGESO. This is attached in Annex 5. Several corrections and additions were made. It was agreed that the mapping of the existing balancing services to the future reserve products would be validated through the Workgroup consultation. The Workgroup reviewed FCR, FRR and RR definitions set out in SOGL Article 3(2). Key timescales were highlighted, namely:

- Less than or equal to 10 seconds = FCR

- Greater than 10 seconds and less than or equal to 15 minutes = FRR

- Greater than 15 minutes = RR.

Load Frequency Control (LFC) was explained as being the Load Frequency Control area as defined under SOGL. It was noted that GB is a single synchronous area and a single load frequency control area. The Proposer confirmed that with GC0114 FCR, FRR and RR is solely concerned with frequency management (which is tagged as energy not system). The Proposer advised that reserve products can be used for any application to manage the transmission system, and this is consistent with SOGL. NGESO believes SOGL is sufficiently flexible to avoid duplicate processes being necessary. Three Workgroup members raised concerns on this point.

The question was raised as to whether NGESO have the ability use reserve providers for FCR, FRR or RR that have not gone through the relevant SOGL prequalification application processes. It was advised by the Proposer to the Workgroup that if existing processes were aligned and provided sufficient verification of compliance then there should be no need for reserve providers to go through two qualification processes. Therefore all reserve provision that has been qualified through the existing mandatory service processes can be accessed by NGESO. One Workgroup member disagreed, noting that the intention within SOGL was that a single prequalification application process was to be followed for potential providers of either FCR, FRR and RR and didn't believe it was the intention of SOGL that automatic prequalification could (as the Proposer suggests) be assumed. Another Workgroup member opined that there does appear to be a drive for consistency, holding reserve providers to account and finding a common demonstration of capability – however this should be achieved by only completing one process. There was an opinion in that Workgroup that SOGL is not flexible enough for this to be permitted. A Workgroup member illustrated that from an engineering point of view, the equipment is available for a variety of tasks, but from a commercial point of view there might not be the appetite to do so, and hence why arrangements for prequalification application(s) must be voluntary.

The draft mapping of existing products to FCR, FRR and RR reserve services has been provided in Annex 5. The Workgroup requested in the views of other parties if they considered this mapping to be appropriate in question 5 of the GC0114 Workgroup Consultation with responses detailed in Annex 3.

The Original proposal had intended that if an individual balancing service was listed as providing 2 or more of the European reserve categories (e.g FRR and RR), that the reserve service provider would have to meet the minimum technical requirements for both of the European reserve categories. Therefore providers of STOR, for example,

would need to meet the FRR and RR minimum technical requirements and prequalify for both accordingly.

A Workgroup member stated that the Balancing and Services mapping only relates to those set out in SOGL. This is an issue based on the current GB definition of Balancing Services which currently list all ancillary services as balancing services and not just the services related to energy balancing which are being dealt with by SOGL.

4. Cross Code Impacts

The Proposer identified several areas where there may be potential cross-code impacts, primarily with Distribution Code. It was also noted that within Grid Code, that GC0097 is also developing a prequalification process for the Project TERRE requirements (see P344, a BSC modification, for more details) which is to be the 'standard' product for RR; whilst Project MARI would, eventually, lead to a similar 'standard' product (in this case for FRR) which would necessitate a prequalification process. Furthermore, it was recognised that similar aspects to GC0114 existed.

There were no identified consumer or environmental impacts. A Workgroup member circulated the proposed Project TERRE prequalification activities (from GC0097) which the Workgroup agreed appear consistent with GC0114 proposal. Another Workgroup member stated that they were concerned that Project TERRE (GC0097) has assumed automatic prequalification for existing BM providers (as also proposed under GC0114), and that SOGL requires a formal prequalification application to be made by the potential reserve providing unit or group as automatic deemed application cannot be assumed according to SOGL.

The Proposer stated that they consider that the connection application is sufficient, and that existing compliance testing is sufficient for prequalification therefore no additional activities is required. However, a Workgroup member noted that for existing potential providers it would not have been known (when they signed their connection agreement) what FCR, FRR or RR was (along with the associated obligations etc.,) whilst for new potential providers it would be wrong, in terms of their connection to the network, to impose additional mandatory obligations, as regards FCR, FRR or RR, than those set out in the RfG, DCC or HVDC network codes. Discussion ensued around getting legal advice on this topic, and the Proposer suggested that he would have National Grid's legal team look into this.

Two Workgroup members requested independent legal advice (not from the Proposer's own legal team). The Code Administrator was asked to consider this. The questions, as agreed by the Workgroup ,which will, initially, go to the Proposer's legal team for review are as follows:

1. In light of the application process set out in Article 155 (paragraph 3), Article 159 (paragraph 3) and Article 162 (paragraph 3) together with the connection requirements set out in RFG, DCC and HVDC, are NGESO allowed under the European regulations to compel parties to prequalify to provide FCR, FRR or RR reserve services as a condition of their connection? (Advice may be sought as to what "potential provider" means within SOGL 155(2)).

   This is the key question. The requirement to have capability/provide particular services is "mandatory" today for certain parties under the Grid Code for existing nationally specified services. In our view however, SOGL doesn't make prequalification a mandatory activity in itself for the purposes of the new

"European" requirements; it just makes prequalification a mandatory requirement to be able to provide "European" services. The intention of using the connection application as the prequalification application was to streamline the process as far as possible so parties didn't have to make separate applications, and to avoid placing an additional and inefficient burden on Users, rather than to make prequalification itself a mandatory activity. To recognise this, the workgroup agreed a clarification in the legal text to reiterate that use of the connection application process was only where a User indicated that they wished this to take place.

2. In light of the application process set out in Article 155 (paragraph 3), Article 159 (paragraph 3) and Article 162 (paragraph 3) together with the connection requirements set out in RFG, DCC and HVDC, should FCR, FRR and RR reserve services be considered as either mandatory or voluntary, or, in accordance with recital 3 of SOGL, both

   We don't believe SOGL specifies whether or not the provision of services is mandatory. At the moment in GB, services are a mix of mandatory (such as BM, Mandatory Frequency Response) and voluntary (such as Firm Frequency Response). "National" and "European" services will continue and will be subject to the future and continued development of specific products. There is nothing in SOGL to contradict this. In our view, the reference to application suggests it is voluntary to provide the European services (even if the capability for those services is a connection requirement) and notwithstanding that the prequalification requirements, if these services are to be provided, are mandatory.

3. In light of SOGL Article 152 (paragraphs 7 and 8) can NGESO only call upon mandatory services only after all FCR has been exhausted?

No. SOGL 152.7/8 requires what happens in the case of exhausting FCR to be set out in the synchronous area operational agreements. These are currently being considered by Ofgem (decision expected March 2019). Under the NGESO proposal mandatory services can be used alongside voluntary services, with decisions made based on the most economically efficient option available (regardless of whether the service is mandatory or voluntary).

A Workgroup member noted that in accordance with article 9(1) SOGL that only costs assessed as reasonable, efficient and proportionate would be recoverable by NGESO from stakeholders via charges.

4. Does this principle also apply to FRR and RR reserve services?

Yes, see the answers to questions 1 - 3 above.

5. In accordance with Articles 155, 159 and 162 of SOGL, National Grid must develop and make publicly available the details of EU prequalification processes. National Grid published a document in September 2018 to do this, however, GC0114 may require that changes are needed to this document – can we do this in line with the Articles mentioned?

This would not be the intent of the drafting. The code is entirely silent on the process for revisions to this (and it is not covered in Article 7 which applies to revisions to methodologies). In publishing, what was in effect a first draft ahead of completion of the Workgroup the NGESO met the European obligation for compliance but it was acknowledged that further work was required which would be progressed as part of this Workgroup – and this was highlighted in the document published. Where any user-facing, change was required it would always be the case that, following Ofgem guidance, the existing GB frameworks and governance processes would be employed.

The NGESO representative agreed to include a review of the change process within the legal review of the specified questions. The NGESO representative also stated that the process for notification of changes is to be captured in the Standard Contract Terms.

5. Discussion on different testing requirements

The Proposer set out that the GC0114 proposed prequalification process as defined do not set any harmonised minimum testing requirements for either FCR or separate requirements for FRR, or separate requirements for RR. Instead the proposer set out that prequalification process require, as a minimum, a self-certification against the minimum technical requirements with no testing requirement. It was acknowledged that testing is required today for some existing balancing services either as part of the connection process or for prequalification for some services. The Proposer is not intending, with GC0114, to define any harmonised minimum level of compliance tests within these prequalification processes for FCR, FRR or RR reserve services. This does not mean testing requirements for individual reserve services are removed.

A Workgroup member noted that there is a requirement, in SOGL, to set minimum technical requirements for FCR, FRR and RR (as set out in Articles 154, 158 and 161 respectively) which are applied in a harmonised way and therefore it made sense to apply a separate testing requirements for FCR or separate testing requirements for FRR, or separate requirements for RR based on these minimum technical requirements. The current testing requirements for existing balancing services are, for example, set out below (for Mandatory Frequency Response and FFR testing). NGESO's view is that these are different existing balancing services and hence have different testing requirements as detailed below.

(a) Mandatory Service Agreement (MSA)

The MSA tests cover the capability across the whole load range with the provider having the freedom to operate its plant at variable loading levels in the BM. The tests are specified in the Grid Code with all the same tests for all plant types included. Some of the tests are more targeted to exploring issues in one technology compared to another. However all technologies have to undertake all tests to avoid any perceived discrimination.

The mandatory response capability requirement is exactly that and where required by the Grid Code based on size. These tests are set out in OC5.A.2.8.7 and OC5.A.4.5.7 for GB Users and ECPA.5.8.7 and ECPA.6.6.7 for EU code Users. The tests characterise the stability and deliver of Primary, Secondary & High response across the load range declared by the provider with onward delivery of values within the MSA

contract which are used in control and settlement when the mandatory service is despatched.

(b) Firm Frequency Response (FFR)

The FFR tests are by definition at a fixed loading level agreed as part of the commercial agreement (which, a Workgroup member noted, in the context of SOGL, and NGESO 2 August 2018 FFR testing consultation means they may not be harmonised[2] and could be discriminatory as it does not treat all providers in the same way). There appears to be many ways of offering an FFR service.

1. For an existing provider by utilising a single load point from the MSA and where this is the case and there is no modification to the control functions there should be no need to complete any more tests. The existing MSA values would be applied.

2. For an existing provider by offering a single load point but with an enhanced performance. Where this is the case and there is a modification to the control functions some testing to confirm the enhanced performance and no adverse impact on stability etc., should be required. The appropriate tests as defined within the testing guidance for providers of FFR and published by NGESO. Which tests are used would be determined based on discussion between NGESO and the provider and understanding of how the enhanced service will be delivered drawing on the existing MSA test methodology. An example here is a party who offered a FFR 1% droop response service with 90MW delivery in 10s. Whereas the normal MSA 4% droop response was at about 50MW in 10s so there was good reason to perform additional testing to explore this faster response.

3. For new providers (typically non-BMU) the FFR testing approach does not require providers to carry out MSA tests. These tests are more targeted to what is required for this commercial service and the typical demand side providers capability. Where FFR are being provided by generators with an MSA in place the two positions above should apply instead (which, a Workgroup member noted, could be discriminatory).

A number of Workgroup members still believed that it would be beneficial to potential and actual reserve providers to include the FCR, FRR and RR testing within the prequalification application process as this would allow all activities required to be undertaken by the reserve provider to supply the service to be seen in one place. A potential alternative modification proposal has been be submitted relating to the FCR, FRR and RR testing requirement which can be found in Annex 4.

The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup requested the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR, in question 9 of the GC0114 Workgroup consultation with responses detailed in Annex 3.

[2] available at www.nationalgrid.com

6. Implementation

The Proposer advised that the prequalification application process requires to be in place by 14 September 2018 but believed that there was a large degree of flexibility in SOGL on implementation options.

Options, which were discussed by the Workgroup are as follows:

- Automatic prequalification application for existing service providers with review in 5 years' time; or

- Prequalification application processes defined and implemented as and when with new and existing service providers.

The general consensus within the Workgroup was that automatic prequalification application was not allowed as the SOGL requires a formal application to be made by a party wishing to provide FCR, FRR or RR reserve services and this is the way the GC0114 proposal has been drafted.

Whilst the implementation timeline of the prequalification application process is clearly defined it was noted that the point in time by which parties have to ensure they have prequalified to allow them to provide an FCR, FRR or RR reserve service was not. It was suggested that this modification could be implemented in such a way as to only apply as and when each balancing service becomes either a 'standard' or 'specific' service under Articles 18, 25 and 26 of EBGL.

For the RR category, the 'standard' product will be the that being developed as part of Project TERRE, which is anticipated to go-live in December 2019. Article 26 of EBGL gives NGESO the option to develop a proposal for defining and using 'specific' (national) products (over and above multi Member State 'standard' products) for balancing energy and balancing capacity.

However, these need to be implemented in parallel with the 'standard' products (as per Article 26 (3) of EBGL). NGESO confirmed to the Workgroup that it intends to do so, and will do so after the approval of the RR implementation framework[3] (this implementation framework has recently been submitted to all EU regulators for approval). It should also be noted that when NGESO start to use the 'standard' product platform they will then be limited to only using approved 'standard' and 'specific' products for that service (see Article 25 (1) of EBGL). This could be as early as December 2019 for RR services. The Workgroup confirmed that six months could be needed to account for the SOGL pre-qualification application timescales. Whilst similar arrangements exist for the FRR 'standard' product (via the development of Project MARI) albeit with different timescales, there are no such provisions for FCR services so it is not clear when formal FCR reserve services will be introduced. Estimated introduction dates are highlighted in Annex 5.

[3] https://www.entsoe.eu/news/2018/06/26/european-balancing-guideline-implementation-two-important-frameworks-submitted-to-regulators-approval/

Given the introduction of FCR, FRR and RR reserve services by the EBGL is outside the scope of GC0114, the best option of implementation for the prequalification application process for FCR, FRR and RR is by only requiring applications for prequalification once an FCR, FRR or RR reserve service is formally approved by the NRA(s). It is conclusion of the Workgroup that the timelines highlighted in this report are considered during the implementation process for these services and highlighted to Users during those consultations.

The proposer agreed with the implementation approach proposed by the workgroup and amended the original solution accordingly.

During the course of the Workgroup the publication date of 14 September 2018 passed and the NGESO representative confirmed that they had published a pre-qualification document (see the link below). The NGESO representative stated that a lot of work went into publishing this document with GC0114 in mind. It was confirmed that it may require updating after the conclusion of the GC0104 Workgroup as it was a snap shot in time.

https://www.nationalgrideso.com/sites/eso/files/documents/EU%20Prequalification%20Processes.pdf

7. NGESO Process on Pre-Qualification

During Workgroup 3, the Proposer advised the Workgroup that NGESO's approach to prequalification for balancing services is changing to move away from onerous compliance testing and towards more stringent performance monitoring. The prequalification process proposed by NGESO is a self-certification process without any testing requirements. A Workgroup member stated that they believed this process currently lacked clarity. One member gave an example whereby when an item of equipment is qualified, there wouldn't be a test of every single associated piece of equipment. One Workgroup member noted that NGESO still require compliance testing onsite.

It was noted by the Workgroup that some equipment needs site testing, which led to wider discussion around fair competition. One Workgroup member noted that the type testing offsite had been able to connect, and he supported the idea of site testing offsite. The same Workgroup member referred to SOGL Article 155(5) to support his statement.

The Proposer noted that although NGESO have a legal deadline to publish the pre-qualification process by 14th September 2018, this transition to put these into practice is a longer timescale. Workgroup members noted that communication on this process with all stakeholders is critical.

(a) BEGA agreements and Pre-qualification

The Workgroup entered discussions on BEGA agreements being part of the prequalification application processes. The Workgroup discussed the issue of formal application, with one Workgroup member in particular noting that this was important legal step. In the view of the Workgroup member the presumed application (to prequalify to provide FCR, FRR or RR) would not be compatible with SOGL. The Workgroup view was that if the equipment installed is capable of being utilised at a later date, then it can be retested if indeed necessary if an application to prequalify is forthcoming.

One Workgroup member stated their belief that automatic pre-qualification would place risk on a party who does not want to be involved in balancing service provision as they will be required to price themselves out of the market and as a result the Authority may ask why the price is not competitive. The same Workgroup member noted that they would be happy with a simple but voluntary process, noting potential nervousness when parties are informed of automatic pre-qualification. The difference between an engineering and commercial point of view was also highlighted. The Workgroup noted that there may be scenarios whereby relevant engineering equipment is available, but commercially a provider only want to part take on selected occasions.

(b) FFR testing guidance

The Proposer confirmed that NGESO plan to consult on an updated FFR testing guidance document later in 2018– as signalled in the NGESO Product Roadmap for frequency response and reserve. The Proposer stated his belief that some Balancing Services, which the proposal expects to be approved as 'specific' FCR, FRR and RR services in the future, should be mandated to ensure NGESO can ensure security of the system. The proposer acknowledged that currently there are many testing requirements, but that NGESO is moving to build a greater focus on performance monitoring. A Workgroup member noted that in order to ensure the operational security of the interconnected transmission system it is essential to define a set of relevant minimum technical requirements; such as for FCR, FRR and RR; that reserve providing units or groups need to meet. The Workgroup member also pointed out that, for the avoidance of doubt, complying with SOGL will ensure the security of the system. The proposer agreed that it was necessary to specify minimum technical requirements, however the proposer believed that SOGL was silent on the testing of those minimum technical requirements. Another Workgroup member outlined that in terms of FCR, FRR and RR reserve services, there should be a minimum testing regime for all participants to meet. The Proposer noted that this could be set at zero to ensure a harmonized approach, highlighting that (in such a case) the technical requirements were identical with or without testing.

(c) High Level Process Based on SOGL Articles 155 and 182

During the workgroup process, the workgroup membership discussed the process for prequalification based on SOGL Articles 155 and 182. This is outlined below.

Step One:

Any Potential party who wishes to provide either FCR, FRR or RR to NGESO; from either 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; would need to complete a short prequalification application form and formally submit it to NGESO. The intention is that the form will be simple to complete and if, for example, a party is already providing certain services to NGESO that by indicating this on the form then little additional information will be required to be completed on the form.

Step Two:

Once NGESO receives the formal application it will consider it. Within eight weeks of the submission date NGESO will confirm that the application is complete – if it is not then the applicant has four weeks to submit the additional information requested by

NGESO. If this additional information is not submitted then the application will be deemed withdrawn.

Step Three (Transmission connection):

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 NGESO will have evaluated the application and confirmed back to the party that their FCR, FRR or RR unit(s) or group(s) meet the prequalification criteria.

Step Three (Distribution connection):

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 NGESO will, having liaised with the relevant DSO(s), have evaluated the application and confirmed back to the party that their FCR, FRR or RR unit(s) or group(s) meet the prequalification criteria.

The NGESO representative stated that a service provider could do a tick box exercise of the products they wished to pre-qualify for. It may be that if they pre-qualify for the more onerous requirements then they may already meet the requirements for the less onerous items.

8. Discussion of Workgroup Consultation Responses

During the fifth Workgroup meeting, the responses to the 12 Workgroup consultation questions were considered by the Workgroup. The discussions in relation to each question are outlined below:

Question 1: Do you believe that GC0114 original proposal better facilitates the Applicable Grid Code Objectives?

The Workgroup noted that around half of the respondents to the consultation thought that the Original better facilitated the Grid Code objectives and the other half of the respondents thought the proposed alternative was the better option.

Question 2: Do you support the proposed implementation approach?

The Workgroup noted that the majority of respondents supported the approach.

The Workgroup discussed the implementation approach including what date the modification would be effective from and any transition period. The NGESO representative stated that for RR there was a clear interaction with TERRE and that at present there was no definitive date. The other two FCR and FRR are not as clear.

A Workgroup member queried whether a person that qualifies for TERRE has qualified for wider BM access as this is relevant to smaller parties.

The Workgroup agreed that the implementation date should be 10 Working Days after an Authority decision.

The Workgroup recommended that a minimum of a six-month notice is given to industry where a new product is to be launched to allow participants to undertake the necessary pre-qualification process prior to that product going live.

Question 3: Do you have any other comments?

The Workgroup noted the consultation responses.

A Workgroup member stated that there needed to be transparency around the volume of services provided. The NGESO Representative stated that NGESO publish a lot of information after the event. The same Workgroup member stated that they would like real time data as there is an existing concern around the lack of real time transparency. The NGESO representative stated that the concern raised was valid but that they did not think that it was within the scope of this modification.

A Workgroup member stated that they would prefer to only pre-qualify for the services they provide as they do not wish to be in a position where they are forced to provide mandatory services.

The NGESO representative queried whether the preference is to qualify for the whole of one category (e.g. RR) or specific services within a category? A Workgroup member suggested that participants should be able to select specific individual services or qualify for all of them as appropriate to the applicant's circumstances.

The NGESO Representative stated that FRR and FCR are linked to regulatory requirements.

A Workgroup member queried whether the workgroup thought the products should be mapped to a specific type of testing (i.e. FCR, FRR, and RR). They stated that if this was to occur then all the technical requirements would need to be completed for the specific type of testing. In addition, the Workgroup member stated that when providing a product on FCR, there is a requirement to meet all the requirements set out in European law.

A Workgroup member stated that the implementation dates are linked to TERRE and MARI dates. They confirmed that the testing for the products could in theory be implemented earlier than the MARI and TERRE dates. The NGESO Representative agreed that they would be implemented sooner and that it would be useful to industry to give a definitive date of when implementation will take place.

A Workgroup member stated that if you have prequalified for FCR, FRR or RR and a new product is introduced then you are already pre-qualified for the new product, providing the respective minimum requirements for the FCR, FRR or RR have been met. This is to reduce the number of times participants are pre-qualifying.

Question 4: Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?

The Workgroup noted the consultation responses.

Question 5: Do you have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?

The Workgroup noted the consultation responses.

Question 6: The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?

The Workgroup noted the consultation responses.

The Workgroup discussed the Energy Networks Association response.

A Workgroup member stated that if an industry participant cannot do something within FCR, FRR or RR then they cannot prequalify. Another Workgroup member stated that you may be able to technically do something within these requirements but for operational reasons the DSO can stop you from providing a service. Another Workgroup member stated that there can be difference between what is in the connection agreement and the actual delivery due to local network constraints and therefore it needs to be clearer about pre-qualification and what the connection agreement states.

A Workgroup member stated that the Workgroup was still lacking DNO representation. The NGESO representative stated that there had been discussion with the Energy Networks Association and they were looking to have a representative join the group.

A Workgroup member raised the concern that the provisions need to ensure that it does not provide an opportunity for anti-competitive arrangements e.g. a situation where a party pre-qualifies for items that they will not be providing in order to gain a monetary advantage.

Question 7: The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?

The Workgroup noted that there was a mixture of views in relation to the Original proposal and the WAGCM. They noted that the Original proposal does not put the testing requirements within the Grid Code but rather would make this part of the Standard Contract Terms, for the avoidance of doubt, these are not existing Standard Contract Terms, but rather new terms developed for new products. The Alternative sets out the testing regime in the Grid Code.

A Workgroup member stated that placing the testing requirements in the Grid Code means that they subject to Open Governance. The NGESO representative stated that they do not agree that the Grid Code is the most appropriate place for the testing requirements as these should be contained within the Standard Requirements.

A Workgroup member stated that it was significantly easier to have one document with all relevant information than to have multiple documents and therefore they supported the requirements being specified in the Grid Code.

A Workgroup member stated that if the requirements were placed in the Standard Contract Terms and a change was required here is a four week consultation period where views can be made known.

Question 8: The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.

The Workgroup noted the consultation responses. A Workgroup member queried whether existing products could be changed and whether new products needed to be agreed by Ofgem? Another Workgroup member stated that their understanding of the EU Guideline on Electricity Balancing 'EBGL' (2017/2195) was that the introduction of a new product requires a public consultation followed by submission of a proposal by the TSO (National Grid for GB) to the National Regulatory Authority (Ofgem for GB) for approval.

The NGESO representative stated that where there is a new product it would have new Standard Contract Terms, which means there would be a proposal which would be consulted on before sending it to Ofgem for approval. However, the Workgroup member noted that it would still have to follow the Articles 4, 5, 6 and 10 of EBGL process.

A Workgroup member stated that the requirements for FCR, FRR and RR requirements are as set out in SOGL. If a new RR product was introduced, it would need to meet all the technical requirements of RR.

A Workgroup member stated that those industry participants that are not party to the Grid Code can get permission from Ofgem to raise a modification. Another Workgroup member said that getting permission from Ofgem is a barrier and makes the process more difficult.

A Workgroup member stated that if the requirements are set out in the Grid Code then a modification can be raised by any Grid Code party, whereas if the requirements are set out in the Standard Contract Terms then only NGESO can make amendments.

The NGESO representative stated that NGESO is subject to Ofgem regulation/oversight. They confirmed that NGESO will listen to market participants and could make changes easier. Their view was that Grid Code modifications are cumbersome.

Question 9: The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.

The Workgroup noted the consultation responses. The NGESO representative stated that the reason for putting things in Standard Contract Terms rather than the Grid Code is that the Grid Code should only contain mandatory requirements.

A Workgroup member stated that the FCR, FRR and RR requirements are mandatory for all providers of these services. Another Workgroup member stated that the WAGCM is about harmonisation as well as codification.

Question 10: In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?

The Workgroup noted the consultation responses. The NGESO representative stated that they would follow up on the SSE consultation response in relation to gaining legal advice on the specifies questions.

Question 11: Do you have any views on pre-qualification without assets, as detailed in Section 7?

The Workgroup noted the consultation responses. A Workgroup member stated that if a participant cannot provide a service then they cannot pre-qualify.

The Workgroup discussed the meaning of "primary commercial focus". The NGESO representative explained that it was about pre-qualifying but where a party cannot deliver the service due to the DNO. They stated that there will need to be some compliance testing to test that the infrastructure can deliver what it was stated to be. The NGESO representative confirmed that this would be set out in the Standard Contract Terms and it will ensure a level playing field. The Workgroup discussed around a pragmatic approach to testing once the services are installed as it could mean that the participant can pre-qualify before installation takes place. A more streamlined check will be required following installation.

Question 12: "What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"

The Workgroup noted the consultation responses. A Workgroup member stated that there is no risk of accidentally excluding potential providers as you need to qualify for FCR, FRR or RR.

Another Workgroup member stated that if extra requirements in addition to FCR, FRR and RR are included, they do not want to include anything that may inadvertently exclude future participants.

Another Workgroup member stated that the RfG sets out the connection conditions and that new parties need to pre-qualify.

Legal Text

The Workgroup then discussed the proposed legal text and provided comments which were noted in the draft legal text.

5 Workgroup Vote

The Workgroup believe that the Terms of Reference have been fulfilled and GC0114 has been fully considered.

The Workgroup met on 05 December 2018 and voted on whether the Original would better facilitate the Grid Code objectives than the baseline and what option was best overall.

At the Workgroup meeting held 30 October 2018, the Workgroup agreed to support the proposed WAGCM which became the Workgroup Alternative Grid Code Modification (WAGCM).

The Workgroup voted against the Grid Code objectives for the Original Proposal and the WAGCM. The Workgroup voted and three Workgroup members concluded that the Original Proposal is the best option, six Workgroup members believed that the WAGCM is best and the baseline received zero votes.

In conclusion, the Workgroup supported the WAGCM1 as the best option.

The voting record is detailed below:

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)
Rob Wilson						
Original	Y	Y	Y	Y	-	Y
WAGCM1	Y	Y	Y	N	-	Y
Voting Statement: Both the original and the alternative comply with this area of European obligation in setting out a prequalification process and building on the initial draft published by the NGESO in September. The original adopts a minimum (or only necessary change) approach and is therefore our preference; the alternative in placing testing requirements in the Grid Code is less efficient. The specific products that will fall within the European FCR/FRR/RR categories have not yet been developed. Once these are,						

the requirements for each including any testing will be set out in their standard contract terms which will be consulted on. The use of standard contract terms allows parties other than Grid Code Users to participate more easily and also allows better flexibility in the development of products to meet changing system needs rather than any new product needing to be codified. Testing requirements, if placed in the Grid Code, are likely to be incomplete for a specific product and will also be duplicated in the standard contract terms. This is not efficient and may add confusion.

Garth Graham						
Original	-	Y	-	Y	-	Y
WAGCM1	-	Y	-	Y	-	Y

Voting Statement:

GC0114 Original.

Better facilitates in terms of competition and discharging some (but not all) of the obligations arising from European law and is neutral against the other objectives. Therefore, against the baseline (which discharge non of the EU law obligations) the Original is better overall.

WACM1

WACM1 better meets the applicable objectives in terms of both facilitating competition and complying with EU law requirements. In addition WACM1 is also better (than the Original) in terms of transparency (thus complying with Article 4(2) (b) of SOGL) as the testing arrangements will be clearly set out for all stakeholders to see (and for the Authority to approve, which conforms with the EU law requirements on the NRA in that respect as per Article 6(1) of SOGL). The Original does not ensure transparency in this regard.

Furthermore, WACM1 is also better in terms of complying with the principle of harmonisation (thus conforming to Recital (3) of SOGL) as well as the requirement (on the TSO) not to discriminate as the testing regime will be applied to all providers of the respective services (FCR, FRR or RR) in the same way (depending on which of the three services - FCR, FRR or RR – being provided) based on the common technical minimum requirements for each of the services (FCR, FRR and RR). In this respect the Original is deficient as it does not ensure that a harmonised approach will be applied to all providers of FCR (or FRR or RR, as applicable) in terms of them conforming to the same testing regime based on the common technical minimum requirements for FCR (or FRR or RR, as applicable) set out in Article 154 (or Article 158 for FCR or Article 161 for RR, as applicable).

Alastair Frew						
Original	Y	Y	Y	Y	-	Y
WAGCM1	Y	Y	Y	Y	-	Y

Voting Statement:

Whilst both options implement EU regulations, WACM1 provides a more transparent and harmonised process for all parties.

Greg Scott-Cook						
Original	Y	Y	Y	Y	-	Y
WAGCM1	-	Y	-	N	-	Y
Voting Statement: Positive. Complying with the prequalification requirements of SOGL via the code ensures good governance.						
Rick Parfett						
Original	Y	Y	Y	Y	-	Y
WAGCM1	-	N	Y	Y	-	Y
Voting Statement: the original is more efficient and better promotes competition than the WACM, which puts additional requirements in the Grid Code. Locating these requirements in Standard Contract Terms will make it easier to adapt them to future business models and product offerings.						
Tim Ellingham						
Original	Y	Y	Y	Y	-	Y
WAGCM1	Y	Y	Y	Y	Y	Y
Voting Statement: My vote is for the WACM as it reaches nearer the idea of having generation requirements in all one place. The current situation with multiple codes and ancillary agreements adds unnecessary complexity for new entrants. I also believe that having a central, codified prequalifying process would actually simplify the administration of associated services.						
John West						
Original	Y	Y	Y	Y	-	Y
WACM1	Y	Y	Y	Y	-	Y
Voting Statement: Both proposals should enable pre-qualification processes for the FCR, FRR and RR services to be established. In both cases, the participation of distribution resources in providing these services should be more effective through the requirement for GBSO liaison with DNOs on potential distribution network restrictions.						
Josh Logan						
Original	Y	Y	Y	Y	-	Y
WACM1	Y	Y	Y	Y	-	Y
Voting Statement: The Original develops a prequalification process for providers of FCR, FRR and RR and will ensure compliance with the SOGL. WAGCM1 also discharges the obligations in the SOGL but will also introduce transparent, harmonised and non-discriminatory testing requirements into the Grid Code. Compared to the Original, this better						

facilitates Applicable Grid Code Objectives (i) and (ii).

William Carr						
Original	Y	Y	Y	Y	-	Y
WACM1	Y	Y	Y	Y	Y	Y

Voting Statement:

"The original modification proposal supports the achievement of the Grid Code objectives principally by allowing for the requirement placed on NGET (SO) by the SOGL to develop and make public prequalification processes for the provision of the frequency reserve services defined under the NC Balancing Code to be met. Additionally, the original modification proposes to implement this requirement in a manner which minimises the impact on stakeholders and avoids duplication of effort, as such it is considered to support the efficient operation of the transmission system. The WACM builds on the original modification proposal to promote the harmonisation of the testing that service providers will be required to complete. In this way the WACM is consider to better facilitate competition and so further promote the security and efficiency of the transmission system."

<u>Vote 2</u> – *Which option is the best? (Baseline, Original solution or WACM(s))*

Workgroup Member	BEST Option?
Rob Wilson	**Original**
Garth Graham	**WAGCM1**
Alastair Frew	**WAGCM1**
Greg Cook Scott	**Original**
Rick Parfett	**Original**
Tim Ellingham	**WAGCM1**
John West	**WAGCM1**
Josh Logan	**WAGCM1**
William Carr	**WAGCM 1**

7 GC0114: Relevant Objectives

Impact of the modification on the Applicable Grid Code Objectives:

Relevant Objective	Identified impact
(a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	Positive
(b) Facilitating effective 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
(c) 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
(d) 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
(e) 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 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

The legal text proposed requires NGESO to ensure that individual Balancing Services follow the SOGL prequalification processes following the regulatory approval that Balancing Service as a Standard or Specific Product.

