

ENERGY CRISIS IN THE ELECTRIC POWER SECTOR OF LATVIA

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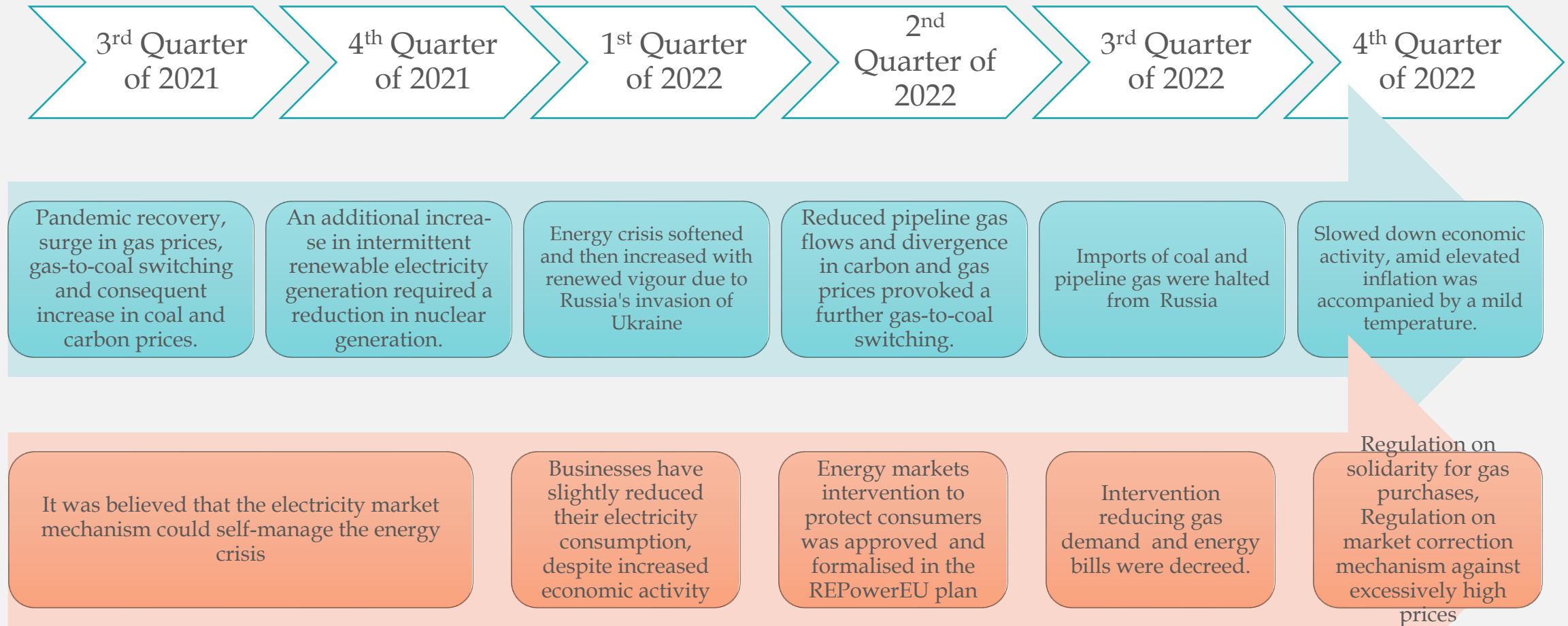
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INTRODUCTION: EVOLUTION of the ENERGY CRISIS



OBJECTIVE, KEY QUESTIONS AND DATA

The objective of this presentation is to specify the duration and phases of the energy crisis in the Latvia's electric power sector.

The study consecutively gives the answers on **the questions**:

- (i) where were the starting and ending point of the energy crisis in the Latvia's electricity market;
- (ii) what were the phases of the energy crisis and their duration;
- (iii) what was the distribution of electricity prices by the phases of the energy crisis;
- (iv) how the EU electricity markets were clustered by the impact of the energy crisis.

