nationalgridESO

Intermediate
GB Synchronous Area + LFC Block Operational Methodology

Revision History

V1.0	**14.09.2018**	**NGET proposal for OFGEM approval**
V2.0	**14.05.2019**	**NGET proposal for OFGEM approval**

Disclaimer
This document, provided by the NGESO, is the proposal for the GB Synchronous Area Operational Methodologies in accordance with Article 118 and GB Load Frequency Control Block Operational Methodologies in accordance with Article 119 of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation.

These SOGL methodologies remain in force until such time as they are superseded, once the elements of 118 and 119 are encoded into GB electricity codes and their subsidiary documents.

Whereas

1. Articles 118 and 119 of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter referred to as “SOGL”) require the creation of Synchronous Area and LFC Block Operational Agreements (hereafter referred to as the "OA") .
2. The Electricity System Operator (ESO) is the Transmission System Operator (TSO) responsible for meeting the Frequency Quality and Defining Parameters and Load Frequency Control within GB.
3. On 14 September 2017, the GB regulatory authority, OFGEM, published a decision, assigning TSO obligations in Articles 118 and 119 of SOGL to the GB electricity system operator (the “ESO”). The license to perform the role of the ESO in GB is assigned to the “National Grid Electricity System Operator Limited” (NGESO).
4. Following the initial submission of methodology texts on 14th September 2018, OFGEM requested an amendment based on the fact that they did not have the correct regulatory rights to approve certain articles within the initial texts.
5. NGESO, in reply to the amendment request pointed out that there were three categories of articles in 118 and 119. The first did not require approval by OFGEM. The second were already encoded in either the SQSS or the Grid Code and so had already been approved by OFGEM. Finally, there was a small number of articles that required approval by OFGEM that were not in either the SQSS or Grid Code.
6. NGESO proposes to include this final category in the SQSS or Grid Code but is creating this intermediate methodology so that this small number of articles can come into force ahead of the usual SQSS and Grid Code processes. Once changes have been made in SQSS and the Grid Code this intermediate methodology will no longer apply.
7. In addition, NGESO has provided a mapping showing how articles 118 and 119 are mapped to existing national codes.
8. This document is an intermediate methodology for the synchronous area of Great Britain, developed by the GB electricity system operator (ESO).
9. This intermediate methodology takes into account the general principles and goals set in the Regulation (EU) 2017/1485 establishing a guideline on electricity transmission system operation (hereafter referred to as “SOGL Regulation”);
10. In accordance with Article 6 (6) of the SOGL, the expected impact of the intermediate methodology on the objectives of the SOGL is described below:
    a. This intermediate methodology is expected to have a positive impact on determining common operational security requirements and principles by introducing a harmonised framework for frequency control.
    b. This intermediate methodology is expected to have a positive impact on determining common interconnected system operational planning principles by establishing common principles for all interconnectors for the limits on the exchange and sharing of Frequency Containment Reserves (FCR), Frequency Replacement Reserves (FRR) and Replacement Reserves (RR);

c. This intermediate methodology is expected to have a positive impact on determining the common load-frequency control processes and control structures which are defined in this document;

d. This intermediate methodology is expected to have a positive impact on ensuring the conditions for maintaining operational security throughout the Union. It does this at a GB level by establishing the Frequency Targets and Frequency Restoration Control Targets that the ESO must operate to. The intermediate methodology contributes to cross-border security by determining how the ESO will determine what limits should be applied to the sharing and exchange of FCR, FRR and RR between the GB Synchronous Area and other Synchronous Areas;

e. This intermediate methodology is expected to have a positive impact on ensuring the conditions for maintaining a frequency quality level of all synchronous areas throughout the Union, since it defines frequency quality standards the ESO must endeavour to maintain, the Basic Structure of control processes and methodologies defining procedures necessary to recover frequency quality when the system is no longer in a normal state;

f. This intermediate methodology is considered to have a positive impact on promoting the coordination of system operation and operational planning through the promotion of sharing and exchange of reserves and ensuring security by setting secure limits to sharing and exchange;

g. This intermediate methodology is considered to make a positive contribution towards ensuring and enhancing the transparency and reliability of information on transmission system operation through the publication of information related to reserve capacity requirements and cross-border reserve sharing and exchange;

h. This intermediate methodology is considered to make a positive contribution towards the efficient operation and development of the electricity transmission system and electricity sector in the Union by promoting effective operation of the load frequency control processes and effective and efficient use of reserves.

