

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

Appendix 1:

Regularly changing parameters 2025

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Approval date	Entry into force	Revision
26/06/2021	26/06/2021	Initial version
10/11/2021	01/01/2022	Update with approved figures for 2022
21/11/2022	01/01/2023	Update with approved figures for 2023
11/12/2023	01/01/2024	Update with approved figures for 2024
06/02/2025	01/01/2025	Update with approved figures for 2025. Inclusion of FRCE values for LFC areas. Inclusion of minimum risk levels in dimensioning of mFRR.

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 and 131.b, SOA/LFCR Annex section 3.4.3 and Operational Instruction LFCR302)

Parameter	Value	Validity period	Approved by
FRCE target level 1, target (30% of 15 minutes time intervals per year may be outside this FRCE)	38 mHz	2025	RGN on 11-12-2024
FRCE target level 2, target (5% of 15 minutes time intervals per year may be outside this FRCE)	72 mHz	2025	RGN on 11-12-2024

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 and 131.b, SOA/LFCR Annex section 3.4.3 of the Nordic SOA LFCR Annex and Operational Instruction LFCR302)

Parameter	Value	Validity period	Approved by
FRCE target level 1, target (30% of 15 minutes time intervals per year may be outside this FRCE)	34 mHz	2025	RGN on 11-12-2024
FRCE target level 2, target (5% of 15 minutes time intervals per year may be outside this FRCE)	64 mHz	2025	RGN on 11-12-2024

Table 3: FRCE target parameters for Nordic LFC areas based on the aimed frequency quality specified in section 3.4.2. (15 000 minutes/year outside the standard frequency range). (Calculated in accordance with SOGL art. 128 and 131.b, SOA/LFCR Annex section 3.4.3 of the Nordic SOA LFCR Annex and Operational Instruction LFCR302)

LFC Area	FRCE – level 1	FRCE – level 2	Validity period	Approved by
DK2	31 MW	77 MW	2025	RGN on 11-12-2024
FI	103 MW	196 MW		
NO1	62 MW	117 MW		
NO2	78 MW	148 MW		
NO3	59 MW	112 MW		
NO4	55 MW	105 MW		
NO5	57 MW	108 MW		
SE1	49 MW	92 MW		
SE2	67 MW	127 MW		
SE3	105 MW	198 MW		
SE4	46 MW	88 MW		

Table 4: FRCE target parameters for Nordic LFC areas 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 and 131.b, SOA/LFCR Annex section 3.4.3 of the Nordic SOA LFCR Annex and Operational Instruction LFCR302)

LFC Area	FRCE – level 1	FRCE – level 2	Validity period	Approved by
DK2	37 MW	69 MW	2025	RGN on 11-12-2024
FI	92 MW	174 MW		
NO1	55 MW	104 MW		
NO2	70 MW	131 MW		
NO3	53 MW	100 MW		
NO4	49 MW	93 MW		
NO5	51 MW	96 MW		
SE1	44 MW	82 MW		
SE2	60 MW	113 MW		
SE3	94 MW	176 MW		
SE4	41 MW	78 MW		

Table 5: 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
Dimensioning Nordic FCR-N	600 MW	2025	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 %	2025	RGN on 23-10-2024
- Finland	21 %		
- Norway	39 %		
- Sweden	37 %		

Table 6: Dimensioning of FRR and initial distribution of FRR (SOGL art. 157, SOA/LFCR Annex section 7.4.2)

Parameter	Value	Validity period	Approved by
Dimensioning of mFRR	National TSOs' responsibility		
aFRR operating hours		Determined frequently	
Dimensioning of aFRR	≥ 200MW	Determined frequently	
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.	RGN on 21-11-2022
- Finland	15 % 16 %		
- Norway	46 % 43 %		
- Sweden	26 % 28 %		

Table 7: 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
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 %		

Table 8: Agreed minimum risk level for dimensioning of mFRR.

Upwards	Downwards	Validity period	Approved by
90 %	80 %	Until changed by new RGN decision	RGN