Supporting document to the GB LFC Block Operational Agreements developed in accordance with Article 119 of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation

05.04.2018

|  |
| --- |
| **Disclaimer**  This explanatory document is provided by NGET for information purposes only and accompanying the draft for stakeholder consultation of NGET proposal for the GB LFC Block Operational Agreements document in accordance with Article 119 of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system. |

Contents

[Introduction 3](#_Toc510530775)

[General information about the LFC Block Operational Agreements and the document for GB 4](#_Toc510530776)

[Subject matter and scope 4](#_Toc510530777)

[Governance and implementation within GB 4](#_Toc510530778)

[Methodologies from Article 119 that are subject to National Regulatory Authority (OFGEM) approval. 5](#_Toc510530779)

[Timeline for the initial LFCBOA development process 5](#_Toc510530780)

[Revisions to the LFCBOA for GB 6](#_Toc510530781)

[TITLE 2 - Explanatory text to accompany each agreement Article in the LFCBOA document that is subject to NRA approval 7](#_Toc510530782)

[LFCBOA Article 3 - SOGL Article 119(c) - “ramping restrictions for active power output in accordance with SOGL Article 137(3) and (4);” 7](#_Toc510530783)

[LFCBOA Article 4 - SOGL Article 119(h) - “the FRR dimensioning rules in accordance with SOGL Article 157(1);” 7](#_Toc510530784)

[LFCBOA Article 5 - SOGL Article 119(q) - “coordination actions aiming to reduce the Frequency Restoration Control Error as defined in SOGL Article 152(14);” 7](#_Toc510530785)

[LFCBOA Article 6 - SOGL Article 119(r) - “measures to reduce the Frequency Restoration Control Error (FRCE) by requiring changes in the active power production or consumption of power generating modules and demand units in accordance with SOGL Article 152(16).” 8](#_Toc510530786)

[TITLE 3 - Explanatory text to accompany each Article in the LFCBOA document that is not subject to NRA approval 9](#_Toc510530787)

# Introduction

1. The Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter "**SOGL**") was published in the official Journal of the European Union on 25 August 2017 and entered into force on 14 September 2017. The SOGL sets out guidelines regarding requirements and principles concerning operational security, as well as the rules for determining common load-frequency control processes and control structures and to maintaining a frequency quality level of the synchronous area.
2. Article 119 of SOGL requires the development of LFC Block Operational Agreements (hereafter "**LFCBOA**") for Great Britain by 12 months after entry into force. Those elements of the LFCBOA also referenced in Article 6(3) of the SOGL are subject to public consultation in accordance with Article 11 of the SOGL, prior to NRA approval.
3. The supporting document has been developed in recognition of the fact that the LFCBOA, which will become a legally binding document after NRAs' approval, inevitably cannot provide the level of explanation, which some parties may desire. Therefore, this document aims to provide interested parties with greater descriptive information and explanation of the methodology text contained in the LFCBOA.

# General information about the LFC Block Operational Agreements and the document for GB

## Subject matter and scope

1. The LFC Block Operational Agreement (LFCBOA) for Great Britain contains:
   1. Title 2: Those Articles referenced from both 119 and 6(3). These are subject to OFGEM approval and public consultation from Article 11.
   2. Title 3: Those Articles referenced in Article 119 but not found in Article 6 or 11. These Articles are not subject to either OFGEM approval or public consultation.

## Governance and implementation within GB

1. OFGEM is the sole competent National Regulatory Authority (NRA) for the LFCBOA of Great Britain.
2. OFGEM determined in the GB TSO responsibility mapping document, that Article 119 is the sole responsibility of the electricity system operator, NGET, in GB to draft.
3. The SOGL determines that there are two paths for approvals in the LFCBOA (Article 119).
   1. Those agreements from SOGL Article 119 developed by NGET for GB which are referenced in SOGL Article 6(3) concerning NRA approval are subject to a public consultation from SOGL Article 11 and then NRA (OFGEM) approval. These are contained in Title 2 of the LFCBOA document (see the next section for a list);
   2. Those agreements from SOGL Article 119 not requiring OFGEM approval or public consultation will be drafted by NGET. These agreements are found in Title 3 of the LFCBOA document.
   3. The LFCBOA document will be published at the end of the drafting and approval process according to Articles 183, 184 on the ENTSO-E website.
4. Whilst the LFCBOA includes agreements specific to the security considerations of exchanged and shared services via HVDC interconnectors with other LFC Blocks, these agreements only consider the GB implications on security and effective operation of the Load Frequency Control Structure and not the needs of other LFC Blocks. When those agreements, relative to the exchange and sharing of reserves between LFC Blocks in different synchronous areas, are subsequently drafted the rules and limits will need to consider the combined effect of the obligations and limitations of all agreements of all the relevant LFCBOAs.