SUBMIT THE FOLLOWING ‘INTERMEDIATE SYNCHRONOUS AREA OPERATIONAL METHODOLOGIES’ AND ‘LOAD FREQUENCY CONTROL BLOCK OPERATIONAL METHODOLOGIES’ PROPOSAL TO THE GB REGULATORY AUTHORITY, OFGEM:

Title 1

General Provisions

Definitions and interpretation

1. For the purposes of this intermediate methodology, the terms used shall have the meaning of the definitions and references included in the SOGL, Article 3.
2. In this document, unless the context requires otherwise:

   a) the singular indicates the plural and vice versa;

   b) any reference to legislation, regulations, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force.
3. The Regulatory Authority, shall be taken to mean OFGEM, the sole competent National Regulatory Authority for these GB specific regulations, unless otherwise specified within the Articles themselves;
4. The term Electricity System Operator (ESO) or GB ESO is used in this document to mean the TSO within GB which has the responsibility to meet the Frequency Quality and Defining Parameters under SOGL Part IV, Title 2 and also with responsibilities to define and operate the Load Frequency Control Structure under SOGL Part IV, Title 3. On 14 September 2017, the GB regulatory authority, OFGEM, published a decision assigning TSO obligations in Article 119 of SOGL to the GB electricity system operator (the “ESO”). The entity licensed to perform the role of the ESO in GB is the National Grid Electricity System Operator Limited;

Title 2

Synchronous area operational agreement

Article 1

Additional properties of FCR (Article 118 (1) (b) SOGL)

1. All technical properties for GB services, that make up the provision of Frequency Containment Reserves, are specific to those services and no common additional properties are defined here. Individual technical requirements for GB services are published on the ESO's website and used as part of the prequalification process for those GB services.

Article 2

For the GB synchronous areas, the methodology to determine the minimum provision of reserve capacity on FCR (Article 118 (1) (y) SOGL)

1. The ESO makes sure there is sufficient FCR capacity in GB to meet the dimensioning rules in Article 2.
2. The minimum amount of FCR capacity provided from within GB is determined as follows: The ESO looks at the overall requirements for FCR as defined by the dimensioning rules as stipulated in paragraph 1, and subtracts the maximum amount of FCR exchange and sharing that could be accommodated from other synchronous areas, as per paragraph 3, to establish the minimum provision of reserve capacity of FCR that must be provided within the GB synchronous area.
3. The ESO determines the limits on the amount of FCR exchange and sharing that could be accommodated from other synchronous areas by considering the following:
    a. Whether sharing of FCR can be accommodated by the ESO under expected system conditions whilst complying with NETS SQSS;
    b. The ability to transfer FCR between synchronous areas;
    c. To consider any loss of provision of FCR during a reference incident as defined by SOGL Article 153 (2)(b)(ii);
    d. Seek minimum cost solution of meeting GB FCR and therein the sharing of FCR, that could be possible subject to meeting points a-c;
    e. The risk of the probability and impact of FCR short falls that could arise due to exchange and sharing.
4. Market parties will be made aware of the FCR capacity that the ESO has determined through publications on the internet in accordance with SOGL Article 187. The amounts of

FCR shared or exchanged with other Synchronous Areas will be published on the ENTSO-E market transparency platform website in accordance with SOGL Article 190.

