

Load Frequency Control Structure for Ireland and Northern Ireland

EirGrid TSO & SONI TSO proposal for
the determination of LFC blocks in
accordance with Article 141(2) of the
Commission Regulation (EU)
2017/1485 of 2 August 2017
establishing a guideline on electricity
transmission system operation

31st July 2018



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1. Introduction

1.1 Background

EirGrid plc in its role as the Transmission System Operator in Ireland and SONI Ltd in its role as the Transmission System Operator in Northern Ireland (hereafter referred to as the 'TSOs') jointly submit this proposal for the determination of Load Frequency Control blocks (hereafter referred to as 'LFC blocks determination') for approval by the National Regulatory Authorities (the Commission for the Regulation of Utilities in Ireland and the Utility Regulator in Northern Ireland) in accordance with Article 5 (1) and Article 6 (3) (g) establishing a guideline on electricity transmission system operation (hereafter referred to as 'SO GL'). The proposal relates to the synchronous area that spans Ireland and Northern Ireland (hereafter referred to as the 'Synchronous Area IE/NI').

The TSOs conducted a public consultation on the LFC blocks determination proposal. The consultation ran from 29th November 2017 and closed on the 8th January 2018. One response was received to the consultation and more information is provided on this in Section 2. The TSOs submitted their proposal to the NRAs for consideration and approval on 12 January 2018. On 27 June 2018, the National Regulatory Authorities directed the TSOs to amend the proposal. In accordance with SO GL Article 7(2) the necessary amendments have been incorporated within this final version.

1.2 Subject Matter and Scope

The scope of the LFC blocks determination proposal is to establish the LFC blocks, LFC areas and LFC monitoring areas for Synchronous Area IE/NI, while respecting the requirements set in Article 141(2) of the SO GL.

The determination of LFC blocks as specified in this proposal shall be considered as the common proposal of all TSOs within Synchronous Area IE/NI in accordance with Article 141(2) of SO GL Regulation.

1.3 Definitions and Interpretation

For the purposes of the LFC blocks determination proposal, terms used in this document shall have the meaning of the definitions included in Article 3 of the SO GL Regulation, of Regulation (EC) 714/2009, and of Directive 2009/72/EC.

In this LFC blocks proposal, unless the context requires otherwise:

- a) the singular indicates the plural and vice versa;

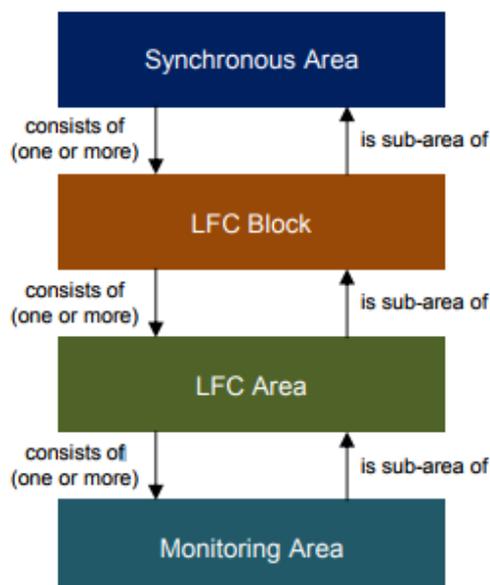
- b) the table of contents and headings are inserted for convenience only and do not affect the interpretation of this LFC blocks determination proposal; and
- c) any reference to legislation, regulations, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force.

1.4 Explanation of Hierarchy and General Principles

The LFC blocks determination proposal takes into account the general principles and goals set in the SO GL, the Commission Regulation establishing a network code on electricity emergency and restoration (NC E & R) as well as in the Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity (hereafter referred to as 'Regulation (EC) No 714/2009').

The goal of the SO GL is the safeguarding of operational security, frequency quality and the efficient use of the interconnected system and resources. For this purpose it sets requirements to determine the LFC blocks per synchronous area, which shall comply with the following requirements:

- a monitoring area corresponds to or is a part of only one LFC area;
- an LFC area corresponds to or is a part of only one LFC block;
- an LFC block corresponds to or is a part of only one synchronous area; and
- each network element is part of only one monitoring area, only one LFC area and only one LFC block.



