

Load Frequency Control Structure for Ireland and Northern Ireland

EirGrid TSO & SONI TSO consultation
on a 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

29th November 2017



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1 Introduction

1.1 Background

This public consultation is a proposal for the determination of Load Frequency Control blocks (hereafter referred to as 'LFC blocks determination') in accordance with Article 6 (3) (g) and Article 141(2) of Commission Regulation (EU) 2017/1485 establishing a guideline on electricity transmission system operation (hereafter referred to as 'SO GL').

This public consultation document is produced jointly by 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').

This consultation applies to the synchronous area that spans Ireland and Northern Ireland (hereafter referred to as the 'Synchronous Area IE/NI').

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:

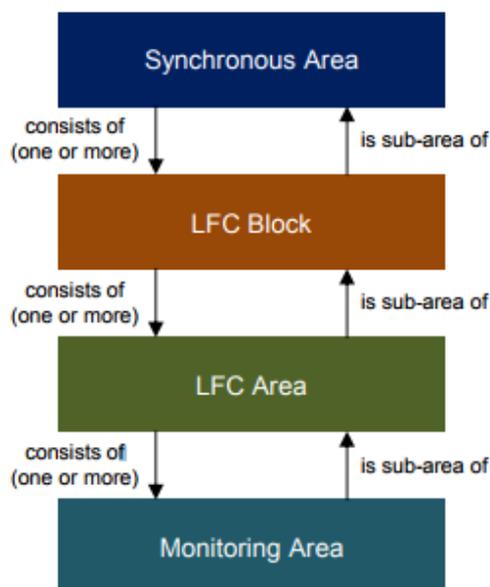
- a) the singular indicates the plural and vice versa;
- b) the table of contents and headings are inserted for convenience only and do not affect the interpretation of this LFC blocks determination proposal; and
- c) any reference to legislation, regulations, directive, order, instrument, code or any 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 one Monitoring area. In Ireland and Northern Ireland the effect of the proposal is that the following roles will be carried out jointly by the TSOs:

- A Monitoring Area has the obligation to calculate and measure the active power interchanges in real-time in that area;
- 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 Proposal

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

The TSOs proposal and preferred approach is that the synchronous area IE/NI shall consist of the LFC block, LFC area and monitoring area set out in Table 1.

Country	TSO (full company name)	TSO (short name)	Monitoring Area	LFC Area	LFC Block
Ireland	EirGrid	EIRGRID	EIRGRID + SONI	EIRGRID + SONI	EIRGRID + SONI
Northern Ireland	System Operator for Northern Ireland	SONI	EIRGRID + 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 structure proposed reflect the current structure in place today and are in line with the existing System Operator Agreement between SONI and EirGrid and comply with SEM and iSEM design. For this reason the TSOs conclude that there will be no impact on the current arrangements in place in Synchronous Area IE/NI.

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. In the context of the Single Electricity Market (SEM) the North South Interconnector is more like a tie line as the market does schedule flows on it. Therefore there are no interchanges within the Synchronous Area IE/NI to be monitored. Interchanges to Great Britain across the two High Voltage Direct Current Interconnectors are scheduled in SEM and jointly monitored by EirGrid and SONI in the two both control centres in Ireland and Northern Ireland.

The structure proposed sets out a framework which, once approved, will 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 will form part of a new Synchronous Area Operator agreement and a new Load Frequency Control agreement. These agreements will be subject to approval by the National Regulatory Authorities (the Commission for the Regulation of Utilities in Ireland and the Utility Regulator in Northern Ireland).

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 Consultation Process

The TSOs welcome feedback on the proposals in Section 2 of this this paper.

Respondents are also welcome to propose alternative arrangements to those put forward as the preferred approach by the TSOs. Respondents are asked to provide reasons for their proposals.

The consultation period ends on 8th January 2018.

Responses should be submitted to EirGrid at gridcode@eirgrid.com and/or SONI at gridcode@soni.ltd.uk before 5pm on **8th January 2018**.

4 Next Steps

Following the closure of the consultation period the TSOs shall consider any comments received and shall submit a LFC blocks determination proposal without undue delay to the National Regulatory Authorities (the Commission for the Regulation of Utilities in Ireland and the Utility Regulator in Northern Ireland).

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.