Article 3

The methodology to determine limits on the amount of exchange of FRR between synchronous areas and the methodology to determine limits on the amount of sharing of FRR between synchronous areas (Article 118 (1) (z) SOGL)

1. The ESO determines the maximum amount of FRR sharing and exchange that could be accommodated from other synchronous areas by considering the following:
    a. Whether sharing or exchange of FRR can be accommodated by the ESO under expected system conditions whilst complying with NETS SQSS;
    b. The ability to transfer FRR between synchronous areas;
    c. To consider any loss of provision of FRR during a reference incident as defined by SOGL Article 157 (2)(d);
    d. Seek minimum cost solution of meeting GB FRR and therein the sharing or exchange of FRR, that could be possible subject to meeting points a-c.
    e. The risk of the probability and impact of FRR short falls that could arise due to sharing.
2. Market parties will be made aware of the FRR capacity that the ESO has determined through publications on the ENTSO-E market transparency platform website in accordance with SOGL Article 188. The amounts of FRR shared or exchanged with other Synchronous Areas will be published on the internet in accordance with SOGL Article 190.

Article 4

The methodology to determine limits on the amount of exchange of Replacement Reserves between synchronous areas and the methodology to determine limits on the amount of sharing of Replacement Reserves between synchronous areas (Article 118 (1) (aa) SOGL)

1. The ESO determines the maximum amount of RR sharing and exchange that could be accommodated from other synchronous areas by considering the following:
    a. Whether sharing or exchange of RR can be accommodated by the ESO under expected system conditions whilst complying with NETS SQSS;
    b. The ability to transfer RR between synchronous areas;
    c. To consider any loss of provision of RR during a reference incident as defined by SOGL Article 160(3)(c);
    d. Seek minimum cost solution of meeting GB RR and therein the sharing or exchange of FRR, that could be possible subject to meeting points a-c.

e. The risk of the probability and impact of RR short falls that could arise due to sharing or exchange.

2. Market parties will be made aware of the RR capacity that the ESO has determined through publications on the ENTSO-E market transparency platform website in accordance with SOGL Article 189. The amounts of RR shared or exchanged with other Synchronous Areas will be published on the internet in accordance with SOGL Article 190.

TITLE 3

LFC block operational agreement

Article 5

Ramping restrictions for active power output (Article 119 (1) (c) SOGL)

1. Rules for ramping restrictions on the active power output of each HVDC interconnector between a LFC Block of another synchronous area and the GB LFC block, in accordance with SOGL Article 137(3):

a. The ESO, and the connecting TSOs supervising a LFC block of an HVDC interconnector shall have the right to determine common ramping restrictions in the form of ramping periods and/or maximum ramping rates and shall enter into agreement with the TSOs responsible for operating the interconnector, to determine the processes and mechanisms by which these restrictions will be put in place. These ramping restrictions shall not apply to imbalance netting, frequency coupling, cross-border activation of FRR or cross-border activation of RR. These ramping restrictions shall not apply to any service aimed at maintaining or returning one of the connected electricity systems to a normal system state. The common restriction shall also take into account the restrictions set in the GB synchronous area operational agreement in accordance with SOGL Article 137(1), if applicable;

b. The ramping restrictions for each interconnector shall be applied in a non-discriminatory manner. The ESO shall ensure alignment of ramping restrictions between all HVDC interconnectors linking the same two synchronous areas, taking into account the technical capabilities of each HVDC interconnector;

c. A summary of the ramping-restrictions to be applied to HVDC interconnectors connecting to the GB LFC Block, shall be published by the ESO on its website at least one week before the rules are enforced, in accordance with the obligations in SOGL Article 8;

d. The ESO, in order to prevent the GB LFC block from entering into an emergency state, may restrict equitably the ramp rates of GB interconnectors between GB and the same connecting synchronous areas, in coordination with the affected national TSOs and affected interconnector operators according to the terms referred to paragraph (a) of this Article;

e. Within 30 calendar days of an incident which restricted one or more of the HVDC interconnectors, under the process referred to in paragraph (d), the ESO shall prepare a report containing an explanation of the rationale, implementation and impact of this action and submit it to the relevant regulatory authority in accordance with Article 37 of Directive 2009/72/EC and neighbouring TSOs, and also make the report available to all significantly affected system users.

Title 3

Final Provisions

Timescale for implementation

1. The Articles in this OM DOCUMENT will enter into force immediately after approval by OFGEM.

Cessation of this methodology

1. Each Article in this OM document will cease to be in force with immediate effect when the relevant clause is implemented in either the SQSS or the Grid Code

Language

1. The reference language for this OM shall be English.