1.5 Primary obligations of each element of the structure

The LFC blocks determination proposal takes into account the load-frequency control structure of each synchronous area in accordance with Article 139 of the SO GL. The operation of Load-Frequency Control processes is based on operational areas, where every area has their individual responsibilities with respect to the LFC structure. The superior structure is the synchronous area in which frequency is the same for the whole area. Synchronous Area IE/NI consists of one LFC Block, this LFC Block consists of one LFC Area, and this LFC Area consists of two Monitoring Areas. In Ireland and Northern Ireland the effect of the proposal is that the following roles will be carried out jointly by the TSOs:

- Each Monitoring Area has the obligation to calculate and measure the active power interchanges in real-time with other Monitoring Areas;
- A LFC Area has the additional obligation to fulfil the Frequency Restoration Quality target parameters by using the Frequency Restoration Process;
- A LFC Block is in addition responsible for the dimensioning of Frequency Restoration Reserve (FRR) and Replacement Reserve (RR) ;
- The Synchronous Area has the obligation to fulfil the Frequency Quality target parameters by using the Frequency Containment Process.

2. Amended Proposal

2.1 Synchronous Area IE/NI LFC blocks, LFC areas and monitoring areas

In accordance with the amendment request received from the National Regulatory Authorities, this amended proposal is that the synchronous area IE/NI shall consist of the LFC block, LFC area and monitoring areas set out in Table 1.

Country	TSO (full company name)	TSO (short name)	Monitoring Area	LFC Area	LFC Block
Ireland	EirGrid	EIRGRID	EIRGRID	EIRGRID + SONI	EIRGRID + SONI
Northern Ireland	System Operator for Northern Ireland	SONI	SONI	EIRGRID + SONI	EIRGRID + SONI

Table 1: List of Monitoring Areas, LFC Areas and LFC Blocks.

According to Article 6(6) of the SO GL, the expected impact of the LFC blocks determination proposal on the objectives of the SO GL has to be described.

The LFC blocks determination proposal generally contributes toward determining the common load-frequency control processes and control structures required by Article 4(1)(c) of the SO GL.

In particular, the LFC blocks determination proposal specifies the LFC blocks, LFC areas and Monitoring areas in Synchronous Area IE/NI, in line with requirement of Article 4(1)(c) of the SO GL.

The proposed LFC blocks structure reflects the current operational structure in place today and aligns with the existing System Operator Agreement between SONI and EirGrid and complies with both SEM and iSEM designs. For this reason the TSOs conclude that there will be no impact on the current arrangements in place in Synchronous Area IE/NI.

2.2 Interpretation: Status of North-South Tie Lines

It should be noted that a 'monitoring area' is defined in the SO GL as a "part of the synchronous area or the entire synchronous area, physically demarcated by points of measurement at interconnectors to other monitoring areas". The requirement in Article 141 (3) is that all TSOs of each monitoring area shall continuously calculate and monitor the real-time active power interchange of the monitoring area. Since the start of the Single Electricity Market (SEM) arrangements in November 2007, connections between the Ireland and Northern Ireland transmission systems have not been classed as interconnectors as the SEM does not schedule flows at the border. In order to comply with the National Regulatory Authorities' requirement for the establishment of individual Monitoring Areas for EirGrid and SONI control areas in this amended proposal, the TSOs will class the North South tie-lines as an interconnector for purposes of discharging the associated obligations as defined by the SO GL. The classification of North South tie-lines as an interconnector is limited to SOGL implementation and this classification will not be applied by EirGrid and SONI for the purposes of the other Network Codes or Regulations.

2.3 TSO Obligations Resulting from Establishment of Individual Monitoring Areas

As a result of the requirement to establish two individual Monitoring Areas, EirGrid and SONI shall calculate and measure the active power interchanges in real-time between Ireland and Northern Ireland. Since EirGrid and SONI already undertake these measures within the context of existing coordinated operational practices, no additional actions will be required.

The proposed structure sets out a framework which, once approved, will also be used by the TSOs to document a number of methodologies and processes associated with load frequency control that are mandated under SO GL. These methodologies will form part of or be referenced within the Synchronous Area Operational agreement and Load Frequency Block Operational agreement for Ireland and Northern Ireland. These agreements and several of the associated methodologies will be subject to approval by the National Regulatory as required by Article 6 of the SO GL.

The LFC blocks determination proposal contributes to the general objectives of the SO GL Regulation to the benefit of all market participants and electricity end consumers.

3. Next Steps

In accordance with Article 7(2) the National Regulatory Authorities shall decide on the amended terms and conditions or methodologies within two months following submission.

After the National Regulatory Authorities have approved the proposal or a decision has been taken by the Agency for the Cooperation of Energy Regulators (ACER) in accordance with Article 8(1) of the SO GL, the TSOs shall publish the LFC blocks determination proposal.

By 18 months after entry into force of SO GL, the TSOs shall implement the LFC blocks determination proposal.