9 Code Administrator Consultation: how to respond

If you wish to respond to this Code Administrator Consultation, please use the response pro-forma which can be found under the 'Industry Consultation' tab via the following link;

https://www.nationalgrideso.com/codes/grid-code/modifications/gc0114-system-operation-guideline-prequalification-processes

Responses are invited to the following questions;

1. Do you believe GC0114 better facilitates the Applicable Grid Code Objectives? Please include your reasoning.

2 Do you support the proposed implementation approach?

3. Do you have any other comments?

Views are invited on the proposals outlined in this consultation, which should be received by **5pm on 28 January 2019**. Please email your formal response to: grid.code@nationalgrid.com

If you wish to submit a confidential response, please note the following;

Information provided in response to this consultation will be published on National Grid's website unless the response is clearly marked 'Private & Confidential', we will contact you to establish the extent of this confidentiality. A response marked 'Private & Confidential' will be disclosed to the Authority in full by, unless agreed otherwise, will not be shared with the Grid Code Review Modifications Panel or the industry and may therefore not influence the debate to the same extent as a non-confidential response.

Please note an automatic confidentiality disclaimer generated by your IT System will not in itself, mean that your response is treated as if it had been marked 'Private & Confidential'

10 Legal Text

The legal text for the Original can be found in Annex 2 and for WACGM1 in Annex 4

Annex 1 GC0114 Terms of Reference

Workgroup Terms of Reference and Membership

TERMS OF REFERENCE FOR GC0114 WORKGROUP

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.

Responsibilities

1. The Workgroup is responsible for assisting the Grid Code Review Panel in the evaluation of Grid Code Modification Proposal **GC0114: 'System Operation Guideline: Prequalification Processes'** proposed by Robert Selbie of National Grid Electricity Transmission in May 2018 and presented to the Grid Code Review Panel on 16 May 2018.

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.*

   (v) *To promote efficiency in the implementation and administration of the Grid Code arrangements.*

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 and costs;

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. Demonstrate what has been done to cover this clearly in the report

d) Consider cross code impacts (eg. with GC0097) and how the modification co-exists with other industry codes to ensure consistency with services being developed and implemented

e) Consider material impact of modification

f) Consider distribution connected parties providing the service

g) Ensure fair representation of industry through Workgroup membership to include generation, demand, storage, aggregators, existing and future balancing services providers

h) Ensure all requirements from EU Regulations are captured and mapped

i) Define the pre-qualification process

j) Define the transitional arrangements

k) Set the implementation date

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 **** for circulation to Panel Members. The final report conclusions will be presented to the Grid Code Review Panel meeting on ****.

Membership

It is recommended that the Workgroup has the following members:

Role	Name	Representing (User nominated)
Chair	TBC	Code Administrator
Technical Secretary	TBC Code Administrator	Code Administrator
National Grid Representative*	Rob Selbie	National Grid Electricity Transmission
Workgroup Member	Garth Graham	SSE
Workgroup Member	Joshua Logan	Drax Power
(Alternate) Workgroup Member	Paul Youngman	Drax Power
Workgroup Member	Alastair Frew	Scottish Power Generation
Authority Representative	TBC	
Observer	William Ramsey	NGET

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 GC0114 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

Full timeline to be confirmed.

The May 2018 Panel agreed for the Workgroup Report to be submitted in September 2018.

Annex 2 Original Legal Text

Legal Text

Proposed changes to the GLOSSARY & DEFINITIONS

Balancing Services	As defined in the **Transmission Licence.**
Demand Unit	An indivisible set of installations containing equipment which can be actively controlled at one or more sites by a **Demand Response Provider, Demand Facility Owner, CDSO** or by a **Non Embedded Customer**, either individually or commonly as part of **Demand Aggregation** through a third party who has agreed to provide **Demand Response Services.**
Demand Response Active Power	**Demand** within a **Demand Facility** or **Closed Distribution System** that is available for modulation by **The Company~~NGET~~** or **Network Operator** or **Relevant Transmission Licensee**, which results in an **Active Power** modification;
Frequency Containment Reserves (FCR)	means**,** in the context of **B~~b~~alancing S~~s~~ervices,** the active power reserves available to contain system frequency after the occurrence of an imbalance.
Frequency Restoration Reserves (FRR)	means**,** in the context of **B~~b~~alancing S~~s~~ervices,** the active power reserves available to restore system frequency to the nominal frequency.
Replacement Reserves (RR)	means**,** in the context of **B~~b~~alancing S~~s~~ervices**, the active power reserves available to restore or support the required level of FRR to be prepared for additional system imbalances, including generation reserves;
Standard Product	means a harmonised balancing product defined by all EU TSOs for the exchange of balancing services.
Specific Product	Means**,** in the context of **B~~b~~alancing S~~s~~ervices**, a ~~a~~ product ~~different from~~that is not a standard product;

Proposed changes to Balancing Code 5 BC5 (new code section)

BC5~~4~~.1 PREQUALIFICATION

~~NGET~~ The Company 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, **The Company~~NGET~~** shall ensure that prequalification processes for that **Balancing Service** follows the processes as set out here.

The Company~~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 may be understood to fulfil this formal application if so requested by the connecting party. For the avoidance of doubt, this does not compel a party to pre-qualify as part of their connection conditions.

BC5~~4~~.1.1 Prequalification Timelines

BC5.1.1.1 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 **The Company~~NGET~~** shall confirm the application is complete or incomplete (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 **The Company~~NGET~~** or it will be presumed that the application has been withdrawn

(c) For units connected to distribution networks, **The Company~~NGET~~** shall liaise with the relevant DNO(s) to identify potential limitations imposed on the proposed Balancing Services Provider by the distribution networks.

(d~~c~~) Within 3 months of confirming that all information has been provided **The Company~~NGET~~** shall confirm if the potential FCR, FRR or RR provider meets the requirements in BC5~~4~~.2.1, BC5~~4~~.3.1 or BC5~~4~~.4.1 respectively.

~~(d) Within 3 months of confirming all information has been provided, for units connected to distribution networks, NGET shall liaise with the relevant DNO(s) to identify potential limitations imposed on the proposed Balancing Services Provider by the distribution networks.~~

BC5.1.1.2 The Company~~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.

BC5~~4~~.2 FCR PREQUALIFICATION PROCESS

The Company~~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 BC5~~4~~.2.1.

A transitional period for the introduction of FCR Minimum Technical Requirements, as defined in BC5~~4~~.2.1 and BC5~~4~~.2.2, shall apply for those FCR providers who are not an **EU Code User**.

BC54.2.1 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 ± 500 mHz

d) specify the limitations of the energy reservoir of its FCR providing units or FCR.

e) Each FCR provider shall be capable of making available to **The Company**~~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; and

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 **The Company**~~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.

BC54.2.2 In addition to the requirements in BC54.2.1, where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **The Company~~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;

~~a)~~b) the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected;

~~b)~~c) the type of active power reserves;

~~c)~~d) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

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

The relevant DNOs will identify potential distribution network restrictions, based on technical reasons, on the provision of the proposed Balancing Service by the reserve providing groups or units.

BC 54.3 FRR PREQUALIFICATION PROCESS

The Company~~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 BC54.3.1 and BC54.3.2.

BC54.3.1 FRR Minimum Technical Requirements

Each FRR providing unit and each FRR providing group shall;

a) activate FRR in accordance with the setpoint received from **The Company~~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 **The Company~~NGET~~** real-time measurements of the connection point or another point of interaction agreed with **The Company ~~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 **The Company**~~**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.

BC4~~5~~.3.2 In addition to the requirements in BC5~~4~~.3.1, where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **The Company**~~**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;

~~a)~~b) the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected;

~~b)~~c) the type of active power reserves;

~~c)~~d) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

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

The relevant DNOs will identify potential distribution network restrictions, based on technical reasons, on the provision of the proposed Balancing Service by the reserve providing groups or units.

BC5.4 RR PREQUALIFICATION PROCESS

The Company 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 BC5.4.1 and BC5.4.2.

BC5.4.1 RR Minimum Technical Requirements

Each RR providing unit and each RR providing group shall;

a) activate RR in accordance with the setpoint received from **The Company**;

b) ensure activation of complete reserve capacity on RR within the activation time defined by **The Company**;

c) ensure de-activation of RR according to the setpoint received from **The Company**;

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 **The Company** real-time measurements of the connection point or another point of interaction agreed with **The Company**:

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 **The Company** 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.

BC5.4.2 In addition to the requirements in BC5.4.1, where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **The Company** 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 DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected;

c) the type of active power reserves;

d) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

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

The relevant DNOs will identify potential distribution network restrictions on the provision of the proposed Balancing Service by the reserve providing groups or units.

Proposed changes to Balancing Code 4 BC4 TERRE

BC4.4 REQUIREMENTS FOR BM PARTICIPANTS WHO WISH TO PARTICIPATE IN TERRE ~~RR PREQUALIFICATION PROCESS~~

The Company~~**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 BC4.4.1 and BC4.4.2.

BC4.4.1 All BM Participants who wish to participate in TERRE must have successfully completed the prequalification process to be an RR provider as detailed in BC5~~RR Minimum Technical Requirements~~

~~Each RR providing unit and each RR providing group shall;~~

~~activate RR in accordance with the setpoint received from **NGET**;~~

~~ensure activation of complete reserve capacity on RR within the activation time defined by **NGET**;~~

~~ensure de-activation of RR according to the setpoint received from **NGET**;~~

~~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**:~~

~~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;~~

~~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;~~

~~ensure fulfilment of the RR availability requirements~~

~~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.~~

BC4.4.2 All BM Participants who wish to participate in TERRE must have the following capabilities

(a) **BM Participants** must have the ability to submit data and receive instructions by the use of electronic data communication facilities as provided for in CC.6.5.8

(b) **BM Participants** must be capable of following an **RR Instruction** issued by **The Company~~NGET~~**

(c) **BM Participants** must be able to provide **Physical Notifications**

(d) **BM Participants** must be able to provide a subset of **Dynamic Parameters** (as detailed in BC4.5.2)

(e) **BM Participants** must provide operational metering for their total output and for any individual component that may have an output greater than 1MW. This metering must have the following accuracy;

a. For a **BM Unit** with either **Generation Capacity** greater than 100MW or **Demand Capacity** greater than 100MW metering accuracy better than 0.5%

b. For a **BM Unit** with a **Generation Capacity** greater than 10MW but less than or equal to 100MW or **Demand Capacity** greater than 10MW but less than or equal to 100MW metering accuracy better than 1%

c. For all other **BM Units** an accuracy better than 2.5% is required

(f) **BM Participants** must have the ability to inform **The Company** if their availability changes using **Export and Import Limits**

(g) For **BM Participants** connected within a **User System BM Participants** must be capable of informing **Network Operators** of their availability and activation in real-time if required

In addition to the requirements in BC4.4.1, 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;

voltage levels and connection points of the reserve providing units or groups;

the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected;

the type of active power reserves;

the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

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

The relevant DNOs will identify potential distribution network restrictions, based on technical reasons, on the provision of the proposed Balancing Service by the reserve providing groups or units.

Annex 3 Workgroup Consultation Responses

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Joshua Logan* *Joshua.logan@drax.com* *01757 612736*
Company Name:	*Drax Power 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?	Yes, we believe that the Original proposal and the potential alternative both better facilitate the Grid Code Objectives. Specifically, we believe that the potential alternative better facilitates the Grid Code objectives than the Original. **Relevant Objective (i) – Positive** Defining FCR, FRR and RR prequalification process in accordance with EU regulations should facilitate greater cross border coordination of frequency response ancillary services. This should deliver a more efficient, coordinated and economical system for the transmission of electricity. As per the potential alternative, it seems sensible to include testing requirements as part of this prequalification process. This will provide additional clarity to service providers and better facilitate a coordinated system. **Relevant Objective (ii) – Positive** A Common European framework for prequalification of balancing services will enable the development of standard products such as TERRE and MARI and should facilitate greater competition within balancing markets. As per the potential alternative, harmonising testing requirements will greater facilitate competition by ensuring parties are doing the correct tests and submitting the correct values.

		Relevant Objective (iii) – Positive For the reasons given above and the fact that the prequalification processes consider minimum technical requirements, GC0114 should promote security and efficiency in electricity transmission. **Relevant Objective (iv) – Positive** EU regulation SOGL requires NGET to develop and publish prequalification processes for FCR, FRR and RR. GC0114 will ensure compliance with this requirement.
2	Do you support the proposed implementation approach?	We support the implementation approach whereby the SOGL prequalification processes for individual Balancing Services will come into effect following the regulatory approval of that Balancing Service as a Standard or Specific Product.
3	Do you have any other comments?	Yes, we have some general comments on the areas that the workgroup is seeking legal advice. Currently, providers are free to price Mandatory Frequency Response as they choose. As such, National Grid should call on whichever service is most efficient and economic to meet their needs, regardless of whether it's a mandatory service or not.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No, we agree with the balancing services mapping.
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and	N/A

	182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	We agree with the proposer of the alternative that adding the harmonised testing will clarify the requirements that applicants need to meet. This will prevent applicants being surprised that after having prequalified, they are still ineligible and have to submit test results before being allowed to provide the service. Codified testing requirements will add industry oversight and correct any disparities between testing requirements for different parties.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	Drax considers that there is benefit in codifying the mapping of the balancing services into either FCR, FRR and RR. The additional industry oversight of the mapping will provide comfort to parties that balancing products can not be moved between categories or new products introduced without the formal modification process being followed.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	See response to Question 7.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No.
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	There has been significant entry into the FFR, STOR and Fast Reserve markets from new parties under the existing rules. As such, we do not consider there to be a defect with the current approach.
12	What are your views on having either a separate pre-qualification process for each balancing	We believe there is merit in having one pre-qualification process, this will ensure that equipment testing is efficient and that there is no double testing

	service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?	for the same requirements.
	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.	No.

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Rick Parfett, rick.parfett@theade.co.uk*
Company Name:	*The Association for Decentralised Energy*
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 GC0114 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	The ADE believes that the GC0114 original proposal better facilitates Grid Code Objectives iv), i) and iii). If the original (rather than the alternative) proposal is implemented, we believe that it will also facilitate the objective ii), relating to promoting competition in the generation and supply of electricity by facilitating greater competition within balancing markets. Elements discussed in the alternative proposal or the consultation report (but not contained in the original proposal), such as codification into the Grid Code of the FCR, FRR and RR products or the inclusion of testing requirements for FCR, FRR and RR in the Grid Code, could potentially have a negative impact on the objective ii). This is because, by enshrining these elements in the Grid Code, they could make them more difficult to adapt to future business models, product requirements and innovative product offerings. This would be detrimental to competition and to market entry by innovative new providers.
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	The ADE believes that National Grid's worry (stated on p.14 of the consultation document) that, without access to the mandatory market, "NGET (SO) would be relying on enough reserve providers deciding to participate in the commercial market to secure the system, which would not be guaranteed", is unfounded. In most other markets worldwide, reserve is procured through competitive commercial markets. National Grid's aim should be to secure the system reliably at the lowest overall cost; this involves paying attention to all costs, not just those on their accounts. Procuring reserve through competitive market

		tenders is the proven way to do this. Mandatory requirements tend to be more expensive as they remove the ability for providers to make commercial judgements about what participation is likely to be rational. Imposing obligations on these parties and forcing them to have the ability to provide response services which will never be economic to use is expensive for the parties and inefficient for the system.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	N/A
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	N/A
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	The ADE is concerned by the proposal within the Alternative Code Modification to enshrine testing requirements within the Grid Code. As outlined in our response to Question 9, it would be more appropriate to locate testing requirements within the Standard Contract Terms for each service. This has the benefit of locating the requirements in a place that participants are used to looking for them, rather than forcing them to search through the Grid Code, and of allowing National Grid to update these requirements more easily if innovative product offerings or business models emerge that require this.
8	The GC0114 Original proposed modification does not include the	The ADE does not believe that codifying the FCR, FRR or RR products into the Grid Code would be

	codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	beneficial. Instead, the parameters of these products should be set out in the Standard Contract Terms for each of them. This where participants are most used to looking, rather than within the Grid Code, so is the most intuitive place to locate them. It also provides more flexibility for National Grid to clarify or update specifications around the products in response to future market changes.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	The ADE does not believe that the testing requirements for FCR, FRR and RR should be set out in the Grid Code. It is important that participants, particularly new entrants, be aware of these requirements. The most appropriate place for the requirements would be within the Standard Contract Terms, where participants are most used to looking, rather than within the Grid Code. In addition, enshrining testing requirements within the Grid Code risks making them difficult and administratively intensive to alter, constraining National Grid's ability to update them to reflect the characteristics of new products or services. This could have a negative impact upon competition, creating unnecessary barriers to entry for potential new providers.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	N/A
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	The ADE supports the proposal that a provider should be able to pre-qualify without assets. As noted in the workgroup report, it is important that the ability to prequalify and enter into a commercial contract before the asset is installed be maintained, as this underpins the financeability of assets. Requiring assets to be in place before prequalification would have a negative impact on availability of capital financing, thereby creating a major and unnecessary barrier.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	This depends on the extent of the pre-qualification process. If it is simply a self-certification exercise involving the ticking of a box and submission of a small number of relevant documents, there is no issue with there being an upfront prequalification process specifically for SOGL. If, however, the pre-qualification process has any more detailed requirements, we recommend that

		there by a separate pre-qualification process for each balancing service including the SOGL criteria. Otherwise, there is a risk that the upfront prequalification process specifically for SOGL could accidentally exclude future providers with business models or service offerings that are different to those that exist today.
	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.	N/A

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Robert Selbie* Robert.selbie@nationalgrid.com *07896 727701*
Company Name:	*National Grid Electricity System Operator*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	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. The EU prequalification processes set out some common timescales and minimum technical requirements. 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 doing this under the established governance of the Grid Code. In May 2018, National Grid raised Grid Code modification GC0114 to develop these processes. The modification proposal was accepted by the panel who recommended that an industry workgroup be set-up to assist in the development. We believe this Workgroup Consultation comes at a good point in the workgroup development of this modification to open up GC0114 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 Balancing Service providers in particular to offer suggestions and provide feedback. National Grid has published a paper to make publicly available the details of the current EU prequalification processes in a "*EU Prequalification Processes paper*". This fulfils a requirement in SOGL for National Grid in its role as the GBSO to publish a proposal for these processes a year after the entry into force of SOGL which was on 14 Sept 2017. The *EU Prequalification Processes paper* can be found on the National Grid website (link below) and is attached to this response. www.nationalgrid.com/uk/electricity/codes/european-network-codes Further modification to these prequalification 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 normal Grid Code governance.

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 for GC0114 better fulfils 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. Defining FCR, FRR and RR prequalification process in accordance with EU regulations should facilitate greater cross border coordination of frequency ancillary services. By defining the EU prequalification processes National Grid, reserve provides and other EU TSOs will have common expectations regarding the minimum technical capabilities and the timescales for the prequalification process. This should facilitate the development of cross border services, and in turn deliver a more

		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) Positive. Clear prequalification processes remove a potential barrier to entry and create a transparent, level playing field in terms of the prequalification process requirements for Transmission and Distributed connected Balancing Service providers, thus improving competition. Therefore, our view is that the EU framework for prequalification of balancing services should facilitate greater competition within balancing service markets. A transition period has been set out for the introduction of the FCR requirements to existing providers to ensure a smooth implementation of the new requirements. 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. The EU prequalification processes introduce minimum technical requirements. The introduction of these minimum technical requirements should promote security and efficiency in the electricity generation, transmission and distribution systems. The EU Network Codes 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. A clear definition of the minimum technical requirements should enable balancing providers to efficiently meet these requirements. In addition, clearly defined minimum technical requirements ensures that Balancing Services providers have the

		capability necessary to manage the transmission and distribution systems securely and efficiently. 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; Positive. The definition of the EU prequalification processes is part of the implementation of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation. Developing this process under the established governance of the Grid Code should positively impact this objective as it will discharge the obligations in the EU Regulations in way that is accessible and familiar to GB parties, utilising the existing code governance processes to apply the new requirements in a transparent and proportionate way. v. To promote efficiency in the implementation and administration of the Grid Code arrangements. Neutral. No anticipated impact on the process of administering the Grid Code. So as noted above, the GC0114 original proposal better facilitates objectives (i)-(iv) and is neutral against objective (v).
2	Do you support the proposed implementation approach?	Yes. Linking the implementation of the prequalification to the regulatory approval of individual Balancing Services as 'specific' or 'standard' services appears to be a pragmatic way to introduce these new processes in GB.
3	Do you have any other comments?	No.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	We consider the mapping provided in Annex 4 to be a good overview of the current understanding of how existing GB Balancing Services map to the FCR, FRR and RR categories. The definitive mapping will only be known following the regulatory approval of the 'standard' and 'specific' products. The Balancing Services mapping is a snapshot of the status of existing Balancing Services, and will need to 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
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	National Grid understands that the development of the processes set out in SOGL Article 182.2, 182.3 and 182.4 can only be done with the involvement of the DNOs. NGET intends to work closely with DNOs to develop the implementation of these articles.
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	As set out in the Workgroup Consultation we are concerned that the GC0114 potential alternative proposal identified in the Workgroup Consultation could negatively impact some of the Grid Code objectives. Details set out below; i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity Negative. Defining a minimum level of testing which all Balancing Service providers must undertake could restrict innovative alternatives to upfront compliance testing - such as more onerous performance monitoring. As set out in our *Product Roadmap for frequency response and reserve (found here;https://www.nationalgrid.com/uk/electricity/balancing-services/future-balancing-services)*, technology changes are enabling a greater frequency and granularity of data for performance monitoring. We will be working with industry to determine the granularity and frequency of data which will be needed for ongoing performance

			monitoring, thereby allowing parties to select their metering solution. The ongoing performance monitoring initiative will allow the System Operator to pull data from parties as and when needed and monitor the performance of parties against their contractual obligations. Our current intention is to move away from onerous compliance testing and towards more stringent performance monitoring. For this reason, the Original solution proposes as a minimum a self-certification process without any testing requirements. The introduction of a minimum level of testing will restrict this transition, and hence the development 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) Positive. For the same reasons as the Original proposal. 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 Negative. As with the Original solution, the introduction of minimum technical requirements should promote security and efficiency in the electricity generation, transmission and distribution systems. However, introducing common minimum testing requirements restricts the ways that providers can demonstrate their capability to National Grid. This restriction could be inefficient, and hence we view the impact of this objective to be negative. 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; Negative. We consider that including testing requirements within the Grid Code discharges the obligations from the EU Regulations in an inefficient manner for the reasons set out above. v. To promote efficiency in the implementation and administration of the Grid Code arrangements. Neutral. No anticipated impact on the process of

		administering the Grid Code.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	We note that some parties in the Workgroup have requested additional aspects to be set out within the legal text, including the list of Balancing Services which fall into the FCR, FRR or RR categories We consider that including this addition would discharge the obligations from the EU Regulations in a less efficient manner as compared to the Original solution. The governance on the definition and use of standard and specific products is set out in the Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (EBGL). EBGL introduces a governance process which requires proposals to be developed by Transmission System Operators (TSOs) and submitted to national, regional or all EU National Regulatory Authorities (NRAs). In developing these proposals TSOs must consult stakeholders for a period of not less than one month. Introducing the list of the standard and specific products into the Grid Code could inadvertently lead to misalignments between the GB and EU governance processes. It would also reduce the flexibility that the SO has to establish new services commercially. For example, to add or remove a GB specific product National Grid is required by EBGL to: 1. Develop a proposal. 2. Consult on the change for a period of at least 1 month. 3. Submit the proposal to Ofgem for approval. In accordance with EBGL, Ofgem would then have 6 months to make their decision. If the list of Balancing Services was also in the Grid Code, National Grid would in addition be required to raise a Grid Code modification. Workgroup and Code Administer Consultations would likely be required and Workgroup Alternative Code Modifications (WACM) may be developed before a decision either by the Grid Code Review Panel or by Ofgem. Throughout these two parallel processes (the GB Grid Code modification and the EU EBGL amendment process) there are many opportunities to inadvertently introduce contradictory, misleading or confusing information. Therefore, it is our view that introducing two separate governance processes (Grid Code and the EBGL process) discharges the obligations from the EU Regulations in a less efficient manner as compared to the Original solution. Furthermore, as set out the Workgroup Consultation, we are

		concerned that codifying commercial products and services within the Grid Code would restrict NGET's flexibility in procuring products which efficiently meet the changing system needs. This could negatively impact the Grid Code objectives to facilitate competition in the generation and supply of electricity and to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	As detailed in our response to question 7 we not believe it is beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	We support the principle of providing an overview of the prequalification processes and have included an amended version of this summary in the *EU Prequalification Processes paper.*
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	The implementation of prequalification processes should not inadvertently become a barrier to entry. To avoid any disruption to existing providers a transition period for the introduction of the FCR requirements has been set out. 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.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification	We consider that the prequalification processes should be a simple as possible, so that prequalification does not introduce unnecessary complexity which could act as a barrier to entry. A single prequalification process for each Balancing Service, rather than a SOGL prequalification process in addition to a Balancing Service prequalification process appears to be the simpler approach.

	process specifically for SOGL ahead of any specific balancing service prequalification process?"	
	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 GC0114 legal text session planned following the closure of this Consultation.	None.

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Joshua Logan* *Joshua.logan@drax.com* *01757 612736*
Company Name:	*Drax Power 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?	Yes, we believe that the Original proposal and the potential alternative both better facilitate the Grid Code Objectives. Specifically, we believe that the potential alternative better facilitates the Grid Code objectives than the Original. **Relevant Objective (i) – Positive** Defining FCR, FRR and RR prequalification process in accordance with EU regulations should facilitate greater cross border coordination of frequency response ancillary services. This should deliver a more efficient, coordinated and economical system for the transmission of electricity. As per the potential alternative, it seems sensible to include testing requirements as part of this prequalification process. This will provide additional clarity to service providers and better facilitate a coordinated system. **Relevant Objective (ii) – Positive** A Common European framework for prequalification of balancing services will enable the development of standard products such as TERRE and MARI and should facilitate greater competition within balancing markets. As per the potential alternative, harmonising testing requirements will greater facilitate competition by ensuring parties are doing the correct tests and submitting the correct values.

		Relevant Objective (iii) – Positive For the reasons given above and the fact that the prequalification processes consider minimum technical requirements, GC0114 should promote security and efficiency in electricity transmission. **Relevant Objective (iv) – Positive** EU regulation SOGL requires NGET to develop and publish prequalification processes for FCR, FRR and RR. GC0114 will ensure compliance with this requirement.
2	Do you support the proposed implementation approach?	We support the implementation approach whereby the SOGL prequalification processes for individual Balancing Services will come into effect following the regulatory approval of that Balancing Service as a Standard or Specific Product.
3	Do you have any other comments?	Yes, we have some general comments on the areas that the workgroup is seeking legal advice. Currently, providers are free to price Mandatory Frequency Response as they choose. As such, National Grid should call on whichever service is most efficient and economic to meet their needs, regardless of whether it's a mandatory service or not.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No, we agree with the balancing services mapping.
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and	N/A

	182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	We agree with the proposer of the alternative that adding the harmonised testing will clarify the requirements that applicants need to meet. This will prevent applicants being surprised that after having prequalified, they are still ineligible and have to submit test results before being allowed to provide the service. Codified testing requirements will add industry oversight and correct any disparities between testing requirements for different parties.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	Drax considers that there is benefit in codifying the mapping of the balancing services into either FCR, FRR and RR. The additional industry oversight of the mapping will provide comfort to parties that balancing products can not be moved between categories or new products introduced without the formal modification process being followed.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	See response to Question 7.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No.
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	There has been significant entry into the FFR, STOR and Fast Reserve markets from new parties under the existing rules. As such, we do not consider there to be a defect with the current approach.
12	What are your views on having either a separate pre-qualification process for each balancing	We believe there is merit in having one pre-qualification process, this will ensure that equipment testing is efficient and that there is no double testing

	service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?	for the same requirements.
	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.	No.

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Rick Parfett, rick.parfett@theade.co.uk*
Company Name:	*The Association for Decentralised Energy*
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 GC0114 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	The ADE believes that the GC0114 original proposal better facilitates Grid Code Objectives iv), i) and iii). If the original (rather than the alternative) proposal is implemented, we believe that it will also facilitate the objective ii), relating to promoting competition in the generation and supply of electricity by facilitating greater competition within balancing markets. Elements discussed in the alternative proposal or the consultation report (but not contained in the original proposal), such as codification into the Grid Code of the FCR, FRR and RR products or the inclusion of testing requirements for FCR, FRR and RR in the Grid Code, could potentially have a negative impact on the objective ii). This is because, by enshrining these elements in the Grid Code, they could make them more difficult to adapt to future business models, product requirements and innovative product offerings. This would be detrimental to competition and to market entry by innovative new providers.
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	The ADE believes that National Grid's worry (stated on p.14 of the consultation document) that, without access to the mandatory market, "NGET (SO) would be relying on enough reserve providers deciding to participate in the commercial market to secure the system, which would not be guaranteed", is unfounded. In most other markets worldwide, reserve is procured through competitive commercial markets. National Grid's aim should be to secure the system reliably at the lowest overall cost; this involves paying attention to all costs, not just those on their accounts. Procuring reserve through competitive market

		tenders is the proven way to do this. Mandatory requirements tend to be more expensive as they remove the ability for providers to make commercial judgements about what participation is likely to be rational. Imposing obligations on these parties and forcing them to have the ability to provide response services which will never be economic to use is expensive for the parties and inefficient for the system.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	N/A
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	N/A
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	The ADE is concerned by the proposal within the Alternative Code Modification to enshrine testing requirements within the Grid Code. As outlined in our response to Question 9, it would be more appropriate to locate testing requirements within the Standard Contract Terms for each service. This has the benefit of locating the requirements in a place that participants are used to looking for them, rather than forcing them to search through the Grid Code, and of allowing National Grid to update these requirements more easily if innovative product offerings or business models emerge that require this.
8	The GC0114 Original proposed modification does not include the	The ADE does not believe that codifying the FCR, FRR or RR products into the Grid Code would be

	codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	beneficial. Instead, the parameters of these products should be set out in the Standard Contract Terms for each of them. This where participants are most used to looking, rather than within the Grid Code, so is the most intuitive place to locate them. It also provides more flexibility for National Grid to clarify or update specifications around the products in response to future market changes.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	The ADE does not believe that the testing requirements for FCR, FRR and RR should be set out in the Grid Code. It is important that participants, particularly new entrants, be aware of these requirements. The most appropriate place for the requirements would be within the Standard Contract Terms, where participants are most used to looking, rather than within the Grid Code. In addition, enshrining testing requirements within the Grid Code risks making them difficult and administratively intensive to alter, constraining National Grid's ability to update them to reflect the characteristics of new products or services. This could have a negative impact upon competition, creating unnecessary barriers to entry for potential new providers.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	N/A
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	The ADE supports the proposal that a provider should be able to pre-qualify without assets. As noted in the workgroup report, it is important that the ability to prequalify and enter into a commercial contract before the asset is installed be maintained, as this underpins the financeability of assets. Requiring assets to be in place before prequalification would have a negative impact on availability of capital financing, thereby creating a major and unnecessary barrier.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	This depends on the extent of the pre-qualification process. If it is simply a self-certification exercise involving the ticking of a box and submission of a small number of relevant documents, there is no issue with there being an upfront prequalification process specifically for SOGL. If, however, the pre-qualification process has any more detailed requirements, we recommend that

		there by a separate pre-qualification process for each balancing service including the SOGL criteria. Otherwise, there is a risk that the upfront prequalification process specifically for SOGL could accidentally exclude future providers with business models or service offerings that are different to those that exist today.
	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.	N/A

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Helen Stack,* helen.stack@centrica.com
Company Name:	***Centrica Plc**, including **REstore***
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?	Centrica believes that the GC0114 original proposal better facilitates Grid Code Objectives iv), i) and iii).
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	Centrica would like to see enhanced transparency and stakeholder consultation around the development and updating of testing requirements. However, the most appropriate place for these requirements is within the Standard Contract Terms.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	N/A

7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	Centrica believes there is scope to improve the transparency and stakeholder consultation processes. However, we also want to National Grid to be able to update testing requirements easily, including to support the development of innovative product offerings. For this reason, we do not currently support placing the testing requirements within the Grid Code.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	Centrica does not believe it would be beneficial to the market to codify the FCR, FRR or RR products into the Grid Code. Centrica does want transparency around the description of these products, but we agree with the argument made by National Grid that codification would mean it has less flexibility to develop and improve their products in support of the market.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	Our response is the same as for Q7. Centrica believes the testing requirements need to be transparent and easily located. However, we do not believe it would be beneficial to set these out in the Grid Code because the change process is cumbersome. The testing requirements can be placed in the Standard Contract Terms, which can be more easily updated. We would however like to see improved processes and better engagement of stakeholders in the existing change processes for these Standard Contract Terms.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	If a provider can pre-qualify without assets then there need to be robust processes in place to disincentivise contract holders from pulling out or use Cure Plans. It is not clear from the consultation document how the proposed approach of stringent performance monitoring would deal with this.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific	We feel that an upfront SOGL pre-qualification process could be excessive and are leaning towards a combined approach.

	balancing service prequalification process?”	
	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.	N/A

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Saskia Barker (saskia.barker@flexitricity.com)*
Company Name:	*Flexitricity Limited*
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, the original proposal better facilitates GC objective (iv) since it implements the obligations from the SOGL in GB.
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?	No

Specific GC0104 questions

Q	Question	Response
5	Do you have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	No
7	The workgroup is interested to hear views on the draft	The Alternative Modification would codify testing requirements in the Grid Code, which would be more

	Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	appropriate to have in the Standard Contract Terms. Currently most non-BM service providers are not signed up to the Grid Code, so it is not an appropriate place to codify obligations on them. The SCTs also have a governance process that non-BM service providers are used to participating in. Non-BM service providers that are not party to the Grid Code can also not raise modifications themselves but must do so through a GC party or Ofgem, so it would be more arduous for these parties to be able to raise a medication to the testing requirements.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	It would not be beneficial to the market to have this codification. Non-BM service providers that are not party to the Grid Code cannot raise modifications themselves but must do so through a GC party or Ofgem, so it would be more arduous for these parties to be able to make any required changes to the definitions of these services. Innovative solutions usually come from small parties that are not currently signed up to the Grid Code, so codifying definitions in a document smaller providers are not used to looking, or can easily change, is likely to create a barrier to entry and discourage innovation.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	It would not be beneficial to the market to have this codification, it is more appropriate to have the testing requirements in the Standard Contract Terms for the service. Currently most non-BM service providers are not signed up to the Grid Code, so it is not an appropriate place to codify obligations on them. The SCTs also have a governance process that non-BM service providers are used to participating in. Non-BM service providers that are not party to the Grid Code can also not raise modifications themselves but must do so through a GC party or Ofgem, so it would be more arduous for these parties to be able to raise a medication to the testing requirements.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No

11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	Yes, providers should be able to prequalify without assets, like they currently can in the Capacity Market, to secure revenue that will help get the project built, especially for services where the delivery may be years away. Proper checks and restrictions need to be put in place to stop parties from bidding speculatively for assets that will never exist, however.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	This is dependant on the type of pre-qualification required. A process requiring self-certification and some documentation would be acceptable as upfront pre-qualification. A full-on testing regime would not. Otherwise, there is a risk that the upfront prequalification process specifically for SOGL could accidentally exclude future providers with business models or service offerings that are different to those that exist today.
	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.	No

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*John West, 07903 551469*
Company Name:	*Energy Networks Association - This response is provided on behalf of ENA's Open Networks project.*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	This response has been provided on behalf of the Energy Networks Association (ENA) and the Open Networks project that the ENA is co-ordinating on behalf of GB electricity network operators including Distribution Network Operators (DNOs). The Open Networks project has a number of workstreams aimed at improving whole system (Transmission-Distribution) processes and developing Distribution System Operator (DSO) functionality and models. Given the increasing scope to take reserve services from distributed energy resources, it is important that distribution network aspects are considered in assessing pre-qualification requirements and processes for services. We are grateful that the GC0114 workgroup recognised the need for Distribution Network Operator involvement and that question 6 was included to gather views on DSO involvement. As yet DNOs have not input directly to the GC0114 workgroup. In addition, contrary to sections 1 and 3 of the workgroup's report, we don't believe that the modification has been discussed as yet with the Distribution Code Review Panel. This response is largely focussed on the need for effective liaison between NGET (SO) and DNO/DSOs to enable the full and effective use of distribution connected resources to provide reserve services to NGET (SO).

