

Nordic System Operation Agreement (SOA) – Annex Load-Frequency Control & Reserves (LFCR)

Appendix 1:

Regularly changing parameters 2023

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Approval date	Entry into force	Revision
26/06/2021	26/06/2021	Initial version
10/11/2021 (latest)	01/01/2022	Update with approved figures for 2022
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1 Introduction

This document is an appendix to the Annex Load-Frequency Control & Reserves (hereafter referred to as LFCR Annex) to the Nordic System Operation Agreement (hereafter referred to as "Nordic SOA"). This appendix provides an overview of approved parameters used by the Nordic TSOs that are changing at least once per year. The document is managed by SOA Maintenance Group who updates this document after an approval of the different parameters in RGN based on proposals from NOG. After the update of the appendix by SOA Maintenance Group, the document is uploaded to the ENTSO-E website, without (another) RGN approval.

The document does not describe the background or calculation of the parameter. For this, the document refers to the relevant article in the Nordic SOA LFCR Annex, the relevant instruction and/or to the specific decision in RGN.

2 Regularly changing parameters

This section lists the regularly changing parameters related to the Nordic Load Frequency Control and Reserves processes as described in Part IV of the System Operation Guideline (SOGL), the Nordic SOA LFCR Annex, the related NRA approved methodologies and the NOG approved operational instructions.

Table 1: FRCE target parameters for Nordic LFC block based on the maximum number of minutes outside the standard frequency range specified in section 3.4.2 of the Nordic SOA LFCR Annex (15 000 minutes/year outside the standard frequency range). (Calculated in accordance with SOGL art. 128, SOA/LFCR Annex section 3.4.3, Operational Instruction LFCR302)

Parameter	Value	Validity period	Approved by, on
FRCE target level 1, target (30% of 15 minutes time intervals per year may be outside this FRCE)	38 mHz	2023	RGN on 12-15-2022
FRCE target level 2, target (5% of 15 minutes time intervals per year may be outside this FRCE)	72 mHz	2023	RGN on 12-15-2022

Table 2: FRCE target parameters for Nordic LFC block based on the aimed frequency quality specified in section 3.4.2. (10 000 minutes/year outside the standard frequency range). (Calculated in accordance with SOGL art. 128, SOA/LFCR Annex section 3.4.3 of the Nordic SOA LFCR Annex, Operational Instruction LFCR302)

Parameter	Value	Validity period	Approved by, on
FRCE target level 1, target (30% of 15 minutes time intervals per year may be outside this FRCE)	34 mHz	2023	RGN on 12-15-2022
FRCE target level 2, target (5% of 15 minutes time intervals per year may be outside this FRCE)	64 mHz	2023	RGN on 12-15-2022

Table 3: Dimensioning of FCR and initial distribution of FCR (SOGL art. 153/154, SOA/LFCR Annex section 6.4.1 to 6.4.4, Operational Instructions LFCR601 and LFCR602)

Parameter	Value	Validity period	Approved by, on
Dimensioning Nordic FCR-N	600 MW	2023	RGN on 15-08-2019
Dimensioning Nordic FCR-D		Updated daily	
Initial distribution of FCR (both FCR-N and FCR-D)			
- Denmark/East (DK2)	3,06%	2023	RGN on 31-08-2022
- Finland	20,11%		
- Norway	38,38%		
- Sweden	38,45%		

Table 4: Dimensioning of FRR and initial distribution of FRR (SOGL art. 157, SOA/LFCR Annex section 7.4.2)

Parameter	Value	Validity period	Approved by, on
Dimensioning of mFRR	National TSOs' responsibility		
aFRR operating hours		Determined quarterly	
Dimensioning of aFRR	≥ 300MW	Determined quarterly	
Initial distribution of aFRR			
	Up	Down	
- Denmark/East (DK2)	13%	13%	Until changed by new RGN decision. Updated from startup Nordic aFRR CM 07-12-2022.
- Finland	15%	16%	
- Norway	46%	43%	
- Sweden	26%	28%	

Table 5: Dimensioning of FFR and initial distribution of FFR (SOGL art. 39, SOA/LFCR Annex section 13.4.3, Operational Instructions LFCR1301)

Parameter	Value	Validity period	Approved by, on
Dimensioning of FFR		Updated daily	
Sharing key for FFR			
- Denmark/East (DK2)	8%	Until changed by new RGN decision	RGN on 10-12-2020
- Finland	18%		
- Norway	39%		
- Sweden	35%		