## Methodologies from Article 119 that are subject to National Regulatory Authority (OFGEM) approval.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Methodologies, conditions and values included in the LFCBOA in SOGL Article 119 referenced in Article 6(3) thus requiring OFGEM approval:   |  |  | | --- | --- | | SOGL Article ref | SOGL Article 119 text | | 119(c); 6(3)(e)(i) | ramping restrictions for active power output in accordance with Article 137(3) and (4); | | 119(h); 6(3)(e)(iv) | the FRR dimensioning rules in accordance with Article 157(1); | | 119(q); 6(3)(e)(ii) | coordination actions aiming to reduce FRCE as defined in Article 152(14); | | 119(r); 6(3)(e)(iii) | measures to reduce FRCE by requiring changes in the active power production or consumption of power generating modules and demand units in accordance with Article 152(16); | |

## Timeline for the initial LFCBOA development process

1. According to SOGL Article 119(1), the agreement text drafting must be completed and submitted to the NRA by SOGL EIF+12months, 14th September 2018;
2. For those Articles referenced in SOGL Article 6(3), SOGL Article 11 states that these must also undergo a public consultation which must be open for at least 1 month (to be conducted from 5th April to 18th May 2018 for GB);
3. SOGL 6(7) states that the NRA will take no longer than 6 months to issue its decision on the TSO proposed LFCBOA text. (SOGL EIF+18months);
4. SOGL Article 119(2) specifies that the TSO must conclude any required revisions to the LFCBOA by 1 month after the NRA has issued its opinion on the document (SOGL EIF+19months);
5. SOGL Article 184 specifies that the LFCBOA must be notified to the NRA or where applicable other relevant NRAs (no deadline set by SOGL);
6. SOGL Article 119(2) specifies that the LFCBOA will enter into force no later than 3-months after the proposed text has been approved by the NRA (SOGL EIF+21months);
7. SOGL Article 8 specifies that all terms and conditions or methodologies must be published after approval or following their specification where no approval is required unless the confidentiality clause 12 applies (propose alignment with the timescale prescribed for the Synchronous Area Operational Agreement document i.e. publication 1-week after entry into force).

## Revisions to the LFCBOA for GB

1. The process of changing these agreements depends on whether they are subject to NRA approval or not.
   1. Those items in Title 2 of the LFCBOA requiring OFGEM approval, for which a revision is desired, require review by the NRA according to SOGL Article 7.
   2. Those items in Title 3 of the LFCBOA not requiring OFGEM approval, for which a revision is desired, will be amended and published by NGET.

# TITLE 2 - Explanatory text to accompany each agreement Article in the LFCBOA document that is subject to NRA approval

## LFCBOA Article 3 - SOGL Article 119(c) - “ramping restrictions for active power output in accordance with SOGL Article 137(3) and (4);”

1. Synchronised behaviour of market participants such as changes in power output between settlement periods across generators and interconnectors can cause large imbalances between generation and demand over short periods of time.
2. On occasion it is necessary to restrict the ramp rate of these parties when sufficient reserves are not available to manage these large imbalances.

## LFCBOA Article 4 - SOGL Article 119(h) - “the FRR dimensioning rules in accordance with SOGL Article 157(1);”

1. Frequency Restoration Reserves [FRR] are needed to recover system frequency after a secured event.
2. NGET must ensure that there is the right level of FRR procured to meet the time varying requirement. NGET determines in advance the FRR requirement across the range of potential system conditions using statistical and mathematical models which are regularly reviewed. Using this predetermined range of requirements the ENCC study the prevalent system conditions and select the relevant requirement. This is then regularly updated to reflect changes in system conditions and drivers all the way through to real time.
3. FRR requirements vary according to; system demand, system inertia, the largest potential loss of infeed and demand and prevailing system conditions. As a result of Network configuration/congestion and other factors may dictate that FRR is not held on credible losses of infeed and demand.
4. A baseline of Balancing Services for FRR is procured ahead of real time where they can demonstrate an expected cost saving against mandatory services. This includes the monthly tenders for dynamic and static Firm Frequency Response (FFR), and other optional contracts.
5. As we approach real time, NGET makes an assessment on the basis of system operability and economics of the appropriate balance between actively managing the magnitude of credible losses of infeed and demand, the amount of system inertia and the requirement for FRR.

## LFCBOA Article 5 - SOGL Article 119(q) - “coordination actions aiming to reduce the Frequency Restoration Control Error as defined in SOGL Article 152(14);”

1. This Article does not apply in GB because there is a single LFC Area in a single LCF Block within GB and hence no other TSO to coordinate actions with within the GB synchronous area.

## LFCBOA Article 6 - SOGL Article 119(r) - “measures to reduce the Frequency Restoration Control Error (FRCE) by requiring changes in the active power production or consumption of power generating modules and demand units in accordance with SOGL Article 152(16).”

1. The Frequency Restoration Control Error is the MW imbalance relative to the frequency deviation.
2. Within GB, NGET makes best use of the tools it has available to it in order to ensure that frequency quality and maintaining the dimensioning requirement of FCR and FRR.
3. Under normal balancing conditions the Frequency Restoration Control Error can be managed using standard services from BM and ancillary service providers. This includes dynamic and static frequency response, fast reserve, STOR and bids and offers in the balancing mechanism.
4. In the event that the standard set of services is insufficient such as tight margin conditions or multiple plant failures NGET would issue the appropriate system warnings to allow access to additional tools. The system warnings are ‘Electricity Margin Notice’, ‘High Risk of Demand Reduction’, ‘Demand Control Imminent’ and ‘Risk of System Disturbance’. Also included in this category is the ‘System Negative Reserve Active Power Margin’ notice. These tools allow NGET to issue Emergency Instructions on any connected and controllable demand, generation or interconnector unit. This is outlined in the GB Grid Code section BC.2.9.

# TITLE 3 - Explanatory text to accompany each Article in the LFCBOA document that is not subject to NRA approval

|  |
| --- |
| *Placeholder / Notice: The remaining explanatory statements relating to the LFCBOA Articles will be inserted in this section prior to completion of this document by September 2018.* |