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 that both the original proposal and the alternative proposal will help facilitate the Grid Code objectives if DNO/DSO roles are clarified. DNOs would prefer for the testing requirements to be included in the Grid Code as per the alternative proposal in Annex 2.
2	Do you support the proposed implementation approach?	As well as making the DNO/DSO role in prequalification more clear, we support the implementation approach including: - the timeline for the prequalification process, and - an approach where prequalification commences as “standard” and “specific” reserve products are agreed under Articles 18, 25 and 26 of EBGL. We agree that information gathered through the connection process for new service providers could be used to simplify the pre-qualification process for transmission connected units. The process should be clear and distinct though as in some cases, prospective service providers will look to opt into services through pre-qualification (European wide services for example). For new distribution connected units, information wont generally be available to NGET (SO) as part of the connection process and distinct pre-qualification processes would be required.
3	Do you have any other comments?	Please see answers to the specific GC0114 questions below.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	It is not proposed to raise an alternative. *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 GC0114 questions

Q	Question	Response
5	Do you have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	The mapping presented in Annex 4 of the Workgroup report is reasonable for NGET's current set of response and reserve products.
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	We would like the prequalification process to more clearly bring out the interaction between NGET(SO) and DNO/DSOs. Our preferred approach would be to base the process on the prequalification process that is being developed for Project TERRE. In broad terms, this process comprises the NGET (SO) notifying DNO/DSOs of any distribution connected units including sub-components that are seeking to provide a reserve service. (Sub-components are any discrete generation or demand elements that might be aggregated by a service provider to provide the service.) The NGET (SO) would gather data from prospective service providers and pass this to DNO/DSOs including: • The identification and location of reserve units (at sub-component level) including the point of connection to the distribution network, MPAN and post code (as available). • The voltage level at the point of connection to the distribution network for each unit (at sub-component level). • The maximum reserve capacity of each unit (at sub-component level). • The maximum rates of change of active power for each unit (at sub-component level). • Whether connection agreements are in place with DNO/DSOs for units (at sub-component level), the relevant DNO/DSOs and any restrictions on units that are notified in connection agreements. The DNO/DSOs would then confirm if a connection agreement is in place and notify if there are potential restrictions to unit operation and effective service delivery through the nature of the connection to the distribution network and any network limitations (e.g. ANM arrangements). The DNO/DSOs would not preclude a unit from

		providing services at the pre-qualification stage but would provide further information to the NGET (SO) (and to the prospective service providers) on any network limitations which might affect the capability of the units to provide the proposed service. To address concerns on prequalification without assets, DNOs would support potential service providers in clarifying potential restrictions ahead of, or during, a network connection process.
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	In principle we support the testing requirements being visible and clear to prospective service providers. One way to achieve this is to build on the existing practice and include the testing requirements in the Grid Code. The Workgroup Alternative Code Modification develops this approach and should be developed further.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	We recognise that codification of FCR, FRR and RR products could reduce the flexibility of the NGET (SO) to bring forward new solutions to system needs. However, the FCR, FRR and RR products to be used in GB and their descriptions should be transparent to GB stakeholders. This will help ensure a level playing field for potential service providers and will reduce the potential for conflicts of service with other MW services that network operators may be developing. There may be different ways to achieve transparency. One way could be through codification into the Grid Code. Another could be through description of the products in NGET's LC16 statements. We would ask the Workgroup to further consider options to achieve transparency. We also note from the workgroup consultation that the EBGL requires the approval of "specific" products for use in GB alongside the "standard" European-wide products. Further detail of how this will be achieved might inform how transparency is achieved and the need or otherwise for codification.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative	As the testing requirements for FCR, FRR and RR are highly technical, we believe that potential service providers would benefit from having clear visibility of these requirements.

	modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	The alternative modification builds on the current practice of including testing requirements in the Grid Code. This is preferable to not having the testing requirements set out as per the original proposed modification.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	We agree with the summary steps outlined under Section 8 **High Level Process Based on SOGL Articles 155 and 182.** We believe that the process elements outlined in the response to question 6 above fit with these steps.
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	For prequalification without assets for reserve providing units that are to be connected to a distribution network, a discussion on service provision could be arranged with the DNO/DSO to better understand potential restrictions through network limitations. This could take place when the developer is considering investment in new assets or as part of the process for connection to the distribution network.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	We support a separate pre-qualification process for each balancing service. This would be more thorough and should be more timely as any network restrictions that might impact units are more likely to be identified if pre-qualification takes place shortly before assets are likely to be participating in the service. If a potential service provider is seeking to pre-qualify for more than one balancing service, we would support the assessment of concurrent applications.

	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.	Having read through the full legal text, we believe that some of the proposed terminology needs to be updated to be more precise and in line with other Grid Code terminology. There are further comments on the text in the attached pdf document. The draft legal text below includes some suggested changes to support the effective liaison between NGET (SO) and DNO/DSOs. We would welcome the opportunity to further review

		the legal text before it is finalised by the workgroup. <u>Draft Legal Text</u> New paragraph BC4.1.1(d): (d) Within 3 months of confirming all information has been provided, for units connected to distribution networks, NGET shall liaise with the relevant DNO(s) to identify potential limitations imposed on the proposed Balancing Services Provider by the distribution networks. Modify paragraphs BC4.2.2, BC4.3.2 and BC 4.42 to read: In addition to the requirements in BC4.2.1/4.3.1/4.4.1, where a relevant **Balancing Service** is provided by reserve providing groups or units connected to distribution systems, **NGET** shall ensure that the prequalification process requires the following to be specified by the reserve provider; a) the voltage levels and points of connection to the distribution networks of the reserve providing units or groups; b) the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected; c) the type of active power reserves to be provided; d) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; e) the maximum rate of change of active power for each of the reserve providing units or groups; and f) whether connection agreements are in place for each of the reserve providing units, the relevant DNO and any restrictions on operation that are notified in the connection agreements. The relevant DNOs will identify potential distribution network restrictions on the provision of the proposed Balancing Service by the reserve providing groups or units.

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Tim Ellingham*
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?	Both the original and the alternative are better than the existing but the alternative provides more information to users as to what is expected.
2	Do you support the proposed implementation approach?	I support the alternative but feel it should be taken further regarding service description.
3	Do you have any other comments?	
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	

7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	There is always talk about ease of access to electricity markets but in regards to the EU wide reserve products there is no single place in the UK codes which tells a new user, simply, what is required and what needs to be done. Codification of FCR, FRR and RR would, or to some degree, illustrate to an new user what is required for UK participation.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	I believe it is beneficial to have this information as it should enable faster prequalification by removing ambiguity of interpretation of the base EU code.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	This is an important element and can affect investment decisions and project viability, plant should be able to pre-qualify based on proposed technical ability. An inability to do so would add a risk premium to a potential project.
12	“What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?”	I believe that having a separate pre-qualification process for each service would be clearer in demonstrating what is being qualified for.

	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

GC0114 - System Operation Guidelines Prequalification Processes

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.

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Any queries on the content of the consultation should be addressed to Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	Alastair Frew
Company Name:	ScottishPower 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 GC0114 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Yes, with inclusion of the proposed alternative on testing.
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 GC0114 questions

Q	Question	Response
5	Do you have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	It appears that the provider has to apply to the DSO who then subsequently forwards the application to the TSO. The biggest potential issue appears to be that the DSO can limit and even stop the supplier from being permitted to provide the service. It is not clear exactly what these restrictions would be based on or how they would be applied.

7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	We support the alternative.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	Whilst it would be more transparent to codify the products it is not clear it should be covered by this workgroup.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	We support including testing within the prequalification process as current the testing documents include the statement that these tests are required for prequalification.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	The prequalification process written in the SOGL indicates that the provider has to demonstrate the technical requirements so it is difficult to see how this can be done without equipment, however as these are all RFG requirements the new equipment needs to be compliant. The bigger issue is the potential network access restrictions which can be imposed during prequalification process which needs to be dealt with before connection is agreed.
12	“What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically	We believe that the prequalification process is best for a provider type ie FCR, FRR or RR and not for a specific service.

	for SOGL ahead of any specific balancing service prequalification process?"	
	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 GC0114 legal text session planned following the closure of this Consultation.	

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Garth Graham (garth.graham@sse.com)*
Company Name:	*SSE*
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?	Whilst in principle it appears that the Original may, on the face of it, better facilitate the applicable objective when compared to the baseline, on reflection it does not better meet the applicable objectives when compared with the potential alternatives as set out in the Workgroup consultation and, in particular, the potential alternative in Annex 5.
2	Do you support the proposed implementation approach?	There is a lack of detail on the proposed implementation approach and therefore we cannot support it at this time.
3	Do you have any other comments?	There is a total lack of (near) real time transparency around the volume of services provided via each specific and standard product. As such this has a negative effect on competition in the provision of specific and standard products.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	We note that there is a lack of clarity provided by the TSO in terms of what are the technical minimum requirements for FCR (Article 154) FRR (Article 158) and RR (Article 161). Therefore it is not possible for us to review the Balancing Services mapping at this time.
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles	We note the four steps listed at the bottom of page 21/ top of page 22 and agree with that approach.

	as detailed in Section 8?	
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	We have reviewed the potential alternative noted in Section 9 and shown in Annex 5. We believe this potential alternative has considerable merit when compared with the Original proposal as it ensures that the important testing regimes; for FCR, FRR and RR; are clearly set out for stakeholders (and not subject to unilateral change – without regulatory oversight).
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	It is our understanding that the TSO is required to set out the technical minimum requirements for FCR (Article 154) FRR (Article 158) and RR (Article 161). It is our view that, in accordance with the advice received from BEIS and Ofgem, this should be done via the Grid Code. We see little advantage to stakeholders in the opposite approach – that is, in having this been undertaken in secret by the TSO, without any regulatory oversight or the ability for stakeholders to provide, via open governance, different solutions – and note that the TSO seems to be the only party that supports it (the TSO) having such unilateral powers. Codifying the technical minimum requirements for FCR, FRR and RR will ensure transparency (as well as NRA oversight) for all stakeholders. It is also better for competition which, in turn, is better for end consumers.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	Clarification around the testing is a key aspect of the FCR, FRR and RR obligations from the perspective of stakeholders. Therefore setting the testing arrangements out in the Grid Code will be positive for stakeholders as it will ensure transparency (as well as NRA oversight) for all stakeholders. It is also better for competition which, in turn, is better for end consumers.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	We believe that an independent legal view of the four questions noted on page 17 of the Workgroup consultation report would assist stakeholders in responding, in due course, to the Code Administrator Consultation.
11	Do you have any views on pre-	Any assets will need to meet the technical minimum

	qualification without assets, as detailed in Section 7?	requirements for FCR, FRR or RR respectively as, for example, set out in the wording in Article 155 which refers to "a potential FCR provider". Similar wording appears in terms of FRR (Article 159) and RR (Article 162). Thus this also applies to prequalification without assets – as it will be necessary for any potential FCR provider (with, or without, assets) to demonstrate that it complies with the technical minimum requirements for FCR (or FRR / RR).
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	It is a requirement of SOGL that a party applies to pre-qualify for each of the services; FCR, FRR or RR; as the technical minimum requirements are different for each (as witnessed by the obligations etc., detailed in Articles 154, 158 and 161 respectively). In our view compelling parties to prequalify for FCR, FRR or RR, as part of the connection conditions (be that the 'CCs' or 'ECCs') is incompatible with (i) the RfG, DCC or HVDC requirements and (ii) SOGL.

	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.	It is not clear to us why GC0114 legal text matters should be considered by the GC0104 legal text session? In the context of the draft legal text for GC0114, we note that the solution has still to be finalised, therefore we are not in a position to provide final comments on the legal text at this time. That having been said, the proposed wording in BC4.1 as regards the Connection Conditions and the European Connection Conditions is incompatible with EU law, for the reasons we note in our answer to question 12 above.

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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Any queries on the content of the consultation should be addressed to Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Greg Scott-Cook* *Greg.scott-cook@uniper.energy* *07964 123043*
Company Name:	*Uniper*
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?	Supportive of the Original proposal as it seeks to implement the requirements for SOGL within the existing processes as much as possible and hence minimises disruption for service providers
2	Do you support the proposed implementation approach?	We support the approach in as much as it seeks to have a minimal impact on existing process but we would want transparency on what services the SO are offering. Regarding self-certification, this needs to be robust enough to give confidence that the capability will be there to deliver the service at the required level.
3	Do you have any other comments?	Providers should only be pre-qualified for services they can provide. Actions may be taken by the SO to contract for services, or providers to offer services, based on pre-qualification status. Hence pre-qualification for services that cannot be provided has the potential to lead to inefficient outcomes in procuring services and must be avoided.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	This seems fine

6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	N/A
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	The key difference is around the specification of testing requirements in the Grid Code modification. Hence see answer to Q9 regarding testing.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	It is important that providers are aware of the services available to the SO but to put this into the Grid Code may make it an onerous process to make changes.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	The appropriate testing should be defined for each service but because the SOGL categories of FCR/FRR/RR cut across many services it is not possible to have a single test without diluting the effectiveness of the testing or excluding certain providers.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	If potential assets are allowed to pre-qualify then there must be incentives to ensure that the provider proves that they can deliver the service as soon as possible and before the delivery period commences.
12	“What are your views on having either a separate pre-qualification process for each balancing service including the SOGL	We support avoiding additional processes but when applying for a service the provider needs to be aware of what commitment they are taking on and the implications of making the application, e.g. whether

	criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	they will become a mandatory service provider as a result, and given the option as to whether or not to sign up.
	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

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Helen Stack,* helen.stack@centrica.com
Company Name:	***Centrica Plc**, including **REstore***
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?	Centrica believes that the GC0114 original proposal better facilitates Grid Code Objectives iv), i) and iii).
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	Centrica would like to see enhanced transparency and stakeholder consultation around the development and updating of testing requirements. However, the most appropriate place for these requirements is within the Standard Contract Terms.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	N/A

7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	Centrica believes there is scope to improve the transparency and stakeholder consultation processes. However, we also want to National Grid to be able to update testing requirements easily, including to support the development of innovative product offerings. For this reason, we do not currently support placing the testing requirements within the Grid Code.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	Centrica does not believe it would be beneficial to the market to codify the FCR, FRR or RR products into the Grid Code. Centrica does want transparency around the description of these products, but we agree with the argument made by National Grid that codification would mean it has less flexibility to develop and improve their products in support of the market.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	Our response is the same as for Q7. Centrica believes the testing requirements need to be transparent and easily located. However, we do not believe it would be beneficial to set these out in the Grid Code because the change process is cumbersome. The testing requirements can be placed in the Standard Contract Terms, which can be more easily updated. We would however like to see improved processes and better engagement of stakeholders in the existing change processes for these Standard Contract Terms.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	If a provider can pre-qualify without assets then there need to be robust processes in place to disincentivise contract holders from pulling out or use Cure Plans. It is not clear from the consultation document how the proposed approach of stringent performance monitoring would deal with this.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific	We feel that an upfront SOGL pre-qualification process could be excessive and are leaning towards a combined approach.

	balancing service prequalification process?”	
	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.	N/A

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Saskia Barker (saskia.barker@flexitricity.com)*
Company Name:	*Flexitricity Limited*
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, the original proposal better facilitates GC objective (iv) since it implements the obligations from the SOGL in GB.
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?	No

Specific GC0104 questions

Q	Question	Response
5	Do you have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	No
7	The workgroup is interested to hear views on the draft	The Alternative Modification would codify testing requirements in the Grid Code, which would be more

	Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	appropriate to have in the Standard Contract Terms. Currently most non-BM service providers are not signed up to the Grid Code, so it is not an appropriate place to codify obligations on them. The SCTs also have a governance process that non-BM service providers are used to participating in. Non-BM service providers that are not party to the Grid Code can also not raise modifications themselves but must do so through a GC party or Ofgem, so it would be more arduous for these parties to be able to raise a medication to the testing requirements.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	It would not be beneficial to the market to have this codification. Non-BM service providers that are not party to the Grid Code cannot raise modifications themselves but must do so through a GC party or Ofgem, so it would be more arduous for these parties to be able to make any required changes to the definitions of these services. Innovative solutions usually come from small parties that are not currently signed up to the Grid Code, so codifying definitions in a document smaller providers are not used to looking, or can easily change, is likely to create a barrier to entry and discourage innovation.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	It would not be beneficial to the market to have this codification, it is more appropriate to have the testing requirements in the Standard Contract Terms for the service. Currently most non-BM service providers are not signed up to the Grid Code, so it is not an appropriate place to codify obligations on them. The SCTs also have a governance process that non-BM service providers are used to participating in. Non-BM service providers that are not party to the Grid Code can also not raise modifications themselves but must do so through a GC party or Ofgem, so it would be more arduous for these parties to be able to raise a medication to the testing requirements.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No

11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	Yes, providers should be able to prequalify without assets, like they currently can in the Capacity Market, to secure revenue that will help get the project built, especially for services where the delivery may be years away. Proper checks and restrictions need to be put in place to stop parties from bidding speculatively for assets that will never exist, however.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	This is dependant on the type of pre-qualification required. A process requiring self-certification and some documentation would be acceptable as upfront pre-qualification. A full-on testing regime would not. Otherwise, there is a risk that the upfront prequalification process specifically for SOGL could accidentally exclude future providers with business models or service offerings that are different to those that exist today.
	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.	No

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*John West, 07903 551469*
Company Name:	*Energy Networks Association - This response is provided on behalf of ENA's Open Networks project.*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	This response has been provided on behalf of the Energy Networks Association (ENA) and the Open Networks project that the ENA is co-ordinating on behalf of GB electricity network operators including Distribution Network Operators (DNOs). The Open Networks project has a number of workstreams aimed at improving whole system (Transmission-Distribution) processes and developing Distribution System Operator (DSO) functionality and models. Given the increasing scope to take reserve services from distributed energy resources, it is important that distribution network aspects are considered in assessing pre-qualification requirements and processes for services. We are grateful that the GC0114 workgroup recognised the need for Distribution Network Operator involvement and that question 6 was included to gather views on DSO involvement. As yet DNOs have not input directly to the GC0114 workgroup. In addition, contrary to sections 1 and 3 of the workgroup's report, we don't believe that the modification has been discussed as yet with the Distribution Code Review Panel. This response is largely focussed on the need for effective liaison between NGET (SO) and DNO/DSOs to enable the full and effective use of distribution connected resources to provide reserve services to NGET (SO).

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 that both the original proposal and the alternative proposal will help facilitate the Grid Code objectives if DNO/DSO roles are clarified. DNOs would prefer for the testing requirements to be included in the Grid Code as per the alternative proposal in Annex 2.
2	Do you support the proposed implementation approach?	As well as making the DNO/DSO role in prequalification more clear, we support the implementation approach including: - the timeline for the prequalification process, and - an approach where prequalification commences as “standard” and “specific” reserve products are agreed under Articles 18, 25 and 26 of EBGL. We agree that information gathered through the connection process for new service providers could be used to simplify the pre-qualification process for transmission connected units. The process should be clear and distinct though as in some cases, prospective service providers will look to opt into services through pre-qualification (European wide services for example). For new distribution connected units, information wont generally be available to NGET (SO) as part of the connection process and distinct pre-qualification processes would be required.
3	Do you have any other comments?	Please see answers to the specific GC0114 questions below.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	It is not proposed to raise an alternative. *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 GC0114 questions

Q	Question	Response
5	Do you have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	The mapping presented in Annex 4 of the Workgroup report is reasonable for NGET's current set of response and reserve products.
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	We would like the prequalification process to more clearly bring out the interaction between NGET(SO) and DNO/DSOs. Our preferred approach would be to base the process on the prequalification process that is being developed for Project TERRE. In broad terms, this process comprises the NGET (SO) notifying DNO/DSOs of any distribution connected units including sub-components that are seeking to provide a reserve service. (Sub-components are any discrete generation or demand elements that might be aggregated by a service provider to provide the service.) The NGET (SO) would gather data from prospective service providers and pass this to DNO/DSOs including: • The identification and location of reserve units (at sub-component level) including the point of connection to the distribution network, MPAN and post code (as available). • The voltage level at the point of connection to the distribution network for each unit (at sub-component level). • The maximum reserve capacity of each unit (at sub-component level). • The maximum rates of change of active power for each unit (at sub-component level). • Whether connection agreements are in place with DNO/DSOs for units (at sub-component level), the relevant DNO/DSOs and any restrictions on units that are notified in connection agreements. The DNO/DSOs would then confirm if a connection agreement is in place and notify if there are potential restrictions to unit operation and effective service delivery through the nature of the connection to the distribution network and any network limitations (e.g. ANM arrangements). The DNO/DSOs would not preclude a unit from

		providing services at the pre-qualification stage but would provide further information to the NGET (SO) (and to the prospective service providers) on any network limitations which might affect the capability of the units to provide the proposed service. To address concerns on prequalification without assets, DNOs would support potential service providers in clarifying potential restrictions ahead of, or during, a network connection process.
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	In principle we support the testing requirements being visible and clear to prospective service providers. One way to achieve this is to build on the existing practice and include the testing requirements in the Grid Code. The Workgroup Alternative Code Modification develops this approach and should be developed further.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	We recognise that codification of FCR, FRR and RR products could reduce the flexibility of the NGET (SO) to bring forward new solutions to system needs. However, the FCR, FRR and RR products to be used in GB and their descriptions should be transparent to GB stakeholders. This will help ensure a level playing field for potential service providers and will reduce the potential for conflicts of service with other MW services that network operators may be developing. There may be different ways to achieve transparency. One way could be through codification into the Grid Code. Another could be through description of the products in NGET's LC16 statements. We would ask the Workgroup to further consider options to achieve transparency. We also note from the workgroup consultation that the EBGL requires the approval of "specific" products for use in GB alongside the "standard" European-wide products. Further detail of how this will be achieved might inform how transparency is achieved and the need or otherwise for codification.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative	As the testing requirements for FCR, FRR and RR are highly technical, we believe that potential service providers would benefit from having clear visibility of these requirements.

	modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	The alternative modification builds on the current practice of including testing requirements in the Grid Code. This is preferable to not having the testing requirements set out as per the original proposed modification.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	We agree with the summary steps outlined under Section 8 **High Level Process Based on SOGL Articles 155 and 182.** We believe that the process elements outlined in the response to question 6 above fit with these steps.
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	For prequalification without assets for reserve providing units that are to be connected to a distribution network, a discussion on service provision could be arranged with the DNO/DSO to better understand potential restrictions through network limitations. This could take place when the developer is considering investment in new assets or as part of the process for connection to the distribution network.
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	We support a separate pre-qualification process for each balancing service. This would be more thorough and should be more timely as any network restrictions that might impact units are more likely to be identified if pre-qualification takes place shortly before assets are likely to be participating in the service. If a potential service provider is seeking to pre-qualify for more than one balancing service, we would support the assessment of concurrent applications.

	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.	Having read through the full legal text, we believe that some of the proposed terminology needs to be updated to be more precise and in line with other Grid Code terminology. There are further comments on the text in the attached pdf document. The draft legal text below includes some suggested changes to support the effective liaison between NGET (SO) and DNO/DSOs. We would welcome the opportunity to further review

		the legal text before it is finalised by the workgroup. <u>Draft Legal Text</u> New paragraph BC4.1.1(d): (d) Within 3 months of confirming all information has been provided, for units connected to distribution networks, NGET shall liaise with the relevant DNO(s) to identify potential limitations imposed on the proposed Balancing Services Provider by the distribution networks. Modify paragraphs BC4.2.2, BC4.3.2 and BC 4.42 to read: In addition to the requirements in BC4.2.1/4.3.1/4.4.1, where a relevant **Balancing Service** is provided by reserve providing groups or units connected to distribution systems, **NGET** shall ensure that the prequalification process requires the following to be specified by the reserve provider; a) the voltage levels and points of connection to the distribution networks of the reserve providing units or groups; b) the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected; c) the type of active power reserves to be provided; d) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; e) the maximum rate of change of active power for each of the reserve providing units or groups; and f) whether connection agreements are in place for each of the reserve providing units, the relevant DNO and any restrictions on operation that are notified in the connection agreements. The relevant DNOs will identify potential distribution network restrictions on the provision of the proposed Balancing Service by the reserve providing groups or units.

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Tim Ellingham*
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?	Both the original and the alternative are better than the existing but the alternative provides more information to users as to what is expected.
2	Do you support the proposed implementation approach?	I support the alternative but feel it should be taken further regarding service description.
3	Do you have any other comments?	
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	

7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	There is always talk about ease of access to electricity markets but in regards to the EU wide reserve products there is no single place in the UK codes which tells a new user, simply, what is required and what needs to be done. Codification of FCR, FRR and RR would, or to some degree, illustrate to an new user what is required for UK participation.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	I believe it is beneficial to have this information as it should enable faster prequalification by removing ambiguity of interpretation of the base EU code.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	This is an important element and can affect investment decisions and project viability, plant should be able to pre-qualify based on proposed technical ability. An inability to do so would add a risk premium to a potential project.
12	“What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?”	I believe that having a separate pre-qualification process for each service would be clearer in demonstrating what is being qualified for.

	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

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	Alastair Frew
Company Name:	ScottishPower 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 GC0114 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Yes, with inclusion of the proposed alternative on testing.
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 GC0114 questions

Q	Question	Response
5	Do you have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	No
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	It appears that the provider has to apply to the DSO who then subsequently forwards the application to the TSO. The biggest potential issue appears to be that the DSO can limit and even stop the supplier from being permitted to provide the service. It is not clear exactly what these restrictions would be based on or how they would be applied.

7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	We support the alternative.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	Whilst it would be more transparent to codify the products it is not clear it should be covered by this workgroup.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	We support including testing within the prequalification process as current the testing documents include the statement that these tests are required for prequalification.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	The prequalification process written in the SOGL indicates that the provider has to demonstrate the technical requirements so it is difficult to see how this can be done without equipment, however as these are all RFG requirements the new equipment needs to be compliant. The bigger issue is the potential network access restrictions which can be imposed during prequalification process which needs to be dealt with before connection is agreed.
12	“What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically	We believe that the prequalification process is best for a provider type ie FCR, FRR or RR and not for a specific service.

	for SOGL ahead of any specific balancing service prequalification process?"	
	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 GC0114 legal text session planned following the closure of this Consultation.	

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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Any queries on the content of the consultation should be addressed to Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Garth Graham (garth.graham@sse.com)*
Company Name:	*SSE*
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?	Whilst in principle it appears that the Original may, on the face of it, better facilitate the applicable objective when compared to the baseline, on reflection it does not better meet the applicable objectives when compared with the potential alternatives as set out in the Workgroup consultation and, in particular, the potential alternative in Annex 5.
2	Do you support the proposed implementation approach?	There is a lack of detail on the proposed implementation approach and therefore we cannot support it at this time.
3	Do you have any other comments?	There is a total lack of (near) real time transparency around the volume of services provided via each specific and standard product. As such this has a negative effect on competition in the provision of specific and standard products.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	We note that there is a lack of clarity provided by the TSO in terms of what are the technical minimum requirements for FCR (Article 154) FRR (Article 158) and RR (Article 161). Therefore it is not possible for us to review the Balancing Services mapping at this time.
6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles	We note the four steps listed at the bottom of page 21/ top of page 22 and agree with that approach.

	as detailed in Section 8?	
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	We have reviewed the potential alternative noted in Section 9 and shown in Annex 5. We believe this potential alternative has considerable merit when compared with the Original proposal as it ensures that the important testing regimes; for FCR, FRR and RR; are clearly set out for stakeholders (and not subject to unilateral change – without regulatory oversight).
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	It is our understanding that the TSO is required to set out the technical minimum requirements for FCR (Article 154) FRR (Article 158) and RR (Article 161). It is our view that, in accordance with the advice received from BEIS and Ofgem, this should be done via the Grid Code. We see little advantage to stakeholders in the opposite approach – that is, in having this been undertaken in secret by the TSO, without any regulatory oversight or the ability for stakeholders to provide, via open governance, different solutions – and note that the TSO seems to be the only party that supports it (the TSO) having such unilateral powers. Codifying the technical minimum requirements for FCR, FRR and RR will ensure transparency (as well as NRA oversight) for all stakeholders. It is also better for competition which, in turn, is better for end consumers.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	Clarification around the testing is a key aspect of the FCR, FRR and RR obligations from the perspective of stakeholders. Therefore setting the testing arrangements out in the Grid Code will be positive for stakeholders as it will ensure transparency (as well as NRA oversight) for all stakeholders. It is also better for competition which, in turn, is better for end consumers.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	We believe that an independent legal view of the four questions noted on page 17 of the Workgroup consultation report would assist stakeholders in responding, in due course, to the Code Administrator Consultation.
11	Do you have any views on pre-	Any assets will need to meet the technical minimum

	qualification without assets, as detailed in Section 7?	requirements for FCR, FRR or RR respectively as, for example, set out in the wording in Article 155 which refers to "a potential FCR provider". Similar wording appears in terms of FRR (Article 159) and RR (Article 162). Thus this also applies to prequalification without assets – as it will be necessary for any potential FCR provider (with, or without, assets) to demonstrate that it complies with the technical minimum requirements for FCR (or FRR / RR).
12	"What are your views on having either a separate pre-qualification process for each balancing service including the SOGL criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	It is a requirement of SOGL that a party applies to pre-qualify for each of the services; FCR, FRR or RR; as the technical minimum requirements are different for each (as witnessed by the obligations etc., detailed in Articles 154, 158 and 161 respectively). In our view compelling parties to prequalify for FCR, FRR or RR, as part of the connection conditions (be that the 'CCs' or 'ECCs') is incompatible with (i) the RfG, DCC or HVDC requirements and (ii) SOGL.

