

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

Appendix 1:

Regularly changing parameters 2026

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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.
13/06/2025	01/08/2025	New FFR sharing key between TSOs
13/03/2026	01/01/2026	Update with approved figures for 2026

# 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). Nordic TSOs have agreed to aim for not more than 10 000 minutes/year outside of the standard frequency range.**

Parameter	Value	Validity period	Approved by
FRCE target level 1, target (30% of 15 minutes time intervals per year may be outside this FRCE)	41 mHz	2026	RGN on 13-03-2026
FRCE target level 2, target (5% of 15 minutes time intervals per year may be outside this FRCE)	78 mHz	2026	RGN on 13-03-2026

**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)	37 mHz	2026	RGN on 13-03-2026
FRCE target level 2, target (5% of 15 minutes time intervals per year may be outside this FRCE)	71 mHz	2026	RGN on 13-03-2026

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 3.4.4 of the Nordic SOA LFCR Annex and Operational Instruction LFCR302). Nordic TSOs have agreed to use the FRCE parameters for LFC areas for monitoring purposes only until full ACE based balancing is implemented in relevant LFC areas.

LFC Area	FRCE – level 1	FRCE – level 2	Validity period	Approved by
DK2	44 MW	83 MW	2026	RGN on 13-03-2026
FI	113 MW	214 MW		
NO1	65 MW	124 MW		
NO2	84 MW	159 MW		
NO3	66 MW	126 MW		
NO4	61 MW	116 MW		
NO5	63 MW	119 MW		
SE1	54 MW	103 MW		
SE2	74 MW	141 MW		
SE3	109 MW	208 MW		
SE4	48 MW	92 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 3.4.4 of the Nordic SOA LFCR Annex and Operational Instruction LFCR302).

LFC Area	FRCE – level 1	FRCE – level 2	Validity period	Approved by
DK2	39 MW	75 MW	2026	RGN on 13-03-2026
FI	102 MW	195 MW		
NO1	59 MW	113 MW		
NO2	76 MW	145 MW		
NO3	60 MW	115 MW		
NO4	55 MW	105 MW		
NO5	57 MW	108 MW		
SE1	49 MW	94 MW		
SE2	67 MW	128 MW		
SE3	99 MW	189 MW		
SE4	44 MW	84 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	2026	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 %	2026	RGN on 10-09-2025
- Finland	21 %		
- Norway	38 %		
- Sweden	38 %		

**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 <sup>1</sup>	≥ 200MW	Determined frequently	
Initial distribution of aFRR	Up Down		
- Denmark/East (DK2)	10 % 11 %	Until changed by new RGN decision.	RGN on 10-12-2025
- Finland	20 % 20 %		
- Norway	31 % 31 %		
- Sweden	39 % 38 %		

**Table 7: Dimensioning of FFR and initial distribution of FFR (SOGL art. 39, SOA/LFCR Annex section 13.4.1-13.4.4, Operational Instructions LFCR1301)**

Parameter	Value	Validity period	Approved by
Dimensioning of FFR		Updated daily	
Sharing key for FFR			
- Denmark/East (DK2)	3 %	Until changed by new RGN decision	RGN on 10-09-2025
- Finland	21 %		
- Norway	38 %		
- Sweden	38 %		

<sup>1</sup> The Nordic aFRR capacity market started 07.12.2022. The distribution of Nordic required volumes between TSOs are determined by statistics for imbalances after mFRR activations have taken place.

Table 8: Agreed minimum confidence interval for dimensioning of mFRR.

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