	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.	It is not clear to us why GC0114 legal text matters should be considered by the GC0104 legal text session? In the context of the draft legal text for GC0114, we note that the solution has still to be finalised, therefore we are not in a position to provide final comments on the legal text at this time. That having been said, the proposed wording in BC4.1 as regards the Connection Conditions and the European Connection Conditions is incompatible with EU law, for the reasons we note in our answer to question 12 above.

Grid Code Workgroup Consultation Response Proforma

GC0114 - System Operation Guidelines Prequalification Processes

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 **17 September 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 Joseph Henry at joseph.henry2@nationalgrid.com

Respondent:	*Greg Scott-Cook* *Greg.scott-cook@uniper.energy* *07964 123043*
Company Name:	*Uniper*
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?	Supportive of the Original proposal as it seeks to implement the requirements for SOGL within the existing processes as much as possible and hence minimises disruption for service providers
2	Do you support the proposed implementation approach?	We support the approach in as much as it seeks to have a minimal impact on existing process but we would want transparency on what services the SO are offering. Regarding self-certification, this needs to be robust enough to give confidence that the capability will be there to deliver the service at the required level.
3	Do you have any other comments?	Providers should only be pre-qualified for services they can provide. Actions may be taken by the SO to contract for services, or providers to offer services, based on pre-qualification status. Hence pre-qualification for services that cannot be provided has the potential to lead to inefficient outcomes in procuring services and must be avoided.
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 have any views on the Balancing Services mapping provided in Annex 4 and detailed in Section 8?	This seems fine

6	The workgroup wishes to better understand the implementation of SOGL Article 182.2, 182.3 and 182.4 in GB. In particular, the workgroup would be interested to hear DNO views on the GB implementation of these articles as detailed in Section 8?	N/A
7	The workgroup is interested to hear views on the draft Workgroup Alternative Code Modification presented in both Section 9 and Annex 2?	The key difference is around the specification of testing requirements in the Grid Code modification. Hence see answer to Q9 regarding testing.
8	The GC0114 Original proposed modification does not include the codification into the Grid Code of the FCR, FRR or RR products and the Workgroup would be interested in the views of other parties as to whether or not this would be beneficial to the market to have this codification.	It is important that providers are aware of the services available to the SO but to put this into the Grid Code may make it an onerous process to make changes.
9	The current GC0114 Original proposed modification does not include FCR, FRR or RR testing whereas the potential alterative modification the Workgroup would. The Workgroup is interested in the views of other parties as to whether or not it would be beneficial to set out in the Grid Code the testing requirements for FCR, FRR and RR.	The appropriate testing should be defined for each service but because the SOGL categories of FCR/FRR/RR cut across many services it is not possible to have a single test without diluting the effectiveness of the testing or excluding certain providers.
10	In light of the pre-qualification simplified wording in Section 8, do you have any comments on this?	No
11	Do you have any views on pre-qualification without assets, as detailed in Section 7?	If potential assets are allowed to pre-qualify then there must be incentives to ensure that the provider proves that they can deliver the service as soon as possible and before the delivery period commences.
12	“What are your views on having either a separate pre-qualification process for each balancing service including the SOGL	We support avoiding additional processes but when applying for a service the provider needs to be aware of what commitment they are taking on and the implications of making the application, e.g. whether

	criteria or an upfront pre-qualification process specifically for SOGL ahead of any specific balancing service prequalification process?"	they will become a mandatory service provider as a result, and given the option as to whether or not to sign up.
	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.	

Annex 4 Workgroup Alternative Grid Code Modification (WAGCM1)

Alternative request Proposal form

Grid Code

Modification potential alternative submitted to

What stage is this document at?

01	Proposed alternative
02	Formal Workgroup alternative

GC0114

Mod Title: As per original (Testing requirements for prequalification added)

Purpose of alternative Proposal:
As per the Original and harmonise testing requirements.

Date submitted to Code Administrator: July 2018

You are: A Workgroup member

Workgroup vote outcome: The Workgroup voted by majority that the WAGCM better facilitates the Grid Code objectives.

Any Questions?

Contact:
Emma Hart
Code Administrator

Emma.Hart@nationalgrid.com

07790370027

Alternative Proposer(s):
Alastair Frew
Company

alastair.frew@scottishpower.com

1 Contents

2 Alternative proposed solution for workgroup review

This alternative proposal will use the same changes as the original except it will add harmonised testing requirements into prequalification section for frequency services. Adding the harmonised testing will make it clearer to applicants of all the requirements they need to meet to provide frequency services and prevent applications being surprised that after having prequalified discovering that they are still ineligible and have to submit test results before being allow to provide the service. Currently the Testing Guidance documents for FFR and EFR state in their introductions that these tests are required for prequalification so it seems odd not to include tests within the prequalification new procedure.

This alternative will also add industry oversight to testing requirements and correct the current disparity between testing requirements for different parties and is similar to Grid Code modification A10 where guidance on testing was incorporated in to the Grid Code.

This proposal will add testing requirements as per the legal text given in section 8 of the original.

3 Difference between this proposal and Original

This Alternative proposal will use all the same changes as in the original GC0114 proposal except it adds harmonised testing requirements into the prequalification process.

4 Justification for alternative proposal against Grid Code objectives

The GC0114 modification is currently implementing the prequalification requirements for provision of frequency services as required by Commission Regulation (EU) 2017/1485 a Guideline on Electricity Transmission System Operation (SOGL). The Original Proposer's solution is limiting this to only items specifically listed in the SOGL, however it seems odd not to identify the testing required to provide this service in the prequalification process. This situation could potentially mean Users who have been told they have prequalified being told they cannot provide the service due to a lack of test results. This requirement are not considered to be onerous as testing is already required and it is anticipated that existing Users will just be submitting data they already have.

Whilst the prequalification applies to all frequency services FCR, FRR and RR, testing is only likely to be required for automated services associated with FCR and faster FRR services. Within GB Users providing Primary, Secondary, High and Rapid Response via Mandatory Service Agreements

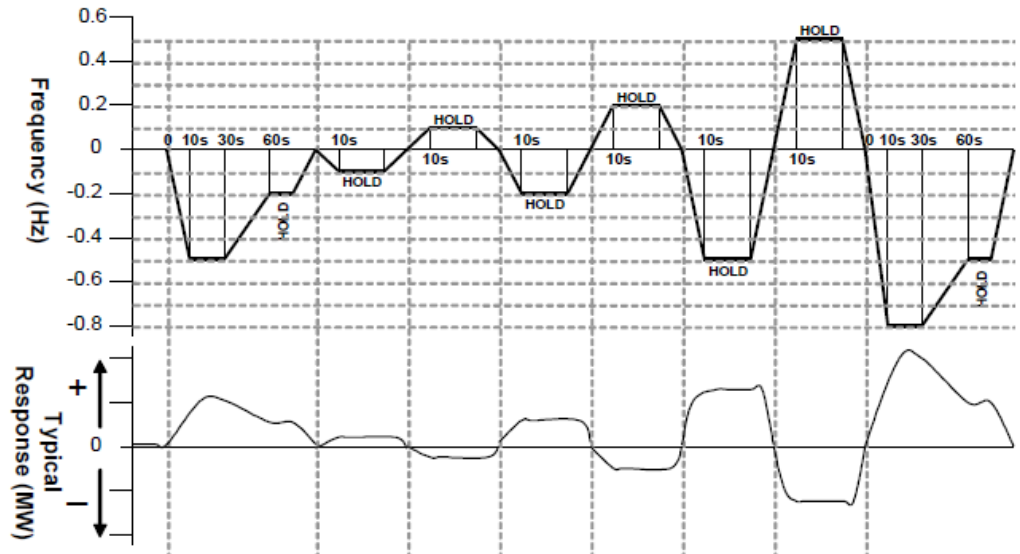
(MSA), Firm Frequency Response (FFR) and Enhanced Frequency Response (EFR) are the parties who are most likely to be affected.

Current Testing Requirements

The current testing requirements for provision of the different services are as follows:-

Mandatory Frequency Services Agreement (MSA)

MSA services require the output from reserve providing unit to vary continuously in response to system frequency changes. MSA service providers require to carry out all the volume tests detailed in one of the following Grid Code Sections ECP.A.5.8.7 (i); ECP.A.6.6.7 (i); OC5A.2.8.7 (i); OC5.A.4.5.7 (i); (note all 4 of these test schedules are identical) reference 1, as shown in figure 1 and complete a MSA response table.



Load Point	LF Event Profile 1	LF Ramp -0.1Hz	HF Ramp +0.1Hz	LF Ramp -0.2Hz	HF Ramp +0.2Hz	LF Ramp -0.5Hz	HF Ramp +0.5Hz	LF Event Profile 2
MLP6			1	2	3		4	
MLP5	5			6			7	
MLP4	8	9	10	11	12	13	14	
MLP3	15						16	17
MLP2	18			19	20	21		22
MLP1	23			24	25			26

Figure 1 – MSA volume test requirements (copy of ECP.A.5.8. Figure 1)

Firm Frequency Response Services (FFR)

There are two types of FFR service which can be provided. Firstly there are Dynamic Services where the reserve providing unit output varies continuously in response to system frequency changes, similar to MSA services. Secondly there are Static Services where the output changes by a

pre-set amount when triggered by the frequency going above 50.3 Hz or below 49.7Hz. FFR service providers require do the testing detailed in the guidance document Testing Guidance for Providers of Firm Frequency Response Balancing Service, reference 2, note this document states in its introduction these tests are required for “prequalification”.

FFR Dynamic Services Tests

Dynamic Services Tests providers are required to carry out the tests in Guidance document section 3 consisting of a set of step tests as shown in figure 2, ramp tests of consisting of 30 second and 90 seconds ramps with an example shown in figure 3 and a 30 minute duration test as shown figure 4.

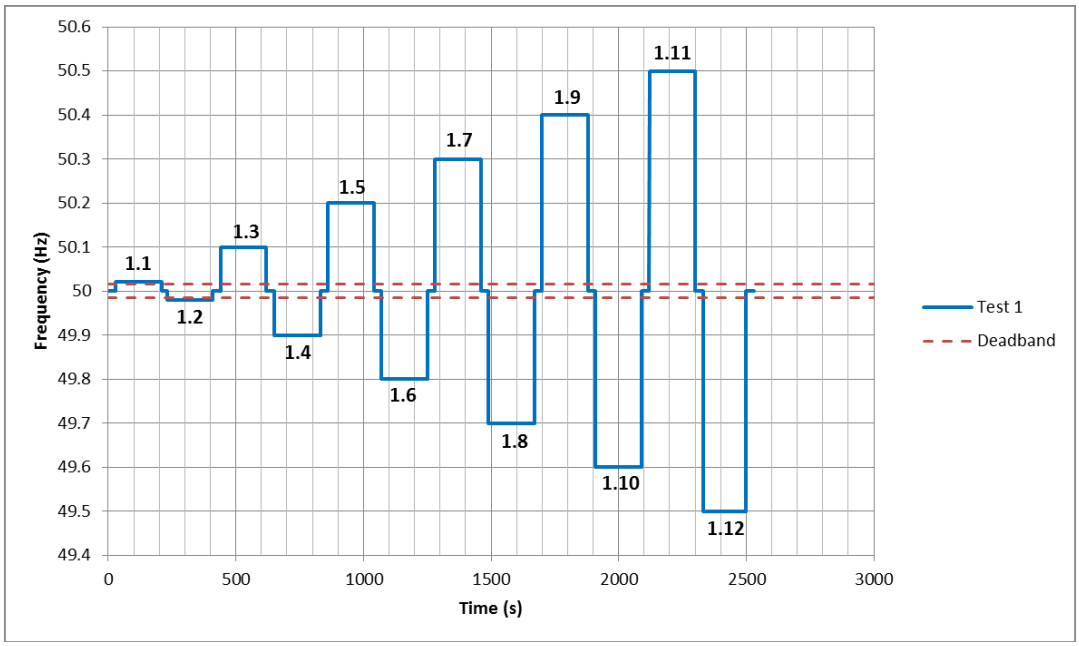


Figure 2 – Dynamic FFR step test requirements (copy FFR Guide Figure 3.1)

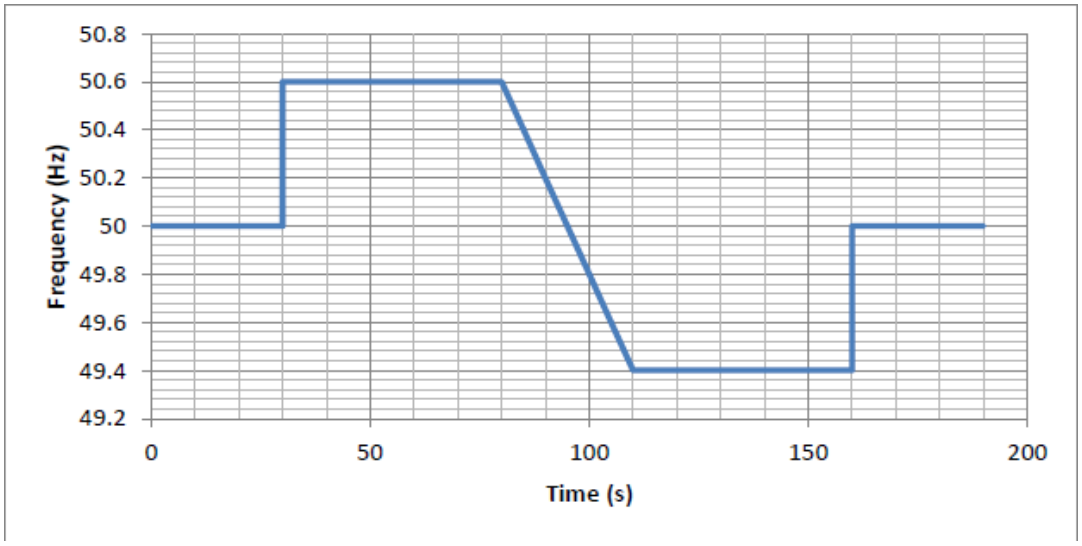


Figure 3 – Dynamic FFR ramp test requirements (copy FFR Guide Figure 2.1)

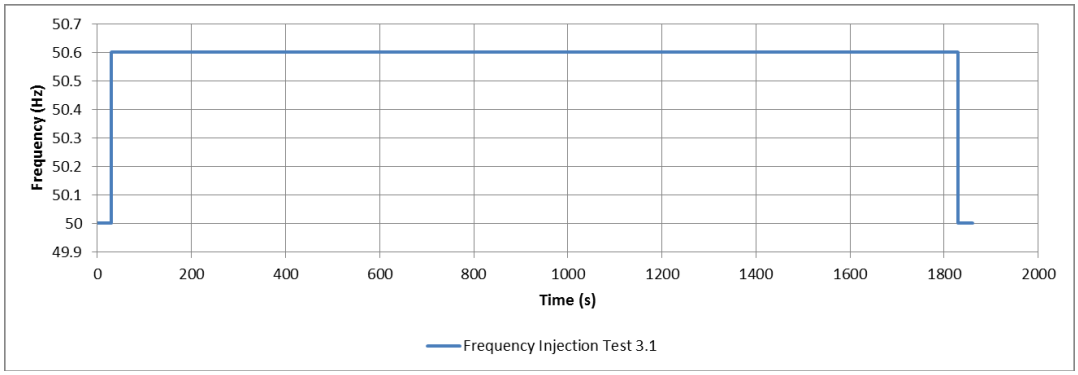
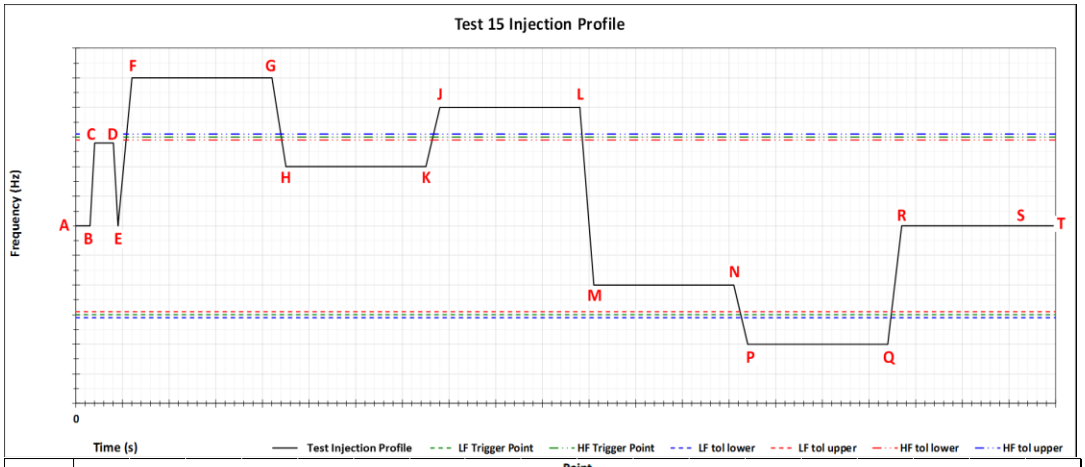


Figure 4 – Dynamic FFR duration test (copy FFR Guide Figure 3.12)

FFR Static Service Test

FFR Static service tests require as series of 30 second ramp tests an example of which is shown in figure 5. It would seem logical that the duration tests which are in the dynamic section would be included for the Static service but they do not seem to be.



Parameter	Point																	
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	D	T
Time (s)	0.0	30.0	40.0	80.0	90.0	120.0	420.0	450.0	750.0	780.0	1080.0	1110.0	1410.0	1440.0	1740.0	1770.0	2070.0	2100.0
Freq (Hz)	50.000	50.000	49.720	49.720	50.000	49.500	49.500	49.800	49.800	49.600	49.600	50.200	50.200	50.400	50.400	50.000	50.000	50.000

Figure 5 – Static FFR ramp test requirements (copy FFR Guide Figure 2.1)

Enhanced Frequency Response

EFR services require the output of reserve providing unit to vary continuously in response to system frequency changes, however there is a deadband around 50 Hz where they do not required to give any response and can operate freely. Currently there are 2 EFR services available different deadband widths of +/- 0.05Hz for the wide service and a deadband width of +/- 0.015Hz for the narrow service. The testing requirements are detailed in the document Testing Guidance for Providers of Enhanced Frequency Response Balancing Service, reference 3, note this document states in its introduction these tests are required for “prequalification”..

EFR Services Tests are required to carry out the tests in Guidance document section 2 consisting of a set of step tests with an example shown

in figure 6, ramp tests of consisting of 30 second ramps with an example shown if figure 7 and a 15 minute duration test as shown figure 8.

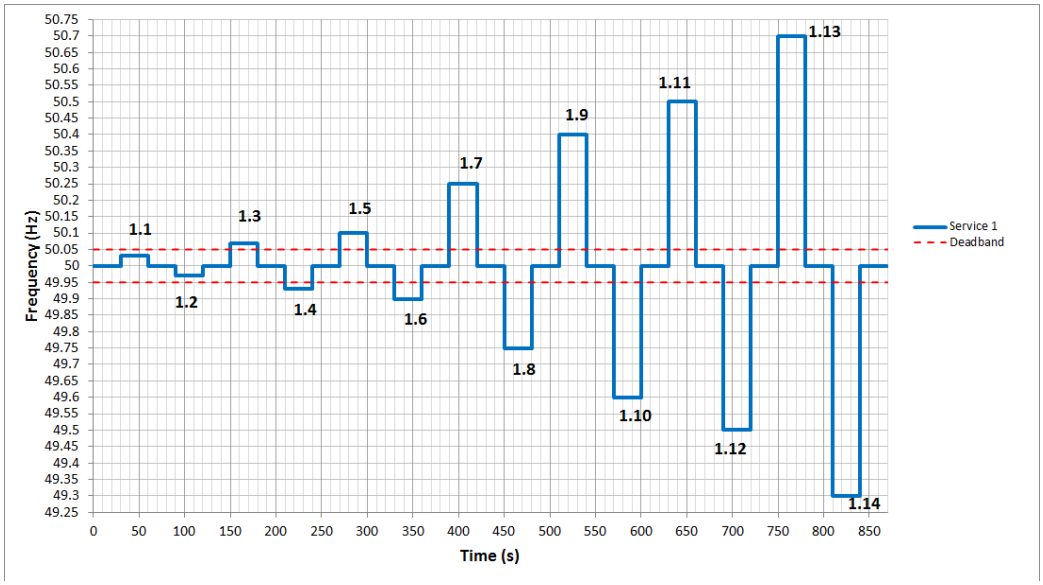


Figure 6 – EFR step test requirements (copy EFR Guide Figure 2.1)

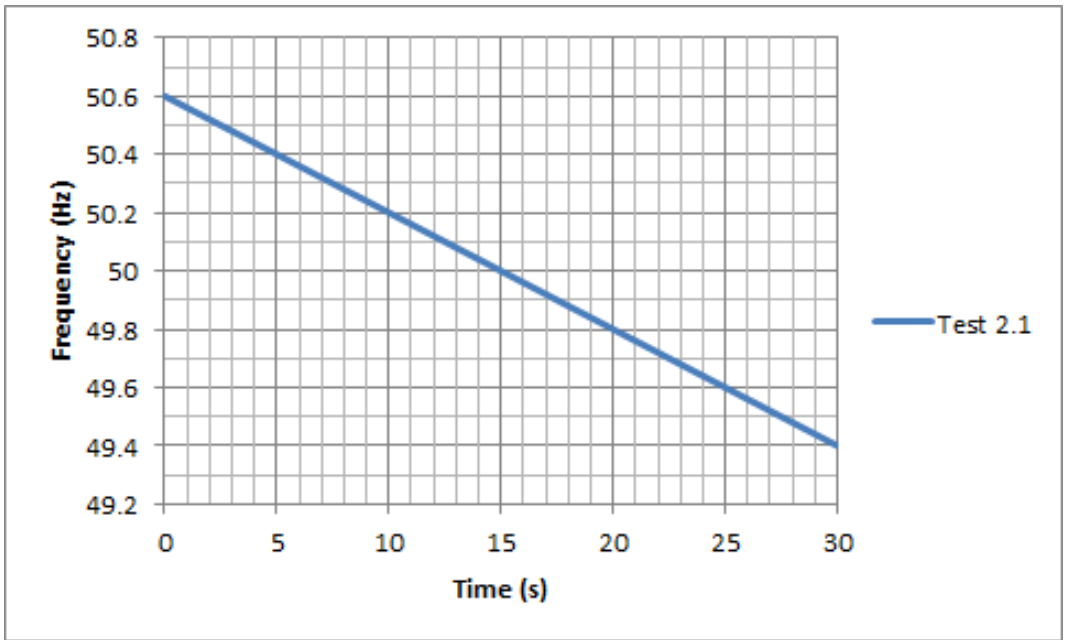


Figure 7 – EFR step test requirements (copy EFR Guide Figure 2.3)

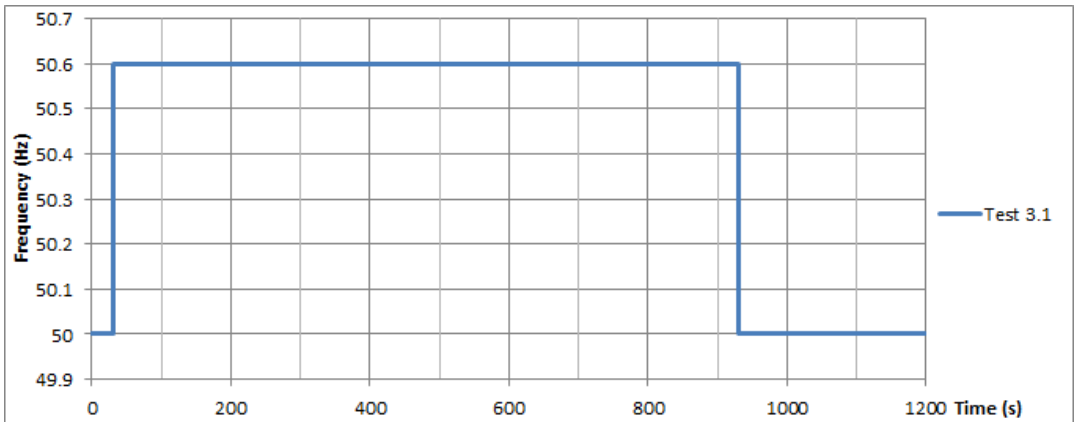


Figure 8 – EFR duration test requirements (copy EFR Guide Figure 2.5)

Tender Submissions

For all the frequency services the tender process requires submission of primary, secondary and high output responds against specified frequency changes, along with offer prices for providing these responses. The key point to all the tenders is that it is primary, secondary and high output responses are required.

Grid Code Testing for Primary, Secondary and High

The Grid code specifies testing requirements for primary, secondary and high in section ECC.A.3.4 Testing of Frequency Response Capability, reference 4, as follows:-

"The **Primary Response** capability (P) of a **Power Generating Module** or a **CCGT Module** or **Power Park Module** or **HVDC Equipment** is the minimum increase in **Active Power** output between 10 and 30 seconds after the start of the ramp injection as illustrated diagrammatically in Figure ECC.A.3.2. This increase in **Active Power** output should be released increasingly with time over the period 0 to 10 seconds from the time of the start of the **Frequency** fall as illustrated by the response from Figure ECC.A.3.2.

The **Secondary Response** capability (S) of a **Power Generating Module** or a **CCGT Module** or **Power Park Module** or **HVDC Equipment** is the minimum increase in **Active Power** output between 30 seconds and 30 minutes after the start of the ramp injection as illustrated diagrammatically in Figure ECC.A.3.2.

The **High Frequency Response** capability (H) of a **Power Generating Module** or a **CCGT Module** or **Power Park Module** or **HVDC Equipment** is the decrease in **Active Power** output provided 10 seconds after the start of the ramp injection and sustained thereafter as illustrated diagrammatically in Figure ECC.A.3.3. This reduction in **Active Power** output should be released increasingly with time over the period 0 to 10 seconds from the time of the start of the **Frequency** rise as illustrated by the response in Figure ECC.A.3.2."

Figure ECC.A.3.2 – Interpretation of Primary and Secondary Response Service Values

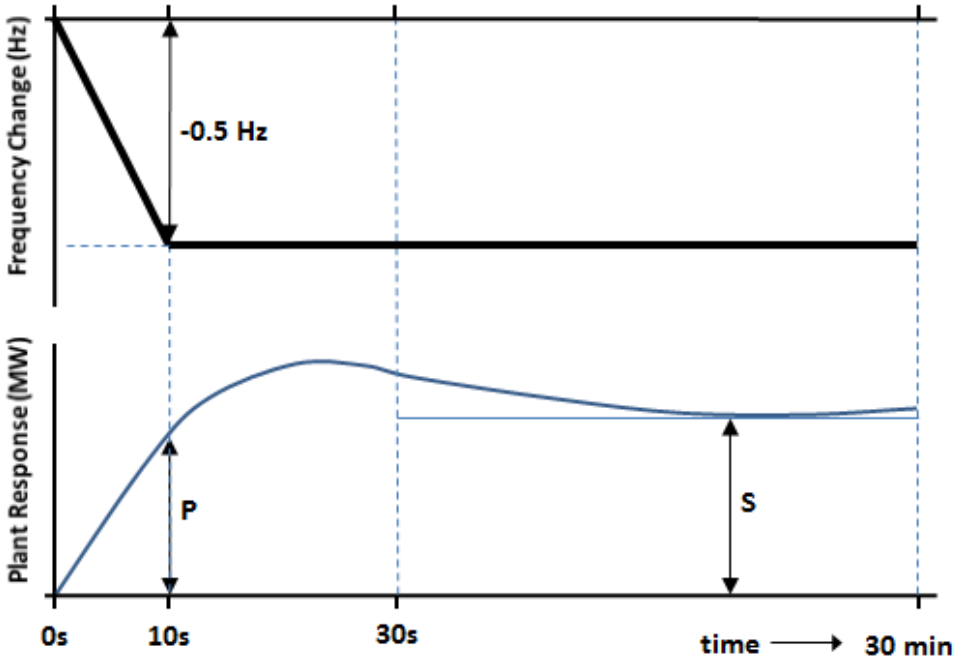


Figure ECC.A.3.3 – Interpretation of High Frequency Response Service Values

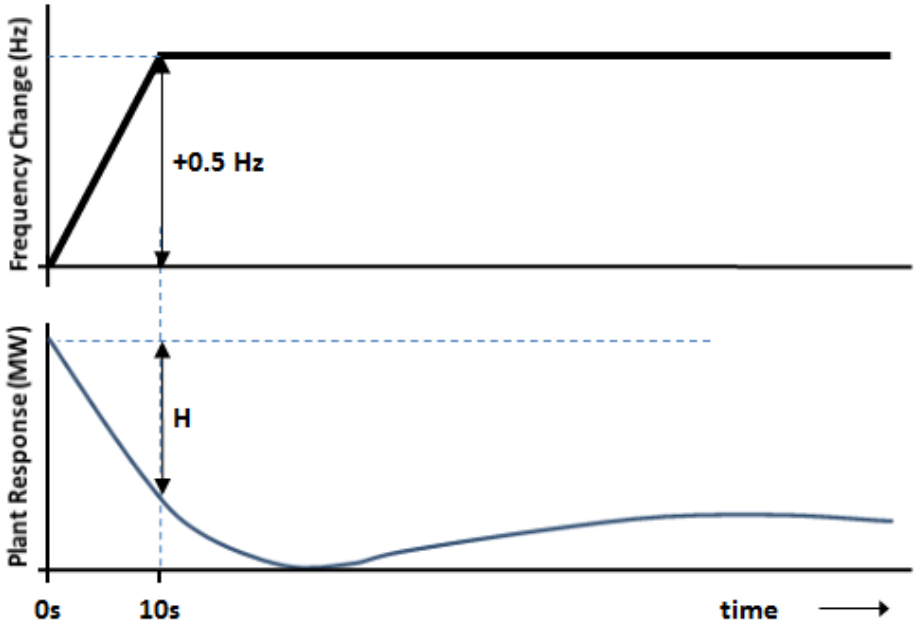


Figure 9 – Grid Code Primary, Secondary & High test requirements (copy Figure ECC.A.3.3 & ECC.A.3.4)

Given that all tender returns require primary, secondary and high response values it is surprising that only the MSA tests require these tests, with both the guidance documents for FFR and EFR using step tests and ramps of longer durations.

Comparison of Ramp against Step Tests

In order to demonstrate of the different responses of the following figure 10 shows the same generator on the same day being tested with a 0.5Hz frequency decrease over a 10 second ramp test 13 and a 0.5Hz step frequency decrease compliance test H. Similarly in figure 11 the same generator on the same day being tested with a 0.5Hz frequency increase over a 10 second ramp test 14 and a 0.5Hz step frequency increase compliance test I.

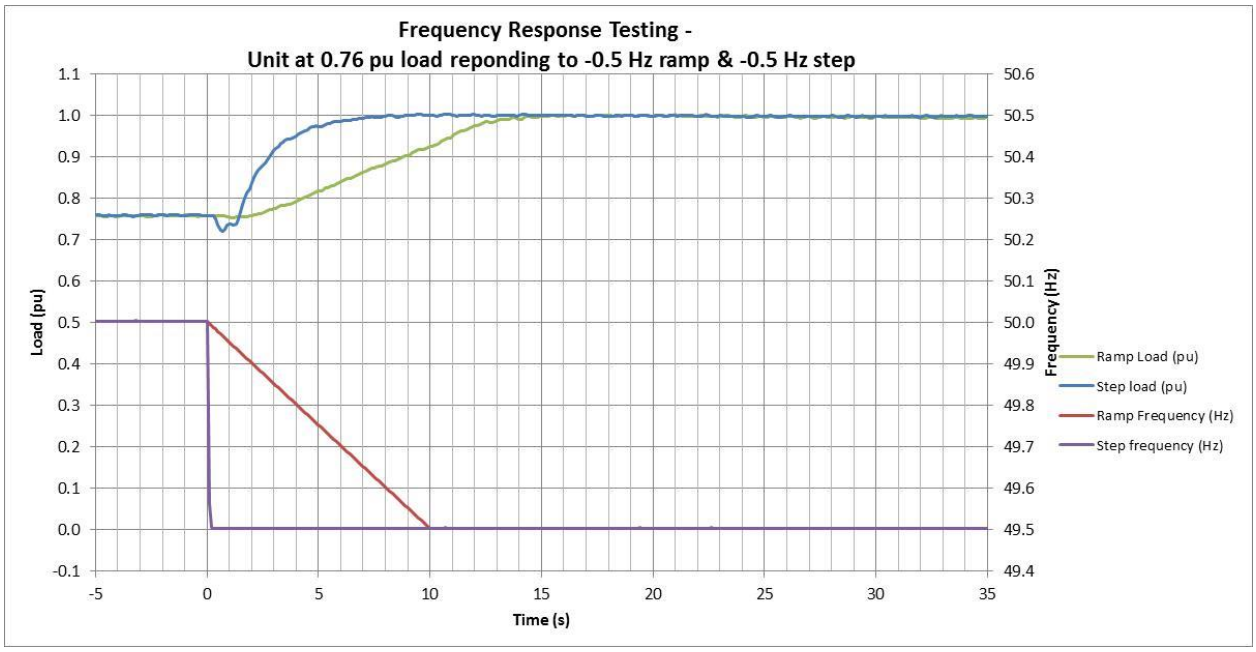


Figure 10 – Comparison of responses to a -0.5Hz step and ramp test

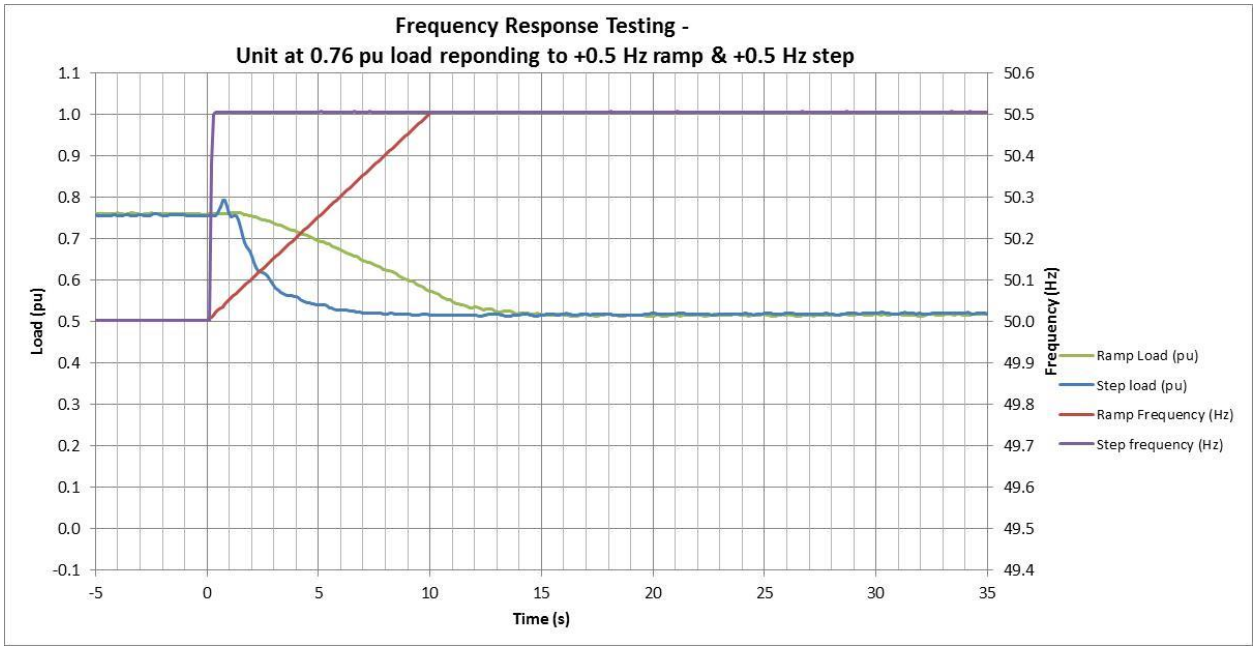


Figure 11 – Comparison of responses to a 0.5Hz step and ramp test

Reviewing the primary response in figure 10 based on a 10s ramp the response is 0.186 pu, whilst if the result is based on a step test the response is 0.241pu, hence a ramp test only gives 70% the response of a step response. Similarly the high response in figure 11 based on a 10s ramp the response is 0.191pu, whilst if the result is based on a step test the

response is 0.239pu, hence a ramp test only gives 80% the response of a step response. There is an even bigger difference if the calculation is carried out after 5 second which is one of the FFR faster options which shows a ramp test response would only be 26% of the step test response.

Harmonisation of testing requirements

Currently it is not clear what primary, secondary and high response values are being submitted by various parties, whilst some parties who understand the proper definitions may be submitting correct value, others may be following the guidance documents and submitting higher values. It can be argued that if everyone in each category uses the same tests the tenders will be assessed like for like, however the problem occurs when it comes to dispatching the services. NGET control room will be working from different service lists, at the end of the day all these lists are based on MW/£, hence there may not be equitable treat in the decision making process across services as some parties may have MW values only 70% that of others.

Given that currently it is not clear there is a harmonised approach to the tendering process it would appear sensible to include this in the prequalification process where it is clear to users and is covered by code governance. Codifying of tests was first introduced into the Grid Code in 2012 when modification A10 incorporated the existing Grid Code guidance document on testing into the Grid Code. In approving this modification OFGEM's decision letter dated 26 July 2012 on Grid Code Modification A/10: Generator Compliance includes the following statement

"We consider the codification of the Guidance Notes in the Grid Code will improve the understanding of those who wish to connect to, or are already connected to, the NETS, and manufacturers and suppliers of generation equipment, about the compliance testing requirements. There is greater transparency of the technical requirements by their inclusion in Grid Code and the opportunity to revise these requirements more effectively through the open governance arrangements if required. As a result, there should be a positive impact on NGET"s ability to develop, maintain and operate an efficient and economical transmission system."

Unfortunately new services have introduced with new testing requirements which have once again been incorporated into guidance documents which do not have clear industry governance and are not consistent with other existing testing requirements.

To ensure equal treatment it is proposed that parties who are offering frequency services over a loading range shall carry out all the ECP volume tests as per current Grid Code requirements. Parties only offering specific services at fixed loading levels shall carry out the ECP volume tests for MLP4 with the MLP4 set to the offered load or loads, this will allow direct comparison between service provisions. Additional tests will need to be introduced for triggered services to confirm no response is provided before the trigger point. Similarly if there is a duration test required this now needs to be added. Details of both these proposed new tests are given in the legal text section 6 with the new trigger test in the section ECP.A.5.8.10 and the new duration test in section ECP.A.5.8.11. The proposed trigger tests are very similar to the existing FFR trigger test consisting of steps A,B,C,D & E shown in figure 5 and EFR test 1.1 shown in figure 6. The proposed duration test is very similar to the FFR duration test shown in figure 4 and

EFR duration test shown in figure 8. Flexibly has been added to the new tests to allow them to be easily applied to new trigger levels and new duration lengths. These additional tests will also be added into OC5 or into ECP and CP.

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.

5 Impacts and Other Considerations

As per the Original.

Consumer Impacts

As per the Original.

6 Implementation

As per the Original.

7 Legal Text

As per the Original (blue text) with additional text for this alternative added in red:-

Proposed changes to the GLOSSARY & DEFINITIONS

Balancing Services	As defined in the **Transmission Licence.**
Demand Unit	An indivisible set of installations containing equipment which can be actively controlled at one or more sites by a **Demand Response Provider, Demand Facility Owner, CDSO** or by a **Non Embedded Customer**, either individually or commonly as part of **Demand Aggregation** through a third party who has agreed to provide **Demand Response Services.**
Demand Response Active Power	**Demand** within a **Demand Facility** or **Closed Distribution System** that is available for modulation by **The Company** or **Network Operator** or **Relevant Transmission Licensee**, which results in an **Active Power** modification;
Frequency Containment Reserves (FCR)	means, in the context of **Balancing Services,** the active power reserves available to contain system frequency after the occurrence of an imbalance.
Frequency Restoration Reserves (FRR)	means, in the context of **Balancing Services,** the active power reserves available to restore system frequency to the nominal frequency.
Replacement Reserves (RR)	means, in the context of **Balancing Services,** the active power reserves available to restore or support the required level of FRR to be prepared for additional system imbalances, including generation reserves;
Standard Product	means a harmonised balancing product defined by all EU TSOs for the exchange of balancing services.
Specific Product	Means, in the context of **Balancing Services**, a product that is not a standard product;

Proposed changes to Balancing Code 5 BC5 (new code section)

BC5.1 PREQUALIFICATION

The Company 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, **The Company** shall ensure that prequalification processes for that **Balancing Service** follows the processes as set out here.

The Company 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 may be understood to fulfil this formal application if so requested by the connecting party. For the avoidance of doubt, this does not compel a party to pre-qualify as part of their connection conditions.

BC5.1.1 Prequalification Timelines

BC5.1.1.1 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 **The Company** shall confirm the application is complete or incomplete (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 **The Company** or it will be presumed that the application has been withdrawn

(c) For units connected to distribution networks, **The Company** shall liaise with the relevant DNO(s) to identify potential limitations imposed on the proposed Balancing Services Provider by the distribution networks.

(d) Within 3 months of confirming that all information has been provided **The Company** shall confirm if the potential FCR, FRR or RR provider meets the requirements in BC5.2.1, BC5.3.1 or BC5.4.1 respectively.

BC5.1.1.2 **The Company** shall re-assess the qualification of FCR, FRR or RR providing units or groups:

at least once every 5 years;

in case the technical or availability requirements or the equipment have changed; and

in the case of FCR providing units or groups, in case of modernisation of the equipment related to FCR activation.

BC5.2 FCR PREQUALIFICATION PROCESS

The Company 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 BC5.2.1.

A transitional period for the introduction of FCR Minimum Technical Requirements, as defined in BC5.2.1 and BC5.2.2, shall apply for those FCR providers who are not an **EU Code User**.

BC5.2.1 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;

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.

be capable of activating FCR within the frequency ranges specified in the **ECC.6.1.2.1.2**.

and comply with the following properties

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

FCR full activation time of 10 s

FCR full activation frequency deviation of ± 500 mHz

specify the limitations of the energy reservoir of its FCR providing units or FCR.

Each FCR provider shall be capable of making available to **The Company**, for each of its FCR providing units and FCR providing groups, at least the following information:

time-stamped status indicating if FCR is on or off;

time-stamped active power data needed to verify FCR activation, including time-stamped instantaneous active power; and

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**.

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.

Each FCR provider shall inform **The Company**, 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.

Each FCR provider shall submit data to The Company in the form of either a Mandatory Service Agreement (MSA) table or a Commercial Service Agreement (CSA) table with test result evidence for the type of service being offered as follows:-

i) where the service being offered permits The Company to select the target delivery load point within a loading range band, the data submission shall be based on the full volume tests specified in any of the following sections ECP.A.5.8.7 (i); ECP.A.6.6.7 (i); OC5A.2.8.7 (i); or OC5.A.4.5.7 (i)

ii) where the service being offered only permits The Company to select target delivery load points at pre-set fixed loading point(s), the data submitted shall be based on the volume tests as specified in any of the following sections ECP.A.5.8.7 (i); ECP.A.6.6.7 (i); OC5A.2.8.7 (i); or OC5.A.4.5.7 (i), limited only to the tests for Module Load Point 4 (MLP4) set at the pre-set fixed loading point(s)

iii) where the service offered is activated by a trigger the data submitted shall be based on the volume test data as per item (ii) and trigger activation test specified in any of the following sections ECP.A.5.8.10; ECP.A.6.6.10; OC5A.2.8.10; or OC5.A.4.5.10

iv) where the service being offered has a minimum duration specified by The Company the data submitted shall additionally be based on the duration tests as specified in any of the following sections ECP.A.5.8.11; ECP.A.6.6.11; OC5A.2.8.11; or OC5.A.4.5.11.

BC5.2.2 In addition to the requirements in BC5.2.1, where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **The Company** shall ensure that the prequalification process requires the following to be specified;

voltage levels and connection points of the reserve providing units or groups;

the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected;

the type of active power reserves;

the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

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

The relevant DNOs will identify potential distribution network restrictions, based on technical reasons, on the provision of the proposed Balancing Service by the reserve providing groups or units.

BC 5.3 FRR PREQUALIFICATION PROCESS

The Company 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 BC5.3.1 and BC5.3.2.

BC5.3.1 FRR Minimum Technical Requirements

Each FRR providing unit and each FRR providing group shall;

activate FRR in accordance with the setpoint received from **The Company**;

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 **The Company** real-time measurements of the connection point or another point of interaction agreed with **The Company** concerning:

time-stamped scheduled active power output;

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;

a FRR providing unit or FRR providing group for automatic FRR shall have an automatic FRR activation delay not exceeding 30 seconds;

be capable of activating its complete manual reserve capacity on FRR within the FRR full activation time;

fulfil the FRR availability requirements;

fulfil the ramping rate requirements;

inform **The Company** 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.

Each FRR provider offering an automated response with a delivery time of less than 1 minute shall submit data to The Company in the form of either a Mandatory Service Agreement (MSA) table or a Commercial Service Agreement (CSA) table with test result evidence for the type of service being offered as follows:-

i) where the service being offered permits The Company to select the target delivery load point within a loading range band, the data submission shall be based on the full volume tests specified in any of the following sections ECP.A.5.8.7 (i); ECP.A.6.6.7 (i); OC5A.2.8.7 (i); or OC5.A.4.5.7 (i)

ii) where the service being offered only permits The Company to select target delivery load points at pre-set fixed loading point(s), the data submitted shall be based on the volume tests as specified in any of the following sections ECP.A.5.8.7 (i); ECP.A.6.6.7 (i); OC5A.2.8.7 (i); or OC5.A.4.5.7 (i), limited only to the tests for Module Load Point 4 (MLP4) set at the pre-set fixed loading point(s)

iii) where the service offered is activated by a trigger the data submitted shall be based on the volume test data as per item (ii) and trigger activation test specified in any of the following sections ECP.A.5.8.10; ECP.A.6.6.10; OC5A.2.8.10; or OC5.A.4.5.10

iv) where the service being offered has a minimum duration specified by The Company the data submitted shall additionally be based on the duration tests as specified in any of the following sections ECP.A.5.8.11; ECP.A.6.6.11; OC5A.2.8.11; or OC5.A.4.5.11.

BC5.3.2 In addition to the requirements in BC5.3.1, where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **The Company** shall ensure that the prequalification process requires the following to be specified;

voltage levels and connection points of the reserve providing units or groups;

the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected;

the type of active power reserves;

the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

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

The relevant DNOs will identify potential distribution network restrictions, based on technical reasons, on the provision of the proposed Balancing Service by the reserve providing groups or units.

BC5.4 RR PREQUALIFICATION PROCESS

The Company 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 BC5.4.1 and BC5.4.2.

BC5.4.1 RR Minimum Technical Requirements

Each RR providing unit and each RR providing group shall;

a) activate RR in accordance with the setpoint received from **The Company**;

b) ensure activation of complete reserve capacity on RR within the activation time defined by **The Company**;

c) ensure de-activation of RR according to the setpoint received from **The Company**;

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 **The Company** real-time measurements of the connection point or another point of interaction agreed with **The Company**:

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;

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 **The Company** 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.

BC5.4.2 In addition to the requirements in BC5.4.1, where a relevant **Balancing Service** is provided by a reserve providing groups or units located in the distribution systems, **The Company** shall ensure that the prequalification process requires the following to be specified;

voltage levels and connection points of the reserve providing units or groups;

the DNO(s) who operate the distribution systems to which the reserve providing units or groups are connected;

the type of active power reserves;

the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and

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

The relevant DNOs will identify potential distribution network restrictions on the provision of the proposed Balancing Service by the reserve providing groups or units.

Proposed changes to Balancing Code 4 BC4 TERRE

BC4.4 REQUIREMENTS FOR BM PARTICIPANTS WHO WISH TO PARTICIPATE IN TERRE

The Company 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 BC4.4.1 and BC4.4.2.

BC4.4.1 All BM Participants who wish to participate in TERRE must have successfully completed the prequalification process to be an RR provider as detailed in BC5

BC4.4.2 All BM Participants who wish to participate in TERRE must have the following capabilities

(a) **BM Participants** must have the ability to submit data and receive instructions by the use of electronic data communication facilities as provided for in CC.6.5.8

(b) **BM Participants** must be capable of following an **RR Instruction** issued by **The Company**

(c) **BM Participants** must be able to provide **Physical Notifications**

(d) **BM Participants** must be able to provide a subset of **Dynamic Parameters** (as detailed in BC4.5.2)

(e) **BM Participants** must provide operational metering for their total output and for any individual component that may have an output greater than 1MW. This metering must have the following accuracy;

a. For a **BM Unit** with either **Generation Capacity** greater than 100MW or **Demand Capacity** greater than 100MW metering accuracy better than 0.5%

b. For a **BM Unit** with a **Generation Capacity** greater than 10MW but less than or equal to 100MW or **Demand Capacity** greater than 10MW but less than or equal to 100MW metering accuracy better than 1%

c. For all other **BM Units** an accuracy better than 2.5% is required

(f) **BM Participants** must have the ability to inform **The Company** if their availability changes using **Export and Import Limits**

(g) For **BM Participants** connected within a **User System BM Participants** must be capable of informing **Network Operators** of their availability and activation in real-time if required

Proposed changes to European Connection Conditions ECC

ECP.A.5.6.10 Triggered Services Test

This test shall only be required if the User is wishing to offer The Company a service which will only be activated by a frequency trigger. The test shall confirm that the service is not triggered before the trigger threshold has been reached by injecting a frequency signal as per figure ECP.A.5.6.10.1 or ECP.A.5.6.10.2. The hold frequency Y shall be either 0.02Hz above or below the trigger frequency as appropriate.

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

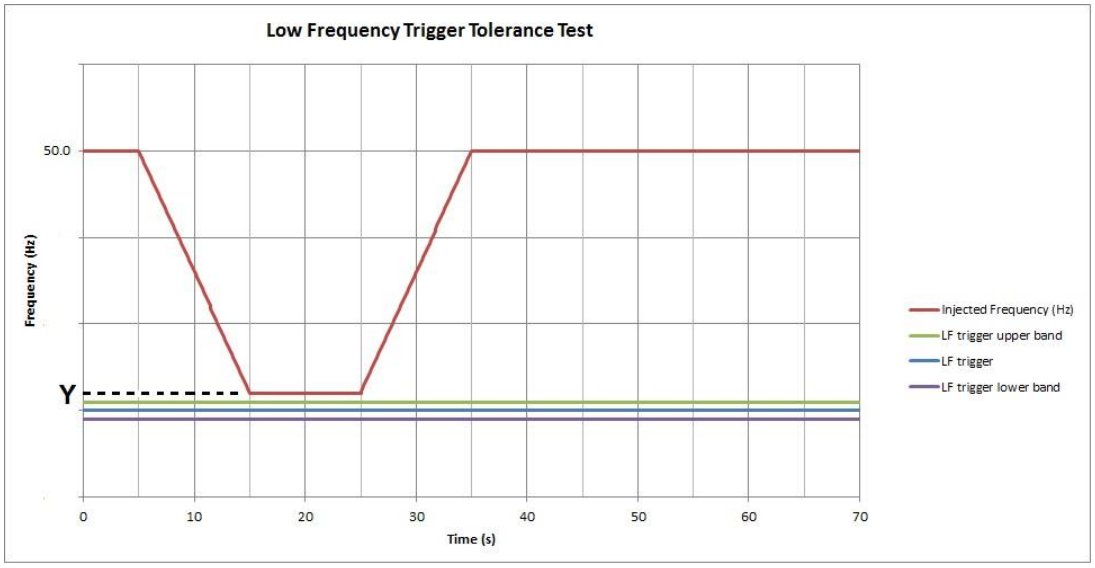


Figure ECP.A.5.6.10.1 - Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

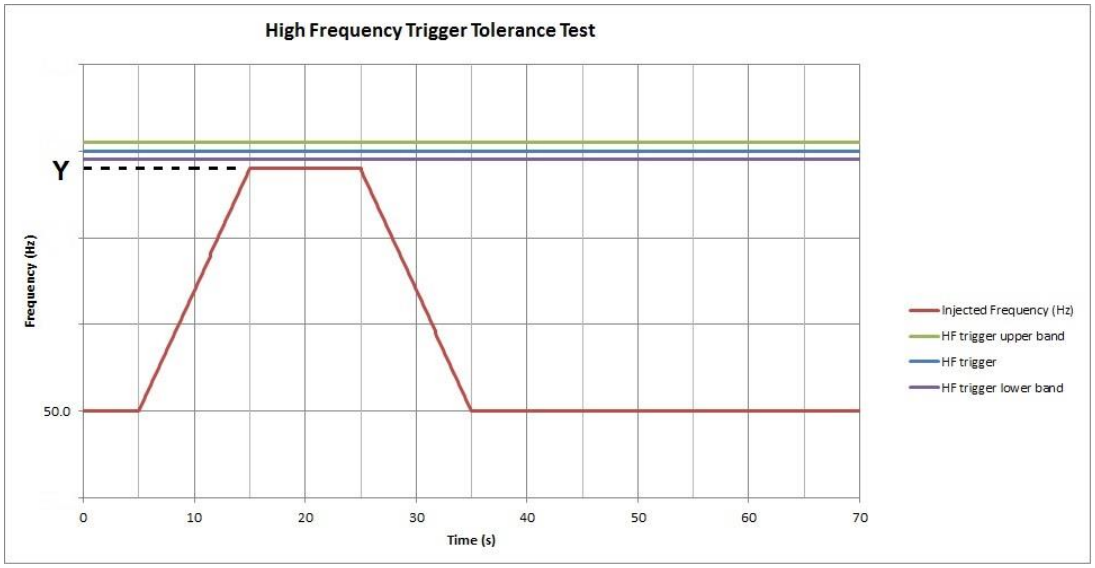


Figure ECP.A.5.6.10.2 - Test profile for an over frequency duration test

ECP.A.5.6.11 Duration Test

This test shall only be required if the User is wishing to offer The Company a frequency service which The Company has specified that a minimum delivery duration is required. The test shall confirm the service can be delivered for the specified contract period the frequency shall be ramped either up to 50.6Hz or down to 49.4Hz as appropriate as per ECP.A.5.6.11.1 and ECP.A.5.6.11.2 and held there for the length of the specified contract period (X), before being ramped back to 50Hz.

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	50.6	50.6	50	50

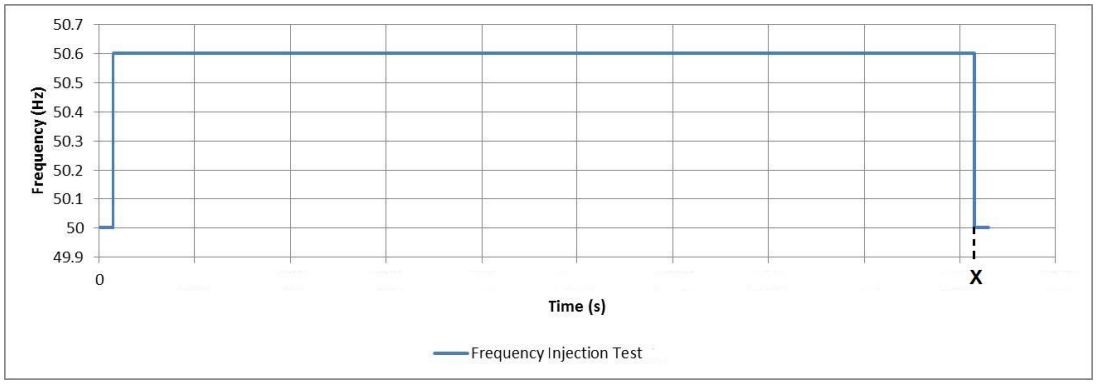


Figure ECP.A.5.6.11.1- Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	49.4	49.4	50	50

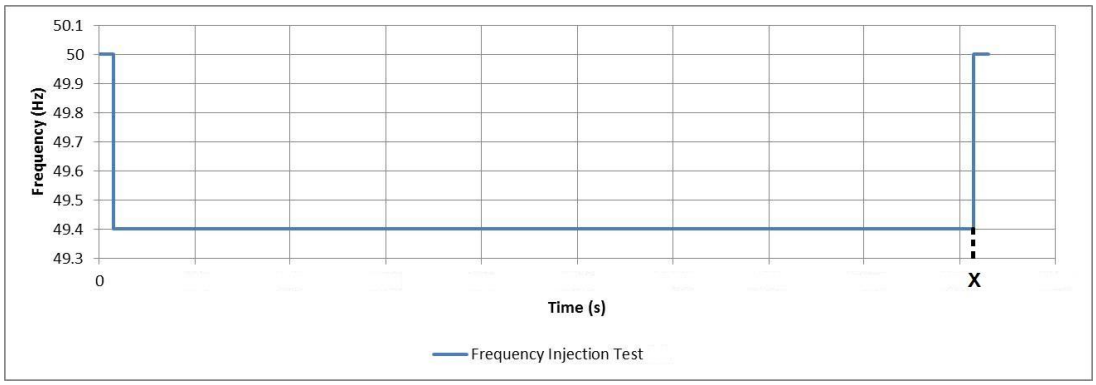


Figure ECP.A.5.6.11.2 - Test profile for an under frequency duration test

ECP.A.5.8.10 Triggered Services Test

This test shall only be required if the User is wishing to offer The Company a service which will only be activated by a frequency trigger. The test shall confirm that the service is not triggered before the trigger threshold has been reached by injecting a frequency signal as per figure ECP.A.5.8.10.1 or ECP.A.5.8.10.2. The hold frequency Y shall be either 0.02Hz above or below the trigger frequency as appropriate.

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

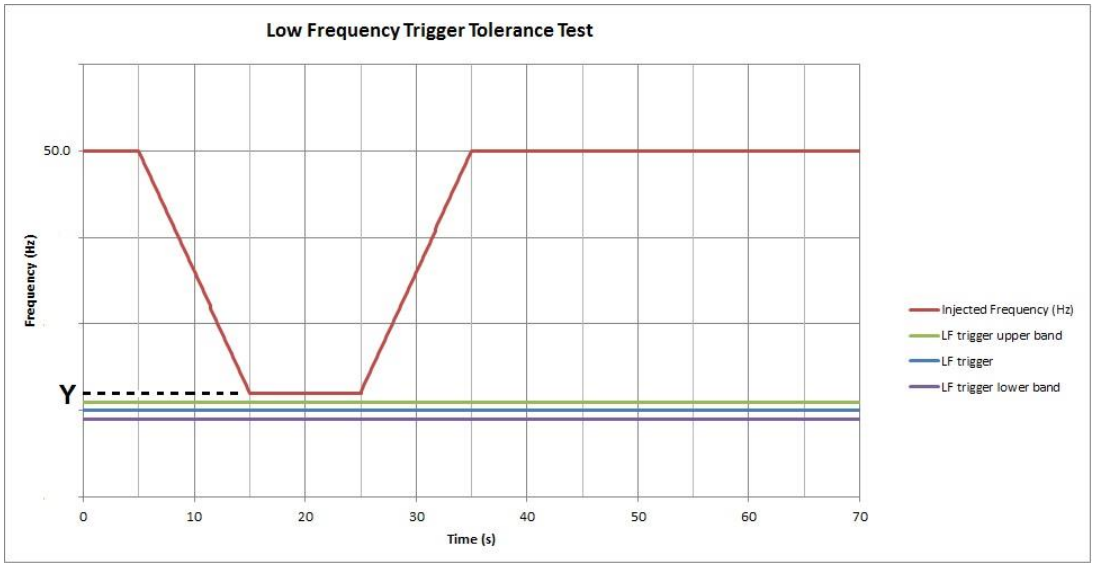


Figure ECP.A.5.8.10.1 - Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

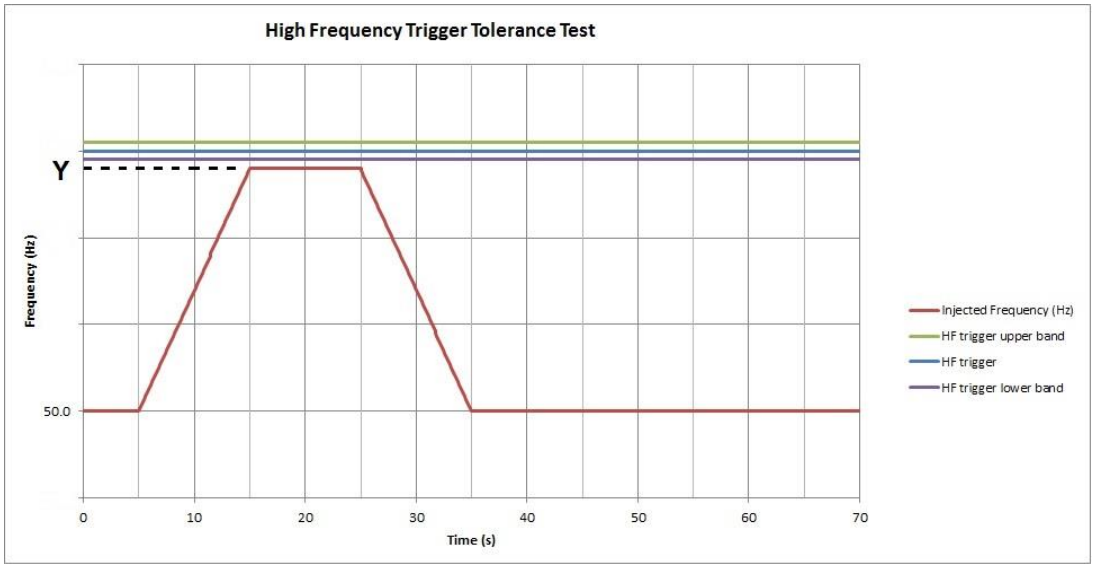


Figure ECP.A.5.8.10.2 - Test profile for an over frequency duration test

ECP.A.5.8.11 Duration Test

This test shall only be required if the User is wishing to offer The Company a frequency service which The Company has specified that a minimum delivery duration is required. The test shall confirm the service can be delivered for the specified contract period the frequency shall be ramped either up to 50.6Hz or down to 49.4Hz as appropriate as per ECP.A.5.8.11.1 and ECP.A.5.8.11.2 and held there for the length of the specified contract period (X), before being ramped back to 50Hz.

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	50.6	50.6	50	50

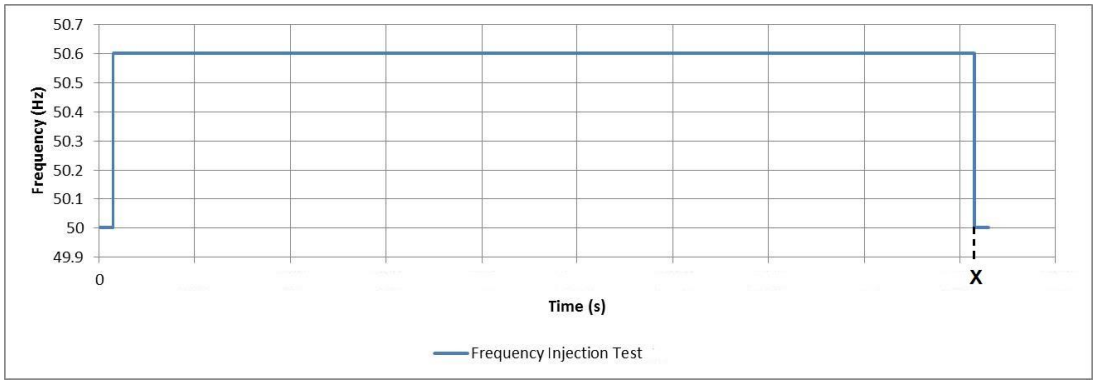


Figure ECP.A.5.8.11.1- Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	49.4	49.4	50	50

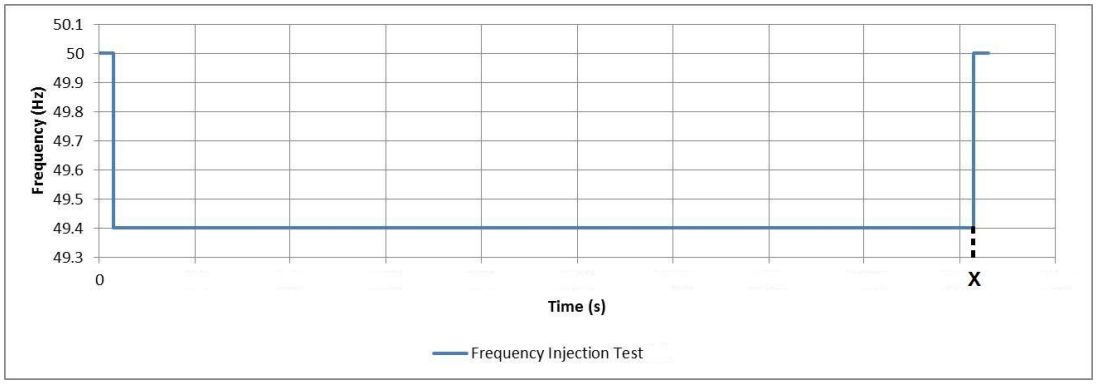


Figure ECP.A.5.8.11.2 - Test profile for an under frequency duration test

Proposed changes to Operating Code 5 OC5

OC5.A.2.8.10 Triggered Services Test

This test shall only be required if the User is wishing to offer The Company a service which will only be activated by a frequency trigger. The test shall confirm that the service is not triggered before the trigger threshold has been reached by injecting a frequency signal as per figure OC5.A.2.8.10.1 or OC5.A.2.8.10.2. The hold frequency Y shall be either 0.02Hz above or below the trigger frequency as appropriate.

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

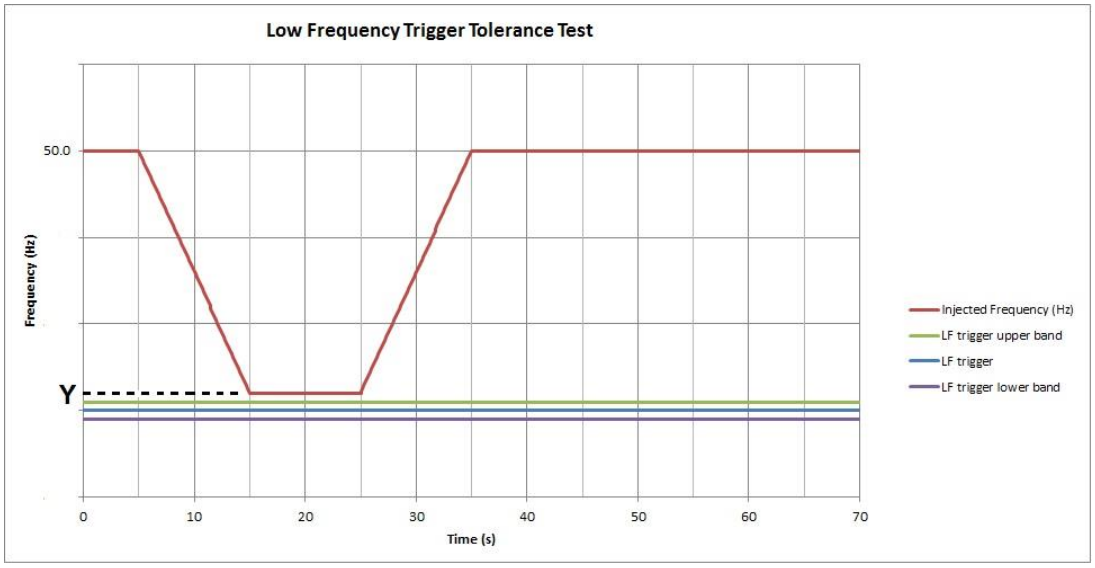


Figure OC5.A.2.8.10.1 - Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

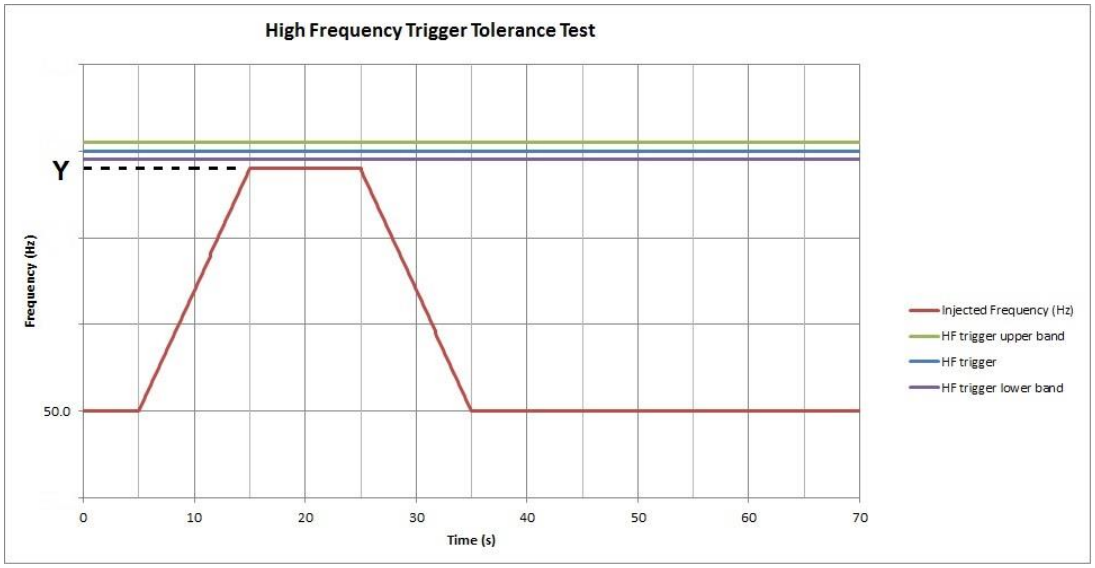


Figure OC5.A.2.8.10.2 - Test profile for an over frequency duration test

OC5.A.2.8.11 Duration Test

This test shall only be required if the User is wishing to offer The Company a frequency service which The Company has specified that a minimum delivery duration is required. The test shall confirm the service can be delivered for the specified contract period the frequency shall be ramped either up to 50.6Hz or down to 49.4Hz as appropriate as per OC5.A.2.8.11.1 and OC5.A.2.8.11.2 and held there for the length of the specified contract period (X), before being ramped back to 50Hz.

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	50.6	50.6	50	50

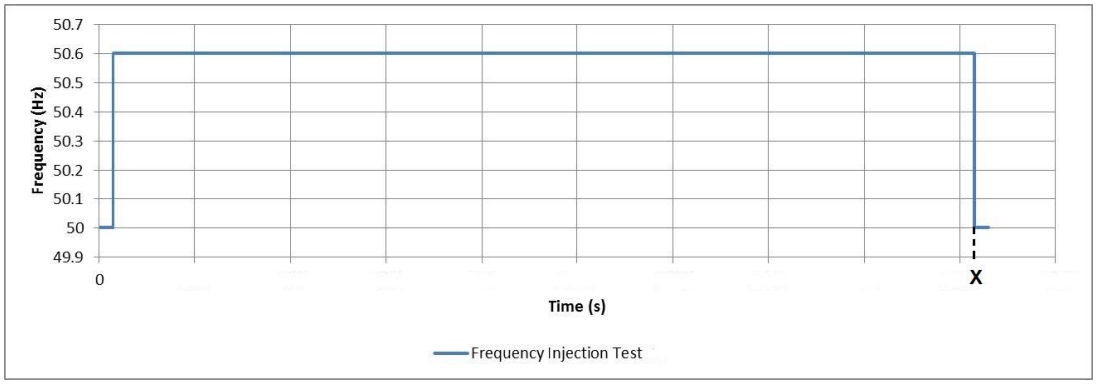


Figure OC5.A.2.8.11.1- Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	49.4	49.4	50	50

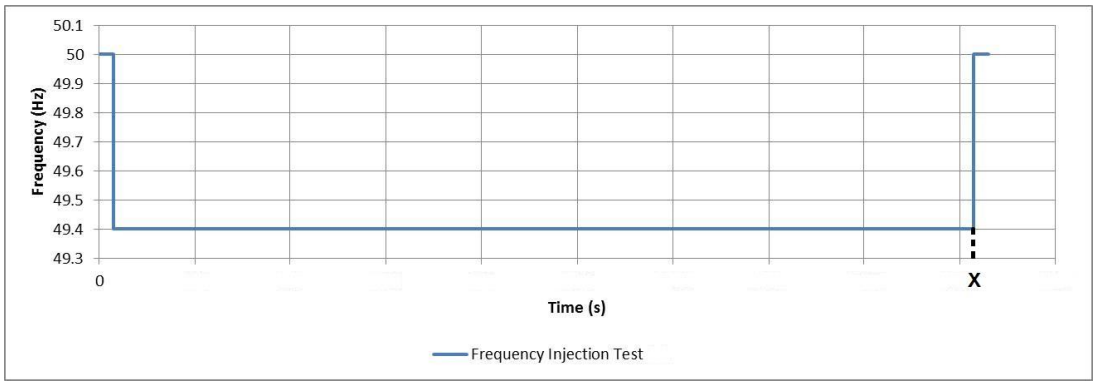


Figure OC5.A.2.8.11.2 - Test profile for an under frequency duration test

OC5.A.4.5.10 Triggered Services Test

This test shall only be required if the User is wishing to offer The Company a service which will only be activated by a frequency trigger. The test shall confirm that the service is not triggered before the trigger threshold has been reached by injecting a frequency signal as per figure OC5.A.4.5.10.1 or OC5.A.4.5.10.2. The hold frequency Y shall be either 0.02Hz above or below the trigger frequency as appropriate.

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

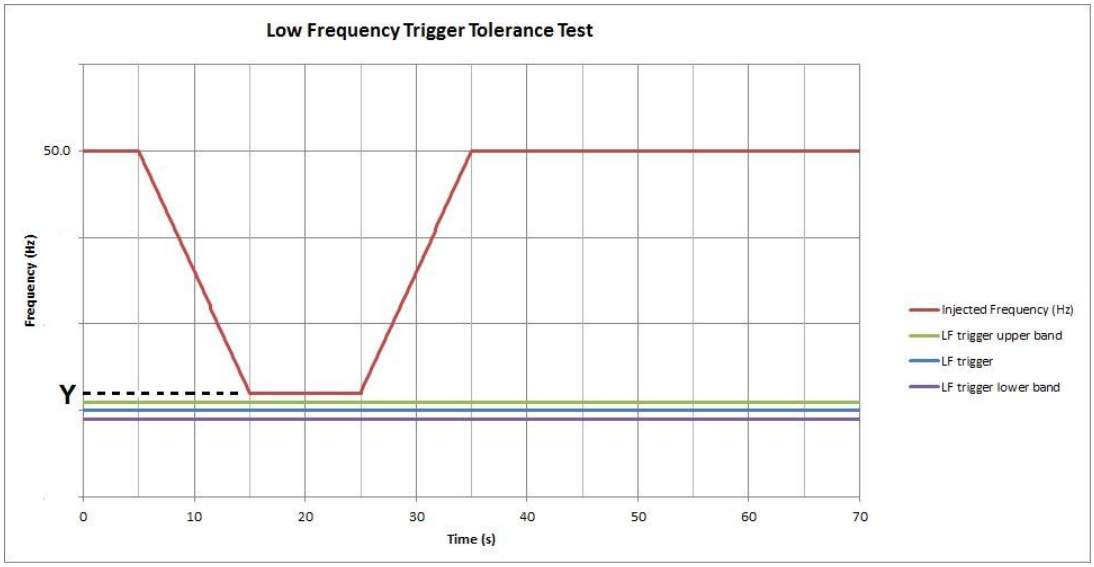


Figure OC5.A.4.5.10.1 - Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	5	15	25	35	70
Frequency (Hz)	50	50	Y	Y	50	50

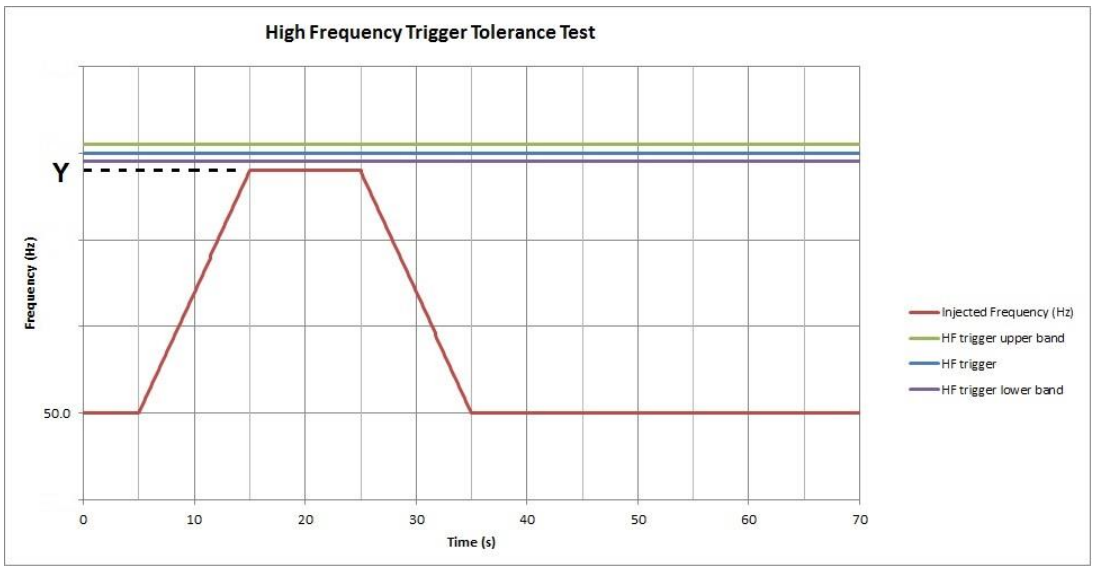


Figure OC5.A.4.5.10.2 - Test profile for an over frequency duration test

OC5.A.4.5.11 Duration Test

This test shall only be required if the User is wishing to offer The Company a frequency service which The Company has specified that a minimum delivery duration is required. The test shall confirm the service can be delivered for the specified contract period the frequency shall be ramped either up to 50.6Hz or down to 49.4Hz as appropriate as per OC5.A.4.5.11.1 and OC5.A.4.5.11.2 and held there for the length of the specified contract period (X), before being ramped back to 50Hz.

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	50.6	50.6	50	50

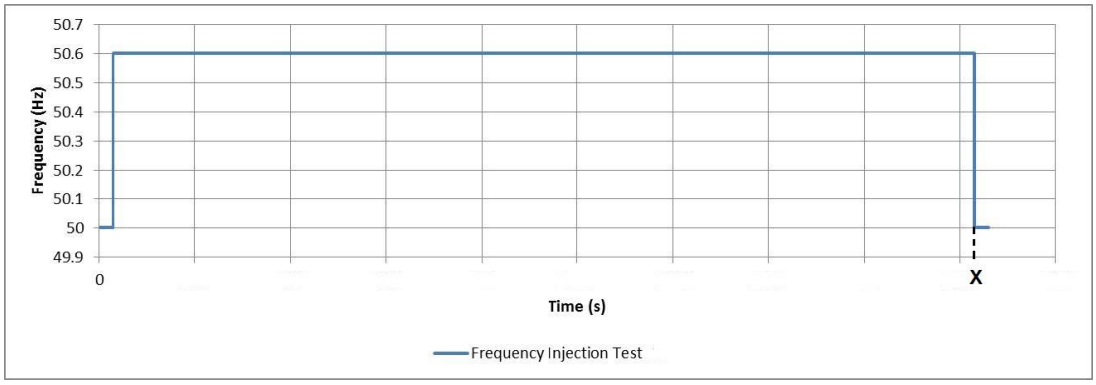


Figure OC5.A.4.5.11.1- Test profile for an over frequency duration test

	Frequency injection table					
Time (s)	0	30	40	40 + X	50 + X	80 + X
Frequency (Hz)	50	50	49.4	49.4	50	50

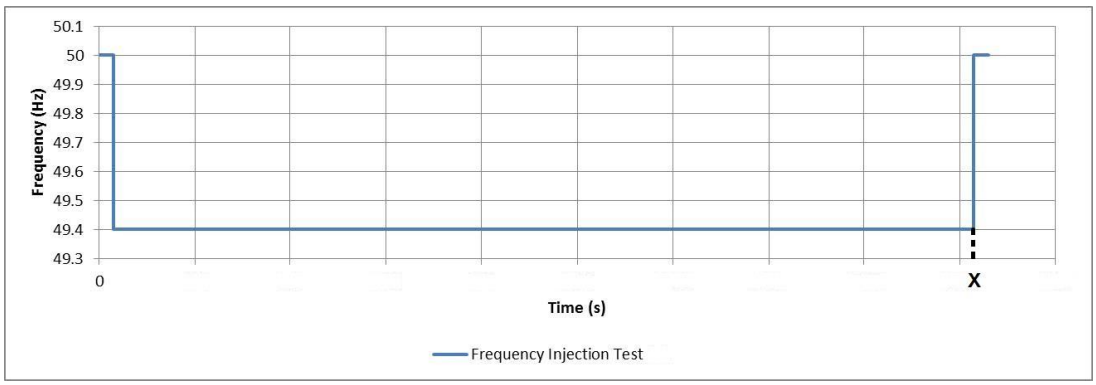


Figure OC5.A.4.5.11.2 - Test profile for an under frequency duration test

8 References

Reference 1:- Grid Code European Compliance Processes ECP can found at
https://www.nationalgrideso.com/sites/eso/files/documents/08_EUROPEAN_COMPLIANCE_%20PROCESSES_I5R25.pdf

Reference 2:- Testing Guidance for Providers of Firm Frequency Response Balancing Service can found at
https://www.nationalgrid.com/sites/default/files/documents/FFR%20Testing%20Guidance%20verD11%20Final_0.pdf

Reference 3:- Testing Guidance for Providers of Firm Enhanced Frequency Response Balancing Service can found at
https://www.nationalgrid.com/sites/default/files/documents/EFR%20Testing%20Guidance%20VD3%20%28Final%29.pdf

Reference 4:- Grid Code European Connection Conditions ECC can found at
https://www.nationalgrideso.com/sites/eso/files/documents/06_EUROPEAN_CONNECTION_CONDITIONS_I5R27.pdf

Annex 5 SOGL Code Mapping

Title	Chapter	Section	Article	Paragraph	Article Text		Grid Code
1	0	0	3	0	Article 3 - Definitions		
1	0	0	3	1	For the purposes of this Regulation, the definitions in Article 2 of Regulation (EC) No 714/2009, Article 2 of Commission Regulation No (EU) No 2015/12226, Article 2 of Commission Regulation No (EU) 2016/631, Article 2 of Commission Regulation No (EU) 2016/1388, Article 2 of Commission Regulation No (EU) 2016/1447, Article 2 of Commission Regulation No [000/2015 FCA], Article 2 of Regulation (EU) No 543/20137 on submission and publication of data in electricity markets and Article 2 of Directive 2009/72/EC8 shall apply.		
1	0	0	3	1	In addition, the following definitions shall apply:		
1	0	0	3	6	6. 'frequency containment reserves or 'FCR' means the balancing reserves available to contain system frequency after the occurrence of an imbalance;		GC01
1	0	0	3	7	7. 'frequency restoration reserve or 'FRR' means the balancing reserves available to restore system frequency to the nominal frequency and for a synchronous area consisting of more than one LFC area power balance to the scheduled value;		GC01
1	0	0	3	8	8. 'replacement reserves' or 'RR' 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;		GC01
1	0	0	3	9	9. '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;		
1	0	0	3	10	10. 'reserve providing unit' means a single or an aggregation of power generating modules and/or demand units connected to a common connection point fulfilling the requirements to provide FCR, FRR or RR;		
1	0	0	3	11	11. 'reserve providing group' means an aggregation of power generating modules, demand unit and/or reserve providing units connected to more than one connection point fulfilling the requirements to provide FCR, FRR or RR;		
1	0	0	3	58	58. 'reference incident' means the maximum positive or negative power deviation occurring instantaneously between generation and demand in a synchronous area, considered in the FCR dimensioning;		
1	0	0	3	95	95. 'reserve capacity' means the amount of FCR, FRR or RR that needs to be available to the TSO;		
1	0	0	3	96	96. 'exchange of reserves' means the possibility of a TSO to access reserve capacity connected to another LFC area, LFC block, or synchronous area to comply with the amount of required reserves resulting from its own reserve dimensioning process of either FCR, FRR or RR and where that reserve capacity is exclusively for that TSO, and is not taken into account by any other TSO to comply with the amount of required reserves resulting from their respective reserve dimensioning processes;		
1	0	0	3	97	97. 'sharing of reserves' means a mechanism in which more than one TSO takes the same reserve capacity, being FCR, FRR or RR, into account to fulfil their respective reserve requirements resulting from their reserve dimensioning processes;		
1	0	0	3	111	111. 'FCR full activation frequency deviation' means the rated value of frequency deviation at which the FCR in a synchronous area is fully activated;		
1	0	0	3	112	112. 'FCR full activation time' means the time period between the occurrence of the reference incident and the corresponding full activation of the FCR;		
1	0	0	3	113	113. 'FCR obligation' means the part of all of the FCR that falls under the responsibility of a TSO;		
1	0	0	3	117	117. 'frequency quality target parameter' means the main system frequency target on which the behaviour of FCR, FRR and RR activation processes is evaluated in normal state;		

1	0	0	3	130	130. ‘initial FCR obligation’ means the amount of FCR allocated to a TSO on the basis of a sharing key		
1	0	0	3	152	152. ‘reserve replacement process or 'RRP’ means a process to restore activated FRR and additionally for GB and IE/NI to restore the activated FCR;		
2	0	0	45	0	Article 45 - Structural data exchange		
2	0	0	45	1	1. Each SGU which is a power generating facility owner of a type D power generating module connected to the transmission system shall provide the TSO with at least the following data:		PC.A.2
2	0	0	45	1(a)	(a) general data of the power generating module, including installed capacity and primary energy source;		C.A.3.2.
2	0	0	45	1(b)	(b) turbine and power generating facility data including time for cold and warm start;		DRC.6.1
2	0	0	45	1(c)	(c) data for short-circuit current calculation;		PC.A.2.
2	0	0	45	1(d)	(d) power generating facility transformer data;		PC.A.2.2
2	0	0	45	1(e)	(e) FCR data of power generating modules offering or providing that service, in accordance with Article 154;		
2	0	0	45	1(f)	(f) FRR data of power generating modules offering or providing that service, in accordance with Article 158;		
2	0	0	45	1(g)	(g) RR data of power generating modules that offer or provide that service in accordance with Article 161;		
2	0	0	45	1(h)	(h) data necessary for restoration of the transmission system;		6.1.16PC
2	0	0	45	1(h)(i)	(i) data and models necessary for performing dynamic simulation;		6.1.7and
2	0	0	45	1(h)(i)	(j) protection data;		DRC.6.1
2	0	0	45	1(k)	(k) data necessary for determining the costs of remedial actions in accordance with Article 78(1)(b); where a TSO makes use of market based mechanisms in line with Article 4(2)(d), the provision of prices to be paid by the TSO shall be considered sufficient;		BC4
2	0	0	45	1(l)	(l) voltage and reactive power control capability.		PC.A.2.
2	0	0	45	2	2. Each SGU which is a power generating facility owner of a type B or a type C power generating module connected to the transmission system shall provide the TSO with at least the following data:		
2	0	0	45	1(a)	(a) general data of the power generating module, including installed capacity and primary energy source;		DRC.6.1
2	0	0	45	2(b)	(b) data for short-circuit current calculation;		DRC.6.1
2	0	0	45	2(c)	(c) FCR data according to the definition and requirements of the Article 173 for power generating modules offering or providing that service;		X
2	0	0	45	2(d)	(d) FRR data for power generating modules that offer or provide that service;		X
2	0	0	45	2(e)	(e) RR data for power generating modules that offer or provide that service;		X
2	0	0	45	2(f)	(f) protection data;		DRC.6.1
2	0	0	45	2(g)	(g) reactive power control capability;		DRC.6.1
2	0	0	45	2(h)	(h) data necessary for determining the costs of remedial actions in accordance with Article 78(1)(b); where a TSO makes use of market based mechanisms in line with Article 4 (2) d), the provision of prices to be paid by the TSO shall be considered sufficient;		X
2	0	0	45	2(h)(i)	(i) data necessary for performing dynamic stability assessment according to Article 38.		6.1.7and
2	0	0	45	3	3. A TSO may request the power generating facility owner of a power generating module connected to the transmission system to provide further data where appropriate for operational security analysis in accordance with Title 2 of Part III.		

2	0	0	45	4	4. Each HVDC system owner or interconnector owner shall provide the TSO with the following data regarding the HVDC system or interconnector:		
2	0	0	45	4(a)	(a) nameplate data of the installation;		C.A.3.2.
2	0	0	45	4(b)	(b) transformers data;		
2	0	0	45	4(c)	(c) data on filters and filter banks;		
2	0	0	45	4(d)	(d) reactive power compensation data;		PC.A.2.
2	0	0	45	4(e)	(e) active power control capability;		
2	0	0	45	4(f)	(f) reactive power and voltage control capability;		PC.A.2.
2	0	0	45	4(g)	(g) active or reactive operational mode prioritization, if existing;		
2	0	0	45	4(h)	(h) frequency response capability;		
2	0	0	45	4(h)(i)	(i) dynamic models for dynamic simulation;		
2	0	0	45	4(h)(i)	(j) protection data; and		
2	0	0	45	4(k)	(k) fault-ride-through capability.		
2	0	0	45	5	5. Each AC interconnector owner shall provide the TSO with at least the following data:		
2	0	0	45	5(a)	(a) nameplate data of the installation;		
2	0	0	45	5(b)	(b) electrical parameters;		
2	0	0	45	5(c)	(c) associated protections.		
2	0	0	48	0	Article 48 - Structural data exchange		
2	0	0	48	1	1. Unless otherwise provided by the TSO, each power generating facility owner of a power generating module which is a SGU pursuant to Article 2(1)(a) and by aggregation of the SGUs pursuant to Article 2(1)(e) connected to the distribution system shall provide at least the following data to the TSO and to the DSO to which it has a connection point:		
2	0	0	48	1(a)	(a) general data of the power generating module, including installed capacity and primary energy source or fuel type;		DPC
2	0	0	48	1(b)	(b) FCR data according to the definition and requirements of Article 173 for power generating facilities offering or providing the FCR service;		
2	0	0	48	1(c)	(c) FRR data for power generating facilities offering or providing the FRR service;		
2	0	0	48	1(d)	(d) RR data for power generating modules offering or providing the RR service;		
2	0	0	48	1(e)	(e) protection data;		
2	0	0	48	1(f)	(f) reactive power control capability;		CCs
2	0	0	48	1(g)	(g) capability of remote access to the circuit breaker;		
2	0	0	48	1(h)	(h) data necessary for performing dynamic simulation according to the provisions in Commission Regulation No (EU) 2016/631; and		CCs

2	0	0	48	1(h)(i)	(i) voltage level and location of each power generating module.		
2	0	0	48	2	2. Each power generating facility owner of a power generating module which is a SGU in accordance with Article 2(1)(a) and 2(1)(e) shall inform the TSO and the DSO to which it has a connection point, within the agreed time and not later than the first commissioning or any changes to the existing installation, about any change in the scope and the contents of the data listed in paragraph 1.		
4	0	0	152	0	System states related to system frequency		
4	0	0	152	1	1. Each TSO shall operate its control area with sufficient upward and downward active power reserve, which may include shared or exchanged reserves, to face imbalances of demand and supply within its control area. Each TSO shall control the FRCE as defined in the Article 143 in order to reach the required frequency quality within the synchronous area in cooperation with the TSOs in the same synchronous area.		
4	0	0	152	2	2. Each TSO shall monitor close to real-time generation and exchange schedules, power flows, node injections and withdrawals and other parameters within its control area relevant for anticipating a risk of a frequency deviation and shall take, in coordination with other TSOs of its synchronous area, measures to limit their negative effects on the balance between generation and demand.		
4	0	0	152	3	3. All TSOs of each synchronous area shall specify a real-time data exchange in accordance with Article 42 which shall include:		
4	0	0	152	3(a)	(a) the system state of the transmission system in accordance with Article 19; and		
4	0	0	152	3(b)	(b) the real-time measurement data of the FRCE of the LFC blocks and LFC areas of the synchronous area.		
4	0	0	152	4	4. The synchronous area monitor shall determine the system state with regard to the system frequency in accordance with Article 19 and in accordance with the system frequency limits specified in Article 18(5) and (6).		
4	0	0	152	5	5. The synchronous area monitor shall ensure that all TSOs of all synchronous areas are informed in case the system frequency deviation fulfils one of the criteria for the alert state referred to in Article 18.		
4	0	0	152	6	6. All TSOs of a synchronous area shall define in the synchronous area operational agreement common rules for the operation of load-frequency control in the normal state and alert state.		
4	0	0	152	7	7. All TSOs of the GB and IE/NI synchronous areas shall specify in the synchronous area operational agreement operational procedures for cases of exhausted FCR. In those operational procedures the TSOs of a synchronous area shall have the right to require changes in the active power production or consumption of power generating modules and demand units.		
4	0	0	152	8	8. All TSOs of a LFC block shall specify operational procedures for cases of exhausted FRR or RR in the LFC block operational agreement. In those operational procedures the TSOs of a LFC block shall have the right to require changes in the active power production or consumption of power generating modules and demand units.		
4	0	0	152	9	9. The TSOs of a LFC block shall endeavour to avoid FRCEs which last longer than the time to restore frequency.		
4	0	0	152	10	10. All the TSOs of a synchronous area shall specify in the synchronous area operational agreement the operational procedures for cases of alert state due to a violation of system frequency limits. The operational procedures shall aim at reducing the system frequency deviation to restore the system state to the normal state and to limit the risk of emergency state by determining procedures in the synchronous area operational agreement in respect of which the TSOs shall have the right to deviate from the obligation set in Article 142(1).		

4	0	0	152	11	11. If the system state is in the alert state due to insufficient active power reserves in accordance with Article 18, the TSOs of the concerned LFC blocks shall, in close cooperation with the other TSOs of the synchronous area and the TSOs of other synchronous areas, act to restore and replace the necessary levels of active power reserves. For that purpose, the TSOs of a LFC block shall have the right to require changes in the active power production or consumption of power generating modules or demand units within its area to reduce or to remove the violation of the requirements concerning active power reserve.		
4	0	0	152	12	12. If the 1-minute average of the FRCE of a LFC block is above the Level 2 FRCE range at least during the time necessary to restore frequency and where the TSOs of a LFC block do not expect that FRCE will be sufficiently reduced by undertaking the actions in paragraph 15, TSOs shall have the right to require changes in the active power production or consumption of power generating modules and demand units within their respective areas to reduce the FRCE as specified in paragraph 16.		
4	0	0	152	13	13. For the CE and Nordic synchronous areas, where the FRCE of a LFC block exceeds 25 % of the reference incident of the synchronous area for more than 30 consecutive minutes and if the TSOs of that LFC block do not expect to reduce sufficiently the FRCE with the actions taken pursuant to paragraph 15, the TSOs shall require changes in the active power production or consumption of power generating modules and demand units within their respective areas to reduce the FRCE as specified in paragraph 16.		
4	0	0	152	14	14. The LFC block monitor shall be responsible for identifying any violation of the limits in paragraphs 12 and 13 and:		
4	0	0	152	14(a)	(a) shall inform the other TSOs of the LFC block; and		
4	0	0	152	14(b)	(b) together with the TSOs of the LFC block shall implement coordinated actions to reduce the FRCE which shall be specified in the LFC block operational agreement.		
4	0	0	152	15	15. For the cases referred to in paragraphs 11 to 13 all the TSOs of each synchronous area shall specify in the synchronous area operational agreement the actions to enable the TSOs of a LFC block to actively reduce the frequency deviation with the cross-border activation of reserves. In the cases referred to in paragraphs 11 to 13 the TSOs of the synchronous area shall endeavour to enable the TSOs of the concerned LFC block to reduce their FRCE.		
4	0	0	152	16	16. The TSOs of a LFC block shall specify, in the LFC block operational agreement, measures to reduce the FRCE by means of changes in the active power production or consumption of power generating modules and demand units within their area.		
4	0	0	153	0	FCR dimensioning		
4	0	0	153	1	1. All TSOs of each synchronous area shall determine at least annually the reserve capacity on FCR required for the synchronous area and the initial FCR obligation of each TSO in accordance with paragraph 2.		1
4	0	0	153	2	2. All TSOs of each synchronous area shall specify dimensioning rules in the synchronous area operational agreement in accordance with the following criteria:		
4	0	0	153	2(a)	(a) the reserve capacity on FCR required for the synchronous area shall cover at least the reference incident and, for the CE and Nordic synchronous areas, the results of the probabilistic dimensioning approach for FCR carried out pursuant to point (c);		
4	0	0	153	2(b)	(b) the TSOs of a synchronous area shall determine the size of the reference incident in accordance with the following conditions:		
4	0	0	153	2(b)(i)	(i) for the CE synchronous area, the reference incident shall be 3000 MW in positive direction and 3000 MW in negative direction;		

4	0	0	153	2(b)(ii)	(ii) for the GB, IE/NI, and Nordic synchronous areas, the reference incident shall be the largest imbalance that may result from an instantaneous change of active power such as that of a single power generating module, single demand facility, or single HVDC interconnector or from a tripping of an AC-line, or it shall be the maximum instantaneous loss of active power consumption due to the tripping of one or two connection points. The reference incident shall be determined separately for positive and negative direction.		X
4	0	0	153	2(c)	(c) for the CE and Nordic synchronous areas, all TSOs of the synchronous area shall have the right to define a probabilistic dimensioning approach for FCR taking into account the pattern of load, generation and inertia and synthetic inertia as well as the available means to deploy minimum inertia in real-time in accordance with the methodology referred to in Article 39 with the aim of reducing the probability of insufficient FCR to below or equal to once in 20 years; and		
4	0	0	153	2(d)	(d) the shares of the reserve capacity on FCR required for each TSO as initial FCR obligation shall be based on the sum of the net generation and consumption of its area divided by the sum of net generation and consumption of the synchronous area over a period of one year.		
4	0	0	154	0	FCR technical minimum requirements		
4	0	0	154	1	1. Each reserve connecting TSO shall ensure that the FCR corresponds to the properties listed for its synchronous area in Table 1 of Annex V applying to all FCR providing units and FCR providing groups consistent with the values.	0114 BC	
4	0	0	154	2	2. All TSOs of a synchronous area shall have the right to specify, in the synchronous area operational agreement, common additional properties of the FCR required to ensure operational security in the synchronous area, by means of a set of technical parameters and within the ranges in Article 15(2)(d) of Commission Regulation No (EU) 2016/631 and Article 27 and 28 of Commission Regulation No (EU) 2016/1388. Those common additional properties of FCR shall take into account the installed capacity, structure and pattern of consumption and generation of the synchronous area. The TSOs shall apply a transitional period for the introduction of additional properties, defined in consultation with the affected FCR providers.	6-6.3.7	
4	0	0	154	3	3. The reserve connecting TSO shall have the right to set out additional requirements for FCR providing groups within the ranges in Article 15(2)(d) of Commission Regulation No (EU) 2016/631 and Article 27 and 28 of Commission Regulation No (EU) 2016/1388 in order to ensure operational security. Those additional requirements shall be based on technical reasons such as the geographical distribution of the power generating modules or demand units belonging to an FCR providing group. The FCR provider shall ensure that the monitoring of the FCR activation of the FCR providing units within a reserve providing group is possible.	.C 6.3.6	
4	0	0	154	4	4. To ensure operational security, the reserve connecting TSO shall have the right to exclude FCR providing groups from the provision of FCR based on technical arguments such as the geographical distribution of the power generating modules or demand units belonging to an FCR providing group.	.C 6.3.6	
4	0	0	154	5	5. Each FCR providing unit and each FCR providing group shall have only one reserve connecting TSO.	.C 6.3.6	
4	0	0	154	6	6. Each FCR providing unit and each FCR providing group shall comply with the properties required for FCR in Table 1 of Annex V and with any additional properties or requirements specified in accordance with paragraphs 2 and 3 and 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. They shall be capable of activating FCR within the frequency ranges specified in Article 13(1) of Commission Regulation No (EU) 2016/631.	BC3 .C 6.3.6-6.3.7	

4	0	0	154	7	7. Each TSO of the CE synchronous area shall ensure that the combined reaction of FCR of a LFC area comply with the following requirements:		
4	0	0	154	7(a)	(a) the activation of FCR shall not be artificially delayed and begin as soon as possible after a frequency deviation;		
4	0	0	154	7(b)	(b) in case of a frequency deviation equal to or larger than 200 mHz, at least 50 % of the full FCR capacity shall be delivered at the latest after 15 seconds;		
4	0	0	154	7(c)	(c) in case of a frequency deviation equal to or larger than 200 mHz, 100 % of the full FCR capacity shall be delivered at the latest after 30 seconds;		
4	0	0	154	7(d)	(d) in case of a frequency deviation equal to or larger than 200 mHz, the activation of the full FCR capacity shall rise at least linearly from 15 to 30 seconds; and		
4	0	0	154	7(e)	(e) in case of a frequency deviation smaller than 200 mHz the related activated FCR capacity shall be at least proportional with the same time behaviour referred to in points (a) to (d).		
4	0	0	154	8	8. Each reserve connecting TSO shall monitor its contribution to the FCP and its FCR activation with respect to its FCR obligation, including FCR providing units and FCR providing groups. Each FCR provider shall make available to the reserve connecting TSO, for each of its FCR providing units and FCR providing groups, at least the following information:	1.C	6.3.6
4	0	0	154	8(a)	(a) time-stamped status indicating if FCR is on or off;	-6.3.7	GC
4	0	0	154	8(b)	(b) time-stamped active power data needed to verify FCR activation. which shall include time-stamped instantaneous active power;	0114	BC
4	0	0	154	8(c)	(c) droop of the governor for type C and type D power generating modules as defined in Article 5 of Commission Regulation No (EU) 2016/631 acting as FCR providing units, or its equivalent parameter for FCR providing groups consisting of type A and/or type B power generating modules as defined in Article 5 of Commission Regulation No (EU) 2016/631, and/or demand units with demand response active power control as defined in Article 28 of Commission Regulation No (EU) 2016/1388.	0114	BC
4	0	0	154	9	9. 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.		GC0114
4	0	0	154	10	10. At the request of the reserve connecting TSO, the FCR provider shall make the information listed in paragraph 9 available in real-time, with a time resolution of at least 10 seconds.	-6.3.7	GC
4	0	0	154	11	11. At the request of the reserve connecting TSO and where necessary for the verification of the activation of FCR, a FCR provider shall make available the data listed in paragraph 9 concerning technical installations that are part of the same FCR providing unit.		BC3 1.C 6.3.6-6.3.7
4	0	0	155	0	FCR prequalification process	1.C	6.3.6
4	0	0	155	1	1. By 12 months after entry into force of this regulation, each TSO shall develop an FCR prequalification process and shall make publicly available the details of the FCR prequalification process.		GC011
4	0	0	155	2	2. A potential FCR provider shall demonstrate to the reserve connecting TSO that it complies with the technical and availability requirements set out in Article 154 by completing successfully the prequalification process of potential FCR providing units or FCR providing groups, described in paragraphs 3 to 6 of this Article.	.3.6-6.3.	

4	0	0	155	3	3. A potential FCR provider shall submit a formal application to the reserve connecting TSO together with the required information of potential FCR providing units or FCR providing groups. Within 8 weeks from receipt of the application, the reserve connecting TSO shall confirm whether the application is complete. Where the reserve connecting TSO considers that the application is incomplete, the potential FCR provider shall submit the additional required information within 4 weeks from receipt of the request for additional information. Where the potential FCR provider does not supply the requested information within that deadline, the application shall be deemed withdrawn.	6-6.3.7	6
4	0	0	155	4	4. Within 3 months of confirmation that the application is complete, the reserve connecting TSO shall evaluate the information provided and decide whether the potential FCR providing units or FCR providing groups meet the criteria for an FCR prequalification. The reserve connecting TSO shall notify its decision to the potential FCR provider.	6-6.3.7	6
4	0	0	155	5	5. Where the compliance with certain requirements of this Regulation has already been verified by the reserve connecting TSO, it will be recognised in the prequalification	6-6.3.7	6
4	0	0	155	6	6. The qualification of FCR providing units or FCR providing groups shall be reassessed:	-6.3.7	6C
4	0	0	155	6(a)	(a) at least once every five years; and	-6.3.7	6C
4	0	0	155	6(b)	(a) in case the technical or availability requirements or the equipment have changed.	0114	BC
4	0	0	156	0	FCR provision		
4	0	0	156	1	1. Each TSO shall ensure the availability of at least its FCR obligations agreed between all TSOs of the same synchronous area in accordance with Articles 153, 163, 173 and 174.		
4	0	0	156	2	2. All TSOs of a synchronous area shall determine, at least on an annual basis, the size of the K-factor of the synchronous area, taking into account the following factors :	2.C	6.3.6
4	0	0	156	2(a)	(a) the reserve capacity on FCR divided by the maximum steady-state frequency deviation;		
4	0	0	156	2(b)	(b) the auto-control of generation;		
4	0	0	156	2(c)	(c) the self-regulation of load, taking into account the contribution in accordance with Articles 27 and 28 of Commission Regulation No (EU) 2016/1388;		
4	0	0	156	2(d)	(d) the frequency response of HVDC interconnectors referred to in Article 172; and,		
4	0	0	156	2(e)	(e) the LFSM and FSM activation in accordance with Articles 13 and 15 of Commission Regulation No (EU) 2016/631.		
4	0	0	156	3	3. All TSOs of a synchronous area consisting of more than one LFC area shall, in the synchronous area operational agreement, determine the shares of the K-factor for each LFC area, which shall be based on at least:		
4	0	0	156	3(a)	(a) the initial FCR obligations;		
4	0	0	156	3(b)	(b) auto-control of generation;		
4	0	0	156	3(c)	(c) the self-regulation of load;		
4	0	0	156	3(d)	(d) frequency coupling via HVDC between synchronous areas;		
4	0	0	156	3(e)	(e) exchange of FCR.		
4	0	0	156	4	4. 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.	0114	BC
4	0	0	156	5	5. Each FCR provider shall inform its reserve connecting TSO, 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 prequalification.	0114	BC

4	0	0	156	6	6. Each TSO shall ensure, or shall require its FCR providers to ensure that the loss of a FCR providing unit does not endanger the system security by:		
4	0	0	156	6(a)	(a) limiting the share of the FCR provided per FCR providing unit to 5 % of the reserve capacity of FCR required for each of the whole CE and Nordic synchronous areas;		
4	0	0	156	6(b)	(b) excluding the FCR provided by the unit defining the reference incident of the synchronous area from the dimensioning process for GB, IE/NI and Nordic synchronous areas; and		
4	0	0	156	6(c)	(c) replacing the FCR which is made unavailable due to a forced outage or the unavailability of an FCR providing unit or FCR providing group as soon as technically possible and in accordance with the conditions that shall be defined by the reserve connecting TSO.		
4	0	0	156	7	7. An FCR providing unit or FCR providing group with an energy reservoir that does not limit its capability to provide FCR shall activate its FCR for as long as the frequency deviation persists. For the GB and IE/NI synchronous areas, a FCR providing unit or FCR providing group with an energy reservoir that does not limit its capability to provide FCR shall activate its FCR until it activates its FRR or for the period specified in the synchronous area operational agreement.		
4	0	0	156	8	8. A FCR providing unit or FCR providing group with an energy reservoir that limits its capability to provide FCR shall activate its FCR for as long as the frequency deviation persists, unless its energy reservoir is exhausted in either the positive or negative direction. For the GB and IE/NI synchronous areas, a FCR providing unit or FCR providing group with an energy reservoir that limits its capability to provide FCR shall activate its FCR until it activates its FRR or for the period specified in the synchronous area operational agreement.		
4	0	0	156	9	9. For the CE and Nordic synchronous areas, each FCR provider shall ensure that the FCR from its FCR providing units or groups with limited energy reservoirs are continuously available during normal state. For the CE and Nordic synchronous areas, as of triggering the alert state and during the alert state, each FCR provider shall ensure that the FCR from its FCR providing units or groups with limited energy reservoirs are able to fully activate FCR continuously for a time period to be defined pursuant to paragraphs 10 and 11. Where no period has been determined pursuant to paragraphs 10 and 11, each FCR provider shall ensure that the FCR from its FCR providing units or groups with limited energy reservoirs are able to fully activate FCR continuously for at least 15 minutes or, in case of frequency deviations that are smaller than a frequency deviation requiring full FCR activation, for an equivalent length of time, or for a period defined by each TSO, which shall not be greater than 30 or smaller than 15 minutes.		
4	0	0	156	10	10. For the CE and Nordic synchronous areas, all TSOs shall develop a proposal concerning the minimum activation period to be ensured by FCR providers in the CE and Nordic synchronous areas. The period determined shall not be greater than 30 or smaller than 15 minutes. The proposal shall take full account of the results of the cost–benefit analysis conducted pursuant to paragraph 11.		
4	0	0	156	11	11. By [12months] after entry into force of this regulation, all TSOs of the CE and Nordic synchronous areas shall propose assumptions and methodology for a cost-benefit analysis to be conducted, in order to assess the time period required for FCR providing units or groups with limited energy reservoirs to remain available during alert state. By [18 months] after approval of the assumptions and methodology by all regulatory authorities of the concerned region, the TSOs of the CE and Nordic synchronous areas shall submit the results of their cost-benefit analysis, suggesting a time period which shall not be greater than 30 or smaller than 15 minutes. The cost-benefit analysis shall take into account at least:		
4	0	0	156	11(a)	(a) experiences gathered with different time frames and shares of emerging technologies in different LFC blocks;		
4	0	0	156	11(b)	(b) the impact of a defined time period on the total cost of FCR reserves in the synchronous area;		

4	0	0	156	11(c)	(c) the impact of a defined time period on system stability risks, in particular through prolonged or repeated frequency events;		
4	0	0	156	11(d)	(d) the impact on system stability risks and total cost of FCR reserves of increasing total volume of FCR reserves;		
4	0	0	156	11(e)	(e) the impact of technological developments on costs of availability periods for FCR from its FCR providing units or groups with limited energy reservoirs.		
4	0	0	156	12	12. The FCR provider shall specify the limitations of the energy reservoir of its FCR providing units or FCR providing groups in the prequalification process in accordance with Article 155.	0114 BC	
4	0	0	156	13	13. A FCR provider using FCR providing units or FCR providing group with an energy reservoir that limits their capability to provide FCR shall ensure the recovery of the energy reservoirs in the positive or negative directions in accordance with the following criteria:		
4	0	0	156	13(a)	(a) for the GB and IE/NI synchronous areas, the FCR provider shall use the methods specified in the synchronous area operational agreement;		
4	0	0	156	13(b)	(b) for the CE and Nordic synchronous areas, the FCR provider shall ensure the recovery of the energy reservoirs as soon as possible, within 2 hours after the end of the alert state.		
4	0	0	157	0	FRR dimensioning		
4	0	0	157	1	1. All TSOs of a LFC Block shall set out FRR dimensioning rules in the LFC Block operational agreement.		
4	0	0	157	2	2. The FRR dimensioning rules shall include at least the following:		
4	0	0	157	2(a)	(a) all TSOs of a LFC block in the CE and Nordic synchronous areas shall determine the required reserve capacity on FRR of the LFC block based on consecutive historical records comprising at least the historical LFC block imbalance values. The sampling of those historical records shall cover at least the time to restore frequency. The time period considered for those records shall be representative and include at least one full year period ending not earlier than 6 months before the calculation date;		
4	0	0	157	2(b)	(b) all TSOs of a LFC block in the CE and Nordic synchronous areas shall determine the reserve capacity on FRR of the LFC block sufficient to respect the current FRCE target parameters in Article 128 for the time period referred to in point (a) based at least on a probabilistic methodology. In using that probabilistic methodology, the TSOs shall take into account the restrictions defined in the agreements for the sharing or exchange of reserves due to possible violations of operational security and the FRR availability requirements. All TSOs of a LFC block shall take into account any expected significant changes to the distribution of LFC block imbalances or take into account other relevant influencing factors relative to the time period considered;		
4	0	0	157	2(c)	(c) all TSOs of a LFC block shall determine the ratio of automatic reserve capacity on FRR, manual reserve capacity on FRR, the automatic FRR full activation time and manual FRR full activation time in order to comply with the requirement of paragraph (b). For that purpose, the automatic FRR full activation time of a LFC block and the manual FRR full activation time of the LFC block shall not be more than the time to restore frequency;		
4	0	0	157	2(d)	(d) the TSOs of a LFC block shall determine the size of the reference incident which shall be the largest imbalance that may result from an instantaneous change of active power of a single power generating module, single demand facility, or single HVDC interconnector or from a tripping of an AC line within the LFC block;	BC1.5.	

4	0	0	157	2(e)	(e) all TSOs of a LFC block shall determine the positive reserve capacity on FRR, which shall not be less than the positive dimensioning incident of the LFC block;	BC1.5.
4	0	0	157	2(f)	(f) all TSOs of a LFC block shall determine the negative reserve capacity on FRR, which shall not be less than the negative dimensioning incident of the LFC block;	BC1.5.
4	0	0	157	2(g)	(g) all TSOs of a LFC block shall determine the reserve capacity on FRR of a LFC block, any possible geographical limitations for its distribution within the LFC block and any possible geographical limitations for any exchange of reserves or sharing of reserves with other LFC blocks to comply with the operational security limits;	BC1.5.
4	0	0	157	2(h)	(h) all TSOs of a LFC block shall ensure that the positive reserve capacity on FRR or a combination of reserve capacity on FRR and RR is sufficient to cover the positive LFC block imbalances for at least 99 % of the time, based on the historical records referred to in point (a);	BC1.5.
4	0	0	157	2(i)	(i) all TSOs of a LFC block shall ensure that the negative reserve capacity on FRR or a combination of reserve capacity on FRR and RR is sufficient to cover the negative LFC block imbalances for at least 99 % of the time, based on the historical record referred to in point (a);	BC1.5.
4	0	0	157	2(j)	(j) all TSOs of a LFC block may reduce the positive reserve capacity on FRR of the LFC block resulting from the FRR dimensioning process by concluding a FRR sharing agreement with other LFC blocks in accordance with provisions in Title 8. The following requirements shall apply to that sharing agreement:	BC1.5.
4	0	0	157	2(j)(i)	(i) for the CE and Nordic synchronous areas, the reduction of the positive reserve capacity on FRR of a LFC block shall be limited to the difference, if positive, between the size of the positive dimensioning incident and the reserve capacity on FRR required to cover the positive LFC block imbalances during 99 % of the time, based on the historical records referred to in point (a). The reduction of the positive reserve capacity shall not exceed 30 % of the size of the positive dimensioning incident;	
4	0	0	157	2(j)(ii)	(ii) for the GB and IE/NI synchronous areas, the positive reserve capacity on FRR and the risk of non-delivery due to sharing shall be assessed continually by the TSOs of the LFC block;	BC1.5.
4	0	0	157	2(k)	(k) all TSOs of a LFC block may reduce the negative reserve capacity on FRR of the LFC block, resulting from the FRR dimensioning process by concluding a FRR sharing agreement with other LFC blocks in accordance with the provisions of Title 8. The following requirements shall apply to that sharing agreement:	BC1.5.
4	0	0	157	2(k)(i)	(i) for the CE and Nordic synchronous areas, the reduction of the negative reserve capacity on FRR of a LFC block shall be limited to the difference, if positive, between the size of the negative dimensioning incident and the reserve capacity on FRR required to cover the negative LFC block imbalances during99 % of the time, based on the historical records referred to in point (a);	
4	0	0	157	2(k)(ii)	(ii) for the GB and IE/NI synchronous areas, the negative reserve capacity on FRR and the risk of non-delivery due to sharing shall be assessed continually by the TSOs of the LFC block.	BC1.5.
4	0	0	157	3	3. All TSOs of a LFC block where the LFC block comprises more than one TSO shall set out, in the LFC block operational agreement, the specific allocation of responsibilities between the TSOs of the LFC areas for the implementation of the obligations established in paragraph 2.	
4	0	0	157	4	4. All TSOs of a LFC block shall have sufficient reserve capacity on FRR at any time in accordance with the FRR dimensioning rules. The TSOs of a LFC block shall specify in the LFC block operational agreement an escalation procedure for cases of severe risk of insufficient reserve capacity on FRR in the LFC block.	
4	0	0	158	0	FRR minimum technical requirements	
4	0	0	158	1	1. The FRR minimum technical requirements shall be the following:	
4	0	0	158	1(a)	(a) each FRR providing unit and each FRR providing group shall be connected to only one reserve connecting TSO;	BC2.6

4	0	0	158	1(b)	(b) a FRR providing unit or FRR providing group shall activate FRR in accordance with the setpoint received from the reserve instructing TSO;	0114	BC
4	0	0	158	1(c)	(c) the reserve instructing TSO shall be the reserve connecting TSO or a TSO designated by the reserve connecting TSO in an FRR exchange agreement pursuant to Article 165(3) or Article 171(4);		BC2.6
4	0	0	158	1(d)	(d) a FRR providing unit or FRR providing group for automatic FRR shall have an automatic FRR activation delay not exceeding 30 seconds;	0114	BC
4	0	0	158	1(e)	(e) a FRR provider shall 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 the reserve connecting TSO and the reserve instructing TSO real-time measurements of the connection point or another point of interaction agreed with the reserve connecting TSO concerning:	0114	BC
4	0	0	158	1(e)(i)	(i) time-stamped scheduled active power output;	0114	BC
4	0	0	158	1(e)(ii)	(ii) time-stamped instantaneous active power for:	0114	BC
4	0	0	158	1(e)(ii)	(A) each FRR providing unit;	0114	BC
4	0	0	158	1(e)(ii)	(B) each FRR providing group; and	0114	BC
4	0	0	158	1(e)(ii)	(C) 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;	0114	BC
4	0	0	158	1(f)	(f) a FRR providing unit or FRR providing group for automatic FRR shall be capable of activating its complete automatic reserve capacity on FRR within the automatic FRR full activation time;	0114	BC
4	0	0	158	1(g)	(g) a FRR providing unit or FRR providing group for manual FRR shall be capable of activating its complete manual reserve capacity on FRR within the manual FRR full activation time;	0114	BC
4	0	0	158	1(h)	(h) a FRR provider shall fulfil the FRR availability requirements ; and	0114	BC
4	0	0	158	1(i)	(i) a FRR providing unit or FRR providing group shall fulfil the ramping rate requirements of the LFC block.	0114	BC
4	0	0	158	2	2. All TSOs of a LFC block shall specify FRR availability requirements and requirements on the control quality of FRR providing units and FRR providing groups for their LFC block in the LFC block operational agreement pursuant to Article 119.		
4	0	0	158	3	3. The reserve connecting TSO shall adopt the technical requirements for the connection of FRR providing units and FRR providing groups to ensure the safe and secure delivery of FRR.		BC2.6
4	0	0	158	4	4. Each FRR provider shall:		BC2.6
4	0	0	158	4(a)	(a) ensure that its FRR providing units and FRR providing groups fulfil the FRR technical minimum requirements, the FRR availability requirements and the ramping rate requirements in paragraphs 1 to 3; and		BC2.6
4	0	0	158	4(b)	(b) inform its reserve instructing TSO 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.		
4	0	0	158	5	5. Each reserve instructing TSO shall ensure the monitoring of the compliance with the FRR minimum technical requirements in paragraph 1, the FRR availability requirements in paragraph 2, the ramping rate requirements in paragraph 1 and the connection requirements in paragraph 3 by its FRR providing units and FRR providing groups.		
4	0	0	159	0	FRR prequalification process		BC2.6
4	0	0	159	1	1. By 12 months after entry into force of this Regulation each TSO shall develop a FRR prequalification process and shall clarify and make publicly available its details.		GC011
4	0	0	159	2	2. A potential FRR provider shall demonstrate to the reserve connecting TSO or the TSO designated by the reserve connecting TSO in the FRR exchange agreement that it complies with the FRR minimum technical requirements in Article 158(1), the FRR availability requirements in Article 158(2),the ramping rate requirements in Article 158(1) and the connection requirements in Article 158(3) by completing successfully the prequalification process of potential FRR providing units or FRR providing groups, described in paragraphs 3 to 6 of this Article.		BC2.6

4	0	0	159	3	3. A potential FRR provider shall submit a formal application to the relevant reserve connecting TSO or the designated TSO together with the required information of potential FRR providing units or FRR providing groups. Within 8 weeks from receipt of the application, the reserve connecting TSO or the designated TSO shall confirm whether the application is complete. Where the reserve connecting TSO or the designated TSO considers that the application is incomplete they shall request additional information and the potential FRR provider shall submit the additional required information within 4 weeks from the receipt of the request. Where the potential FRR provider does not supply the requested information within that deadline, the application shall be deemed to be withdrawn.		BC2.6
4	0	0	159	4	4. Within 3 months after the reserve connecting TSO or the designated TSO confirms that the application is complete, the reserve connecting TSO or the designated TSO shall evaluate the information provided and decide whether the potential FRR providing units or FRR providing groups meet the criteria for a FRR prequalification. The reserve connecting TSO or the designated TSO shall notify their decision to the potential FRR provider.		BC2.6
4	0	0	159	5	5. The qualification of FRR providing units or FRR providing groups by the reserve connecting TSO or the designated TSO shall be valid for the entire LFC Block.		BC2.6
4	0	0	159	6	6. The qualification of FRR providing units or FRR providing groups shall be reassessed:		BC2.6
4	0	0	159	6(a)	(a) at least once every five years; and		BC2.6
4	0	0	159	6(b)	(b) where the technical or availability requirements or the equipment have changed.		
4	0	0	159	7	7. To ensure operational security, the reserve connecting TSO shall have the right to exclude FRR providing groups from the provision of FRR based on technical arguments such as the geographical distribution of the power generating modules or demand units belonging to a FRR providing group.		
4	0	0	160	0	Replacement reserves dimensioning		BC2.6
4	0	0	160	1	1. All TSOs of an LFC block shall have the right to implement a reserve replacement process.		
4	0	0	160	2	2. To comply with the FRCE target parameters referred to in Article 128, all TSOs of a LFC block with a RRP, performing a combined dimensioning process of FRR and RR to fulfil the requirements of Article 157(2), shall define RR dimensioning rules in the LFC block operational agreement.		
4	0	0	160	3	3. The RR dimensioning rules shall comprise at least the following requirements:		
4	0	0	160	3(a)	(a) for the Nordic and CE synchronous areas there shall be sufficient positive reserve capacity on RR to restore the required amount of positive FRR. For the GB and IE/NI synchronous areas there shall be sufficient positive reserve capacity on RR to restore the required amount of positive FCR and positive FRR;		
4	0	0	160	3(b)	(b) for the Nordic and CE synchronous areas, there shall be sufficient negative reserve capacity on RR to restore the required amount of negative FRR. For the GB and IE/NI synchronous areas, there shall be sufficient negative reserve capacity on RR to restore the required amount of negative FCR and negative FRR;		
4	0	0	160	3(c)	(c) there shall be sufficient reserve capacity on RR, where this is taken into account to dimension the reserve capacity on FRR in order to respect the FRCE quality target for the period of time concerned; and		
4	0	0	160	3(d)	(d) compliance with the operational security within a LFC block to determine the reserve capacity on RR.		
4	0	0	160	4	4. All TSOs of an LFC block may reduce the positive reserve capacity on RR of the LFC block, resulting from the RR dimensioning process, by developing a RR sharing agreement for that positive reserve capacity on RR with other LFC blocks in accordance with the provisions of Title 8 of Part IV. The control capability receiving TSO shall limit the reduction of its positive reserve capacity on RR in order to:		
4	0	0	160	4(a)	(a) guarantee that it can still meet its FRCE target parameters set out in Article 128;		

4	0	0	160	4(b)	(b) ensure that operational security is not endangered; and		
4	0	0	160	4(c)	(c) ensure that the reduction of the positive reserve capacity on RR does not exceed the remaining positive reserve capacity on RR of the LFC block.		
4	0	0	160	5	5. All TSOs of a LFC block may reduce the negative reserve capacity on RR of the LFC block, resulting from the RR dimensioning process, by developing a RR sharing agreement for that negative reserve capacity on RR with other LFC blocks in accordance with the provisions of Title 8 of Part IV. The control capability receiving TSO shall limit the reduction of its negative reserve capacity on RR in order to:		
4	0	0	160	5(a)	(a) guarantee that it can still meet its FRCE target parameters set out in Article 128;		
4	0	0	160	5(b)	(a) ensure that operational security is not endangered; and		
4	0	0	160	5(c)	(b) ensure that the reduction of the negative reserve capacity on RR does not exceed the remaining negative reserve capacity on RR of the LFC block.		
4	0	0	160	6	2. Where a LFC block is operated by more than one TSO and if the process is necessary for the LFC block, all TSOs of that LFC block shall specify in the LFC block operational agreement the allocation of responsibilities between the TSOs of different LFC areas for the implementation of the dimensioning rules referred set out in paragraph 3.		
4	0	0	160	7	3. A TSO shall have sufficient reserve capacity on RR in accordance with the RR dimensioning rules at any time. The TSOs of a LFC block shall specify in the LFC block operational agreement an escalation procedure for cases of severe risk of insufficient reserve capacity on RR in the LFC block.		
4	0	0	161	0	RR minimum technical requirements		
4	0	0	161	1	1. RR providing units and RR providing groups shall comply with the following minimum technical requirements:		
4	0	0	161	1(a)	(a) connection to only one reserve connecting TSO;		
4	0	0	161	1(b)	(b) RR activation according to the setpoint received from the reserve instructing TSO;		
4	0	0	161	1(c)	(c) the reserve instructing TSO shall be the reserve connecting TSO or a TSO that shall be designated by the reserve connecting TSO in the RR exchange agreement pursuant to Article 165(3) or Article 171(4);		
4	0	0	161	1(d)	(d) activation of complete reserve capacity on RR within the activation time defined by the Instructing TSO;		
4	0	0	161	1(e)	(e) de-activation RR according to the setpoint received from the reserve instructing TSO;		
4	0	0	161	1(f)	(f) a RR provider shall 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 the reserve connecting TSO and the reserve instructing TSO real-time measurements of the connection point or another point of interaction agreed with the reserve connecting TSO concerning:		
4	0	0	161	1(f)(i)	(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;		
4	0	0	161	1(f)(ii)	(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;		
4	0	0	161	1(g)	(g) fulfilment of the RR availability requirements.		
4	0	0	161	2	2. All TSOs of a LFC block shall specify RR availability requirements and requirements on the control quality of RR providing units and RR providing groups in the LFC block operational agreement in accordance with Article 119.		

4	0	0	161	3	3. The reserve connecting TSO shall adopt the technical requirements for the connection of RR providing units and RR providing groups to ensure the safe and secure delivery of RR in the prequalification process description.		
4	0	0	161	4	4. Each RR provider shall:		
4	0	0	161	4(a)	(a) ensure that its RR providing units and RR providing groups fulfil the RR technical minimum requirements and the RR availability requirements referred to in paragraphs 1 to 3; and		
4	0	0	161	4(b)	(b) inform its reserve instructing TSO 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.		
4	0	0	161	5	5. Each reserve instructing TSO shall ensure compliance with the RR technical requirements, the RR availability requirements and the connection requirements referred to in this Article with regard to its RR providing units and RR providing groups.		
4	0	0	162	0	Replacement reserves prequalification process		
4	0	0	162	1	1. Each TSO of a LFC block which has implemented a RRP shall develop a RR prequalification process within 12 months after entry into force of this Regulation and shall clarify and make publicly available the details thereof.		
4	0	0	162	2	2. A potential RR provider shall demonstrate to the reserve connecting TSO or the TSO designated by the reserve connecting TSO in the RR exchange agreement that it complies with the RR technical minimum requirements, the RR availability requirements and the connection requirements referred to in Article 161 by completing successfully the prequalification process of potential RR providing units or RR providing groups, described in paragraphs 3 to 6.		
4	0	0	162	3	3. A potential RR provider shall submit a formal application to the relevant reserve connecting TSO or the designated TSO together with the required information of potential RR providing units or RR providing groups. Within 8 weeks from receipt of the application, the reserve connecting TSO or the designated TSO shall confirm whether the application is complete. Where the reserve connecting TSO or the designated TSO considers that the application is incomplete, the potential RR provider shall submit the additional required information within 4 weeks from the receipt of the request for additional information. Where the potential RR provider does not supply the requested information within that deadline, the application shall be deemed withdrawn.		
4	0	0	162	4	4. Within 3 months of confirmation of the completeness of the application, the reserve connecting TSO or the designated TSO shall evaluate the information provided and decide whether the potential RR providing units or RR providing groups meet the criteria for a RR prequalification. The reserve connecting TSO or the designated TSO shall notify its decision to the potential RR provider.		
4	0	0	162	5	5. The qualification of RR providing units or RR providing groups shall be reassessed:		
4	0	0	162	5(a)	(a) at least once every five years; and		
4	0	0	162	5(b)	(b) where the technical or availability requirements or the equipment have changed.		
4	0	0	162	6	6. To ensure operational security, the reserve connecting TSO shall have the right to reject the provision of RR by RR providing groups, based on technical arguments such as the geographical distribution of the power generating modules or demand units establishing a RR providing group.		
4	0	0	173	0	Exchange of FCR between synchronous areas		
4	0	0	173	1	1. All TSOs of a synchronous area involved in a frequency coupling process shall have the right to use the FCR exchange process to exchange FCR between synchronous areas.		
4	0	0	173	2	2. All TSOs of synchronous areas involved in the exchange of FCR between synchronous areas shall organise that exchange so that the TSOs of one synchronous area receive from another synchronous area a share of the total reserve capacity on FCR required for their synchronous area pursuant to Article 153.		

4	0	0	173	3	3. The share of the total reserve capacity on FCR required for synchronous area where it is exchanged shall be provided in the second synchronous area in addition to the total reserve capacity on FCR required for that second synchronous area in accordance with Article 153.		
4	0	0	173	4	4. All TSOs of the synchronous area shall specify in the synchronous area operational agreement the limits for FCR exchange.		
4	0	0	173	5	5. All TSOs of the involved synchronous areas shall draw up an FCR exchange agreement whereby they agree upon the exchange of FCR.		
4	0	0	182	0	Reserve providing groups or units connected to the DSO grid		
4	0	0	182	1	1. TSOs and DSOs shall cooperate in order to facilitate and enable the delivery of active power reserves by reserve providing groups or reserve providing units located in the distribution networks.		
4	0	0	182	2	2. For the purposes of the prequalification processes for FCR in Article 155, FRR in Article 159 and RR in Article 162, each TSO shall develop and specify, in an agreement with its reserve connecting DSOs and intermediate DSOs, the terms of the exchange of information required for these prequalification processes for reserve providing units or groups located in the distributed networks and the delivery of active power reserves. The prequalification processes for FCR in Article 155, FRR in Article 159 and RR in Article 162 shall specify the information to be provided by the potential reserve providing units or groups, which shall include:		
4	0	0	182	2(a)	(a) voltage levels and connection points of the reserve providing units or groups;		
4	0	0	182	2(b)	(b) the type of active power reserves;		
4	0	0	182	2(c)	(c) the maximum reserve capacity provided by the reserve providing units or groups at each connection point; and		
4	0	0	182	2(d)	(d) the maximum rate of change of active power for the reserve providing units or groups.		
4	0	0	182	3	3. The prequalification process shall rely on the agreed timeline and rules concerning information exchanges and the delivery of active power reserves between the TSO, the reserve connecting DSO and the intermediate DSOs. The prequalification process shall have a maximum duration of three months from the submission of a complete formal application by the reserve providing unit or group.		
4	0	0	182	4	4. During the prequalification of a reserve providing unit or group connected to its distribution network, each reserve connecting DSO and each intermediate DSO, in cooperation with the TSO, shall have the right to set limits to or exclude the delivery of active power reserves located in its distribution network, based on technical reasons such as the geographical distribution of the reserve providing units and reserve providing groups.		
4	0	0	182	5	5. Each reserve connecting DSO and each intermediate DSO shall have the right, in cooperation with the TSO, to set, before the activation of reserves, temporary limits to the delivery of active power reserves located in its distribution system. The respective TSOs shall agree with their reserve connecting DSOs and intermediate DSOs on the applicable procedures.		

											L14 (copy definition)	L14 (copy definition)	L14 (copy definition)

			D-Code
			SQSS
			STC
			BSC
			CUSC [NGET]
			D-CUSC
			Legislation
			Licences
			I/C Access Rules
			No GB Framework
			RFG
			DCC
			HVDC
			CACM
			E&R
			FCA
			Balancing

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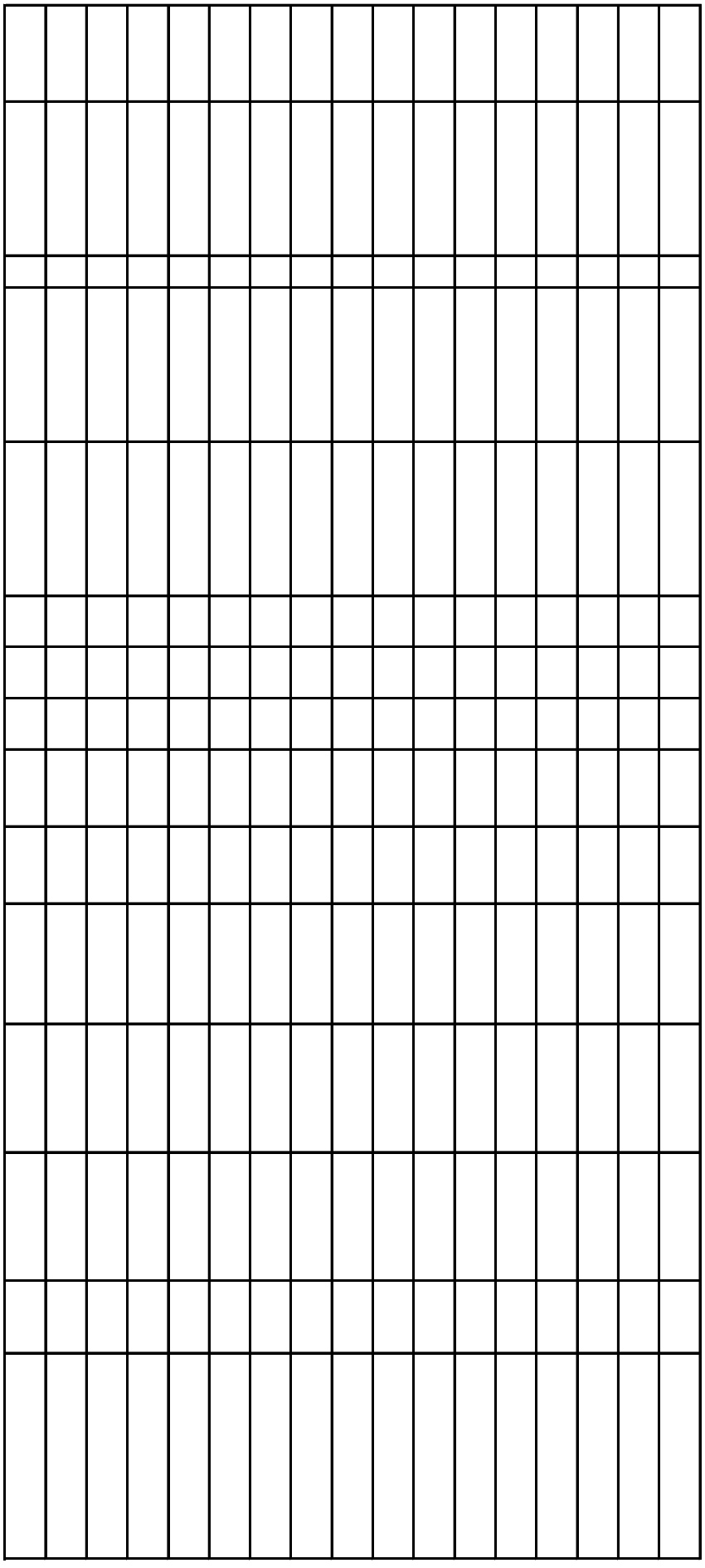

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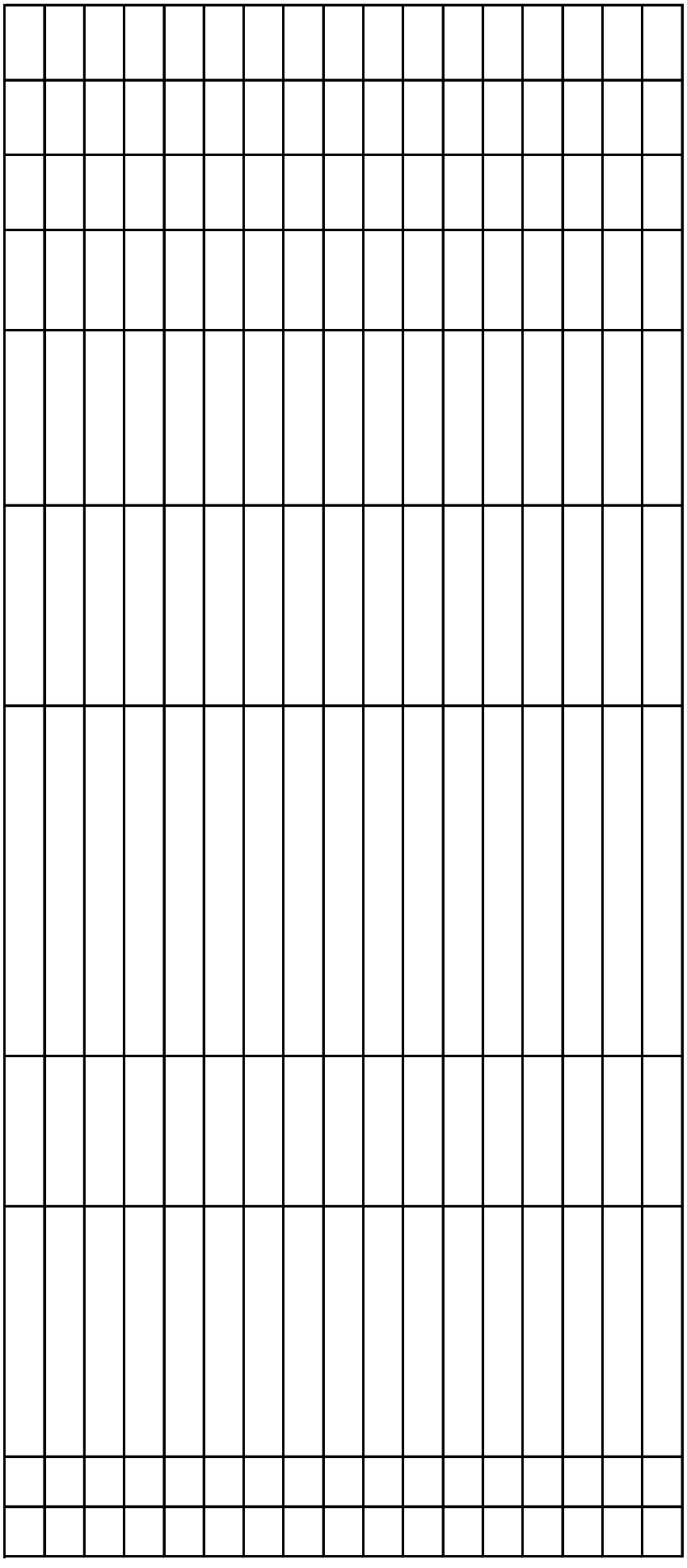

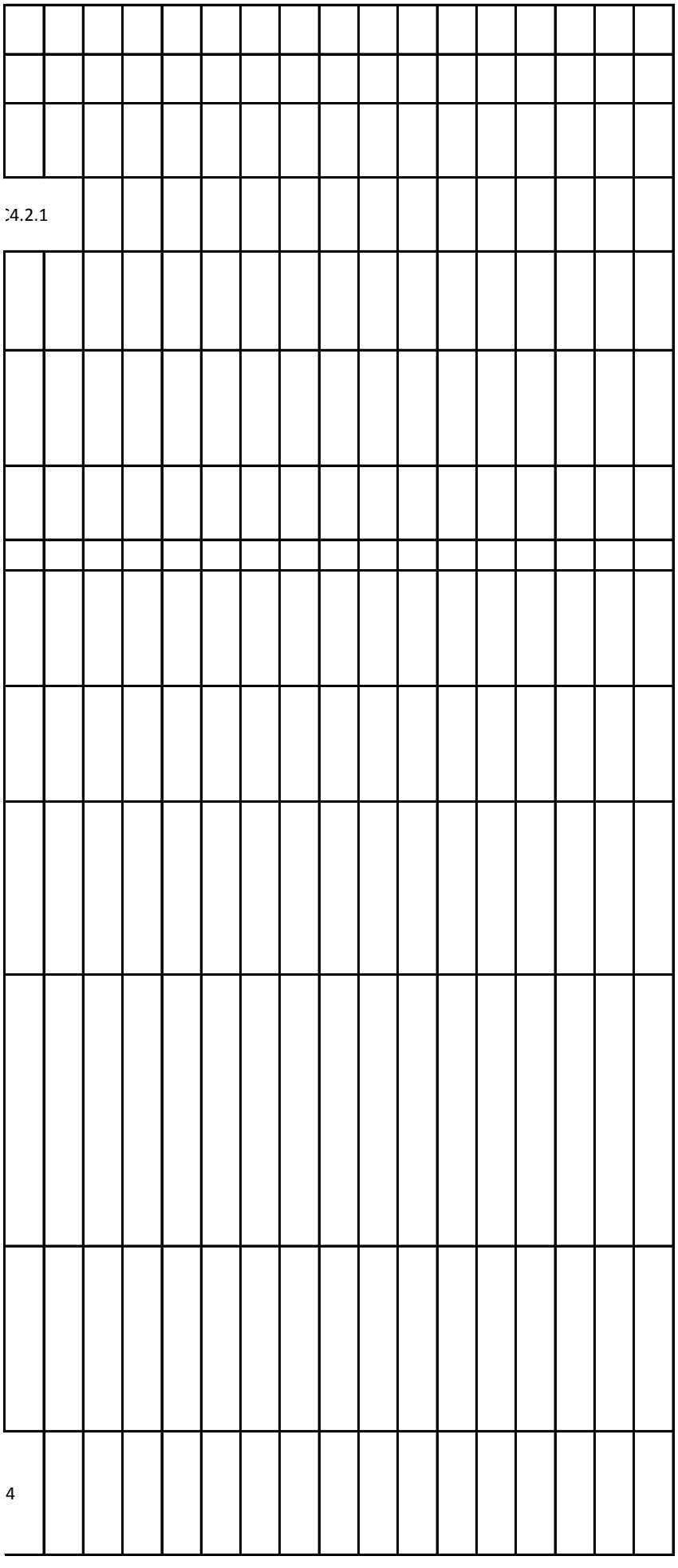
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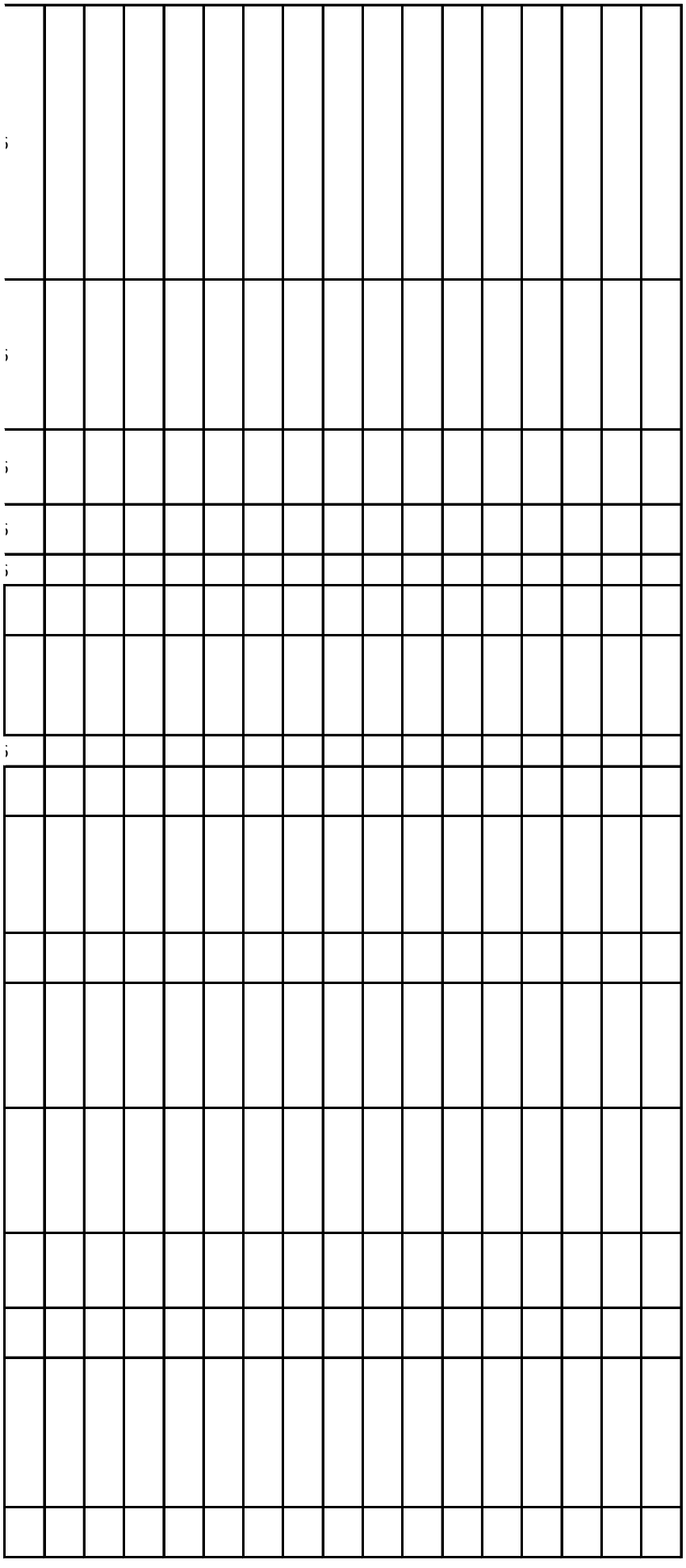

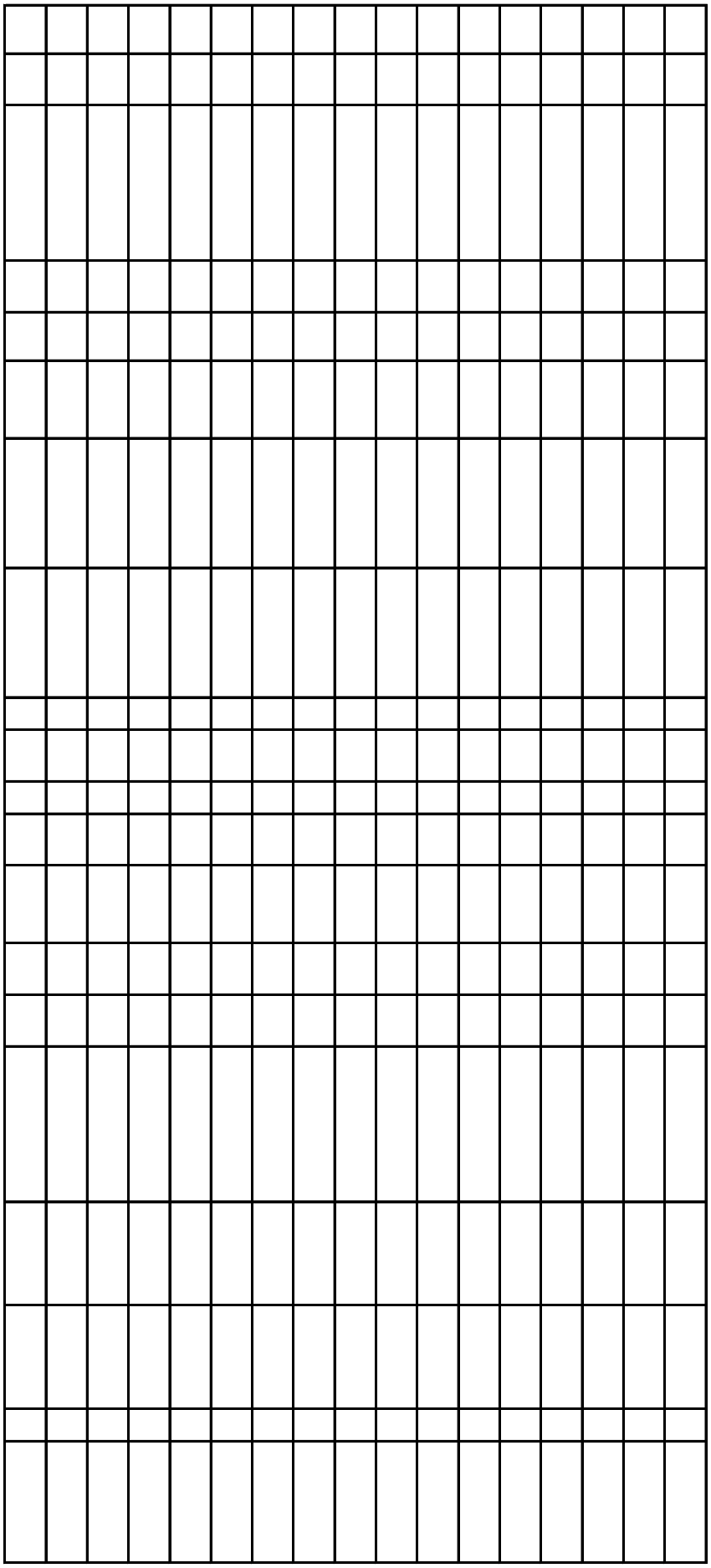

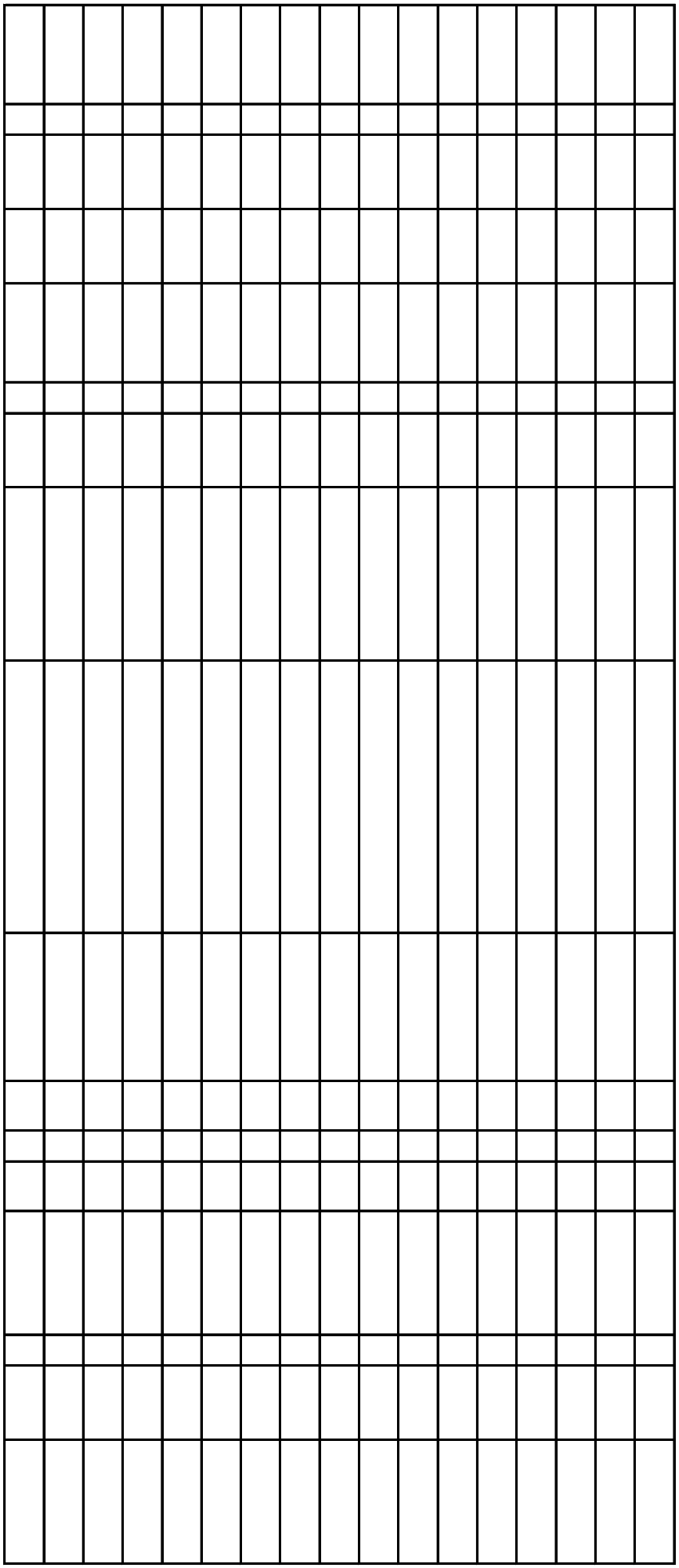

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Comments relative to GB regulation and codes
Relevant/neccesary definions picked up in code mods

No intention to include definiton in GB codes at present.
No intention to include definiton in GB codes at present.
No intention to include definiton in GB codes at present.
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No intention to include definiton in GB codes at present.
No intention to include definiton in GB codes at present.
Grid Code PC.A.2
Grid Code PC.A.3.2.2(a)
Grid Code - Planning Code, PC.A.2 , Data Registration Code DRC.6.1.2
Grid Code - Planning Code, PC.A.2, Data Registration Code
Grid Code - Planning Code, PART 1 - STANDARD PLANNING DATA, PC.A.2 , Data Registration Code
See SOGL Article 154
See SOGL Article 158
See SOGL Article 161
Grid Code, Operating Codes, OC9 Contingency Planning, OC10, OC10.1 - OC10.4, OC12, OC12.1 - OC12.4
Grid Code, PC.A.2, PC.A.3, PC.A.4, PC.A.5, PC.A.5.7, DRC.6.1.16
Grid Code, PC.A.6.6, DRC.6
BSC Section 4
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6, 7, BC2 PC.A.2.4
CC.6.3.2, CC6.3, CC.6.3.8, APPENDIX 6 , 7 , BC2
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 , 7 , BC2
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 ,7 , BC2 , DRC.6.1.13
CC6.3, CC.6.3.2, CC6.3, CC.6.3.8, APPENDIX 6, 7 , BC2,
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 ,7 , BC2 , DRC.6.1.13
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 ,7 , BC2 , DRC.6.1.13
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 ,7 , BC2 , DRC.6.1.13
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 ,7 , BC2 , DRC.6.1.13
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 ,7 , BC2 , DRC.6.1.13
Grid Code CC6.3, CC.6.3.2, CC.6.3.8, APPENDIX 6 ,7 , BC2 , DRC.6.1.13
PC.A.6.1.3, PC.A.7

Grid Code PC.A.5.4.3
Grid Code PC.A.5.4.3
Grid Code PC.A.3.2.2(a)
Grid Code PC.A.5.4.3
Grid Code PC.A.5.4.3
Grid Code PC.A.5.4.3
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N/A in GB
N/A in GB
N/A in GB
N/A in GB
Flexible as per Article 40.5- Maintain existing data exchange as per Distribution and Grid Code framework. Future mods will be raised based on changes to system operational requirements.
Flexible as per Article 40.5- Maintain existing data exchange as per Distribution and Grid Code framework. Future mods will be raised based on changes to system operational requirements (CC).
Flexible as per Article 40.5- Maintain existing data exchange as per Distribution and Grid Code framework. Future mods will be raised based on changes to system operational requirements.
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Flexible as per Article 40.5- Maintain existing data exchange as per Distribution and Grid Code framework. Future mods will be raised based on changes to system operational requirements.

Flexible as per Article 40.5- Maintain existing data exchange as per Distribution and Grid Code framework. Future mods will be raised based on changes to system operational requirements.
Flexible as per Article 40.5- Maintain existing data exchange as per Distribution and Grid Code framework. Future mods will be raised based on changes to system operational requirements.
NGET has responsibility to manage this requirement.
NGET has responsibility to manage this requirement.
This is being developed under Grid Code modification GC0106
This is being developed under Grid Code modification GC0106
This is being developed under Grid Code modification GC0106
NGET has responsibility to manage this requirement.
NGET intends to use the ENTSO-E Awareness System (EAS) and Crisis Communication Tool (CCT) to manage this requirement.
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
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NGET manages thris requirement through the application of the Security and Quality of Supply Standards in operational timescales.
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/

This is fulfilled firstly by BM and ancillary services and backed-up by the capability to perform emergency instructions to change generation output or to disconnect parties to restore frequency, balance and critical reserve levels.
Currently applies to Large Power Stations CC.6.3.7 If required for demand will be via contract
NA - CE and Nordic region only
NGET has responsibility to manage this requirement.
NA - As the single System Operator for the GB synchronous area, there is no-one else to inform in GB LFC block.
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NGET has responsibility to manage this requirement.
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NGET has responsibility to manage this requirement.
NGET has responsibility to manage this requirement.
NA - only applies to CE region.

BC1.5.4
NA- only applies to CE and Nordic regions
NA - as NGET is the single system Operator in GB therefore no requirement to share FCR capacity between TSOs.
The existing requirements of Grid Code CC.6.3.7 align with Table 1 of Annex V.
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
BC3 C.C 6.3.6-6.3.7
BC3 C.C 6.3.6-6.3.7
BC3 C.C 6.3.6-6.3.7
GC0114 BC4.2.1

NA - CE region only
NA - CE region only
NA - CE region only
NA - CE region only
NA - CE region only
NA - CE region only
GC0114 BC4.2.1
GC0114 BC4.2.1
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GC0114 BC4.2.1
GC0114 BC4.2.1
GC0114 BC4

GC0114 BC4
GC0114 BC4
GC0114 BC4.1 "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.". The intention was that any connection compliance processes could be used in prequalification to avoid a duplicate process.
GC0114 BC4.1.1
GC0114 BC4.1.1
GC0114 BC4.1.1
NA as only NGET reponsible in GB synchronous area
NGET has responsibility to manage this requirement.
NGET has responsibility to manage this requirement.
NGET has responsibility to manage this requirement.
NGET has responsibility to manage this requirement.
NGET has responsibility to manage this requirement.
NGET has responsibility to manage this requirement.
NA as only NGET reponsible in GB synchronous area
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NA as only NGET reponsible in GB synchronous area
NA as only NGET reponsible in GB synchronous area
NA as only NGET reponsible in GB synchronous area
NA as only NGET reponsible in GB synchronous area
GC0114 BC4.2.1
GC0114 BC4.2.1

Managed by NGET as detailed in Synchronous Area Methodology. No additional requirement for FCR providers.
NA as only applicable to CE and Nordic regions
Managed by NGET as detailed in Synchronous Area Methodology. No additional requirement for FCR providers.
Managed by NGET as detailed in Synchronous Area Methodology. No additional requirement for FCR providers.
Synchronous Area Operational Methodology currently under consultation - no new requirements identified as yet.
Synchronous Area Operational Methodology currently under consultation - no new requirements identified as yet.
NA as only applicable to CE and Nordic regions
NA as only applicable to CE and Nordic regions
NA as only applicable to CE and Nordic regions
NA as only applicable to CE and Nordic regions
NA as only applicable to CE and Nordic regions

NA as only applicable to CE and Nordic regions
NA as only applicable to CE and Nordic regions
NA as only applicable to CE and Nordic regions
GC0114 BC4.2.1
Specific requirements set out below.
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NA as only applicable to CE and Nordic regions
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NA as only applicable to CE and Nordic regions
NA as only applicable to CE and Nordic regions
NA. As set out in the LFC block operational agreement there is no aFRP in GB Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
BC1.5.4

BC1.5.4
BC1.5.4
BC1.5.4
BC1.5.4
BC1.5.4
BC1.5.4
NA as only applicable to CE and Nordic regions
BC1.5.4
BC1.5.4
NA as only applicable to CE and Nordic regions
BC1.5.4
NA as only applicable to CE and Nordic regions
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NA - only possible to connect to single System Operator in GB.

GC0114 BC 4.3.1
NGET to develop SO-SO agreements
GC0114 BC 4.3.1
GC0114 BC 4.3.1
GC0114 BC 4.3.1
GC0114 BC 4.3.1
GC0114 BC 4.3.1
GC0114 BC 4.3.1
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GC0114 BC 4.3.1
GC0114 BC 4.3.1
GC0114 BC 4.3.1
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NGET should specify the technical requirements for connection, these are set out in the Grid Code and include the provision of mandatory services such as BM participation and mandatory frequency response.
GC0114 BC 4.3.1
GC0114 BC 4.3.1
GC0114 BC 4.3.1
NGEt has a responsibility to appropriately monitor the compliance with technical requirements
GC0114 BC 4.1.1
GC0114 BC 4.1.1
GC0114 BC 4.1.1

GC0114 BC 4.1.1
GC0114 BC 4.1.1
GC0114 BC 4.1.1
GC0114 BC 4.1.1
GC0114 BC 4.1.1
GC0114 BC 4.1.1
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NA - only applies to CE and nordic regions
NA - only applies to CE and nordic regions
NGET may enter into sharing agreements with other TSOs.
NGET may enter into sharing agreements with other TSOs.

NGET may enter into sharing agreements with other TSOs.
NGET may enter into sharing agreements with other TSOs.
NGET may enter into sharing agreements with other TSOs.
NGET may enter into sharing agreements with other TSOs.
NGET may enter into sharing agreements with other TSOs.
NGET may enter into sharing agreements with other TSOs.
NA - as NGET is the single System Operator in GB
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
GC0114 BC4.4.1
GC0114 BC4.4.1
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GC0114 BC4.4.1
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/

GC0114
GC0114 BC4.4.1
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GC0114 BC4.1.1
NGET has the right to exchange FCR with other TSOs
NGET has the right to exchange FCR with other TSOs

NGET has the right to exchange FCR with other TSOs
Synchronous area operational agreement and LFC block operational agreement are currently under developed. Public consultation 23 July to 23 August here; https://consultations.entsoe.eu/
NGET has the right to exchange FCR with other TSOs
Datqa exchange requirements being developed under GC0106
GC0114 BC4.2.1, BC4.3.1, BC4.4.1
GC0114 BC4.2.1, BC4.3.1, BC4.4.1
GC0114 BC4.2.1, BC4.3.1, BC4.4.1
GC0114 BC4.2.1, BC4.3.1, BC4.4.1
GC0114 BC4.2.1, BC4.3.1, BC4.4.1