To identify the energy crisis in the electricity market, day-ahead electricity prices from the ENTSO-E Transparency Platform were used by bidding zones for the period 01.01.2021-01.09.2023.

METHODOLOGY AND SAMPLE

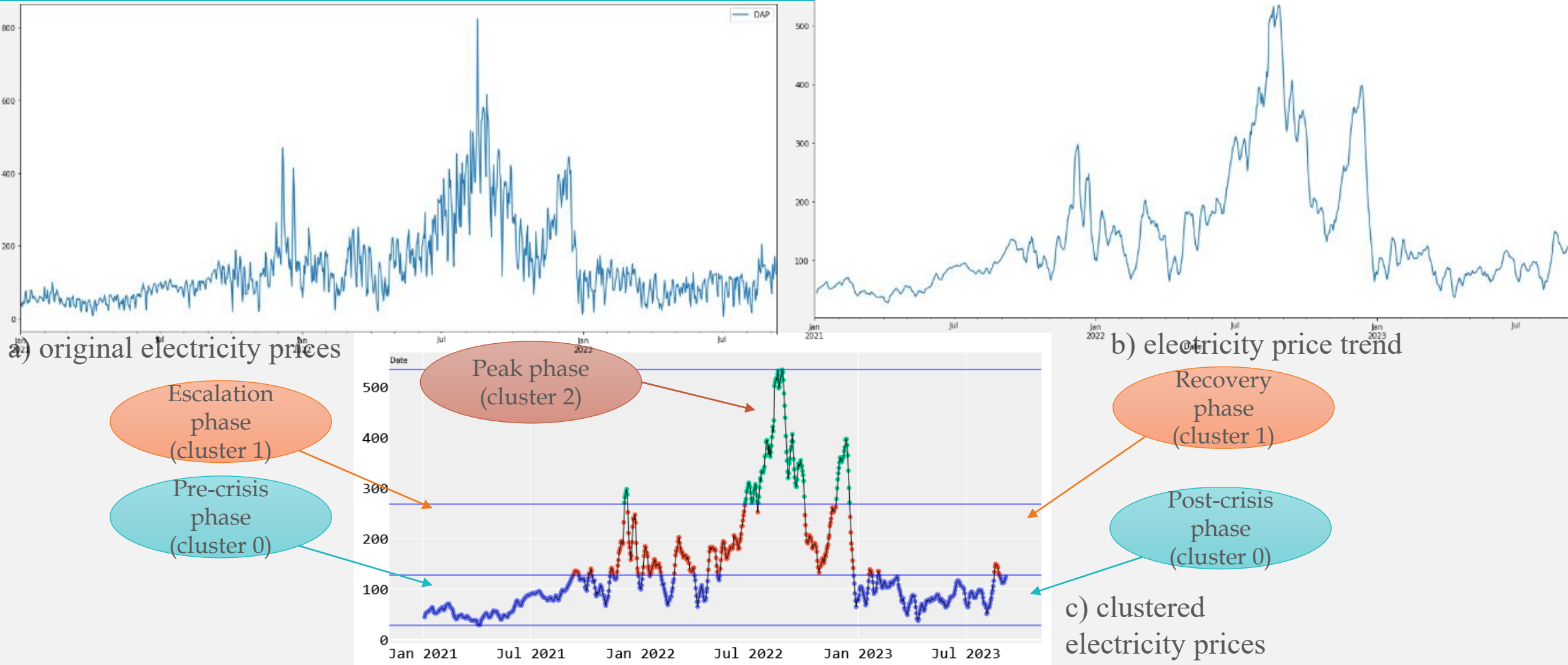


Figure 1. Identification of the energy crisis in the Latvia's

Descriptive statistics of electricity price over the phases of energy crisis in the Latvia's electric power sector in January 2021 – August 2023 (€/MWh).

Parameter	Pre-crisis	Energy crisis	including			Post-crisis
			escalation	peak	recovery	
Duration	01.01.2021-11.11.2021	12.11.2021-24.12.2022	12.11.2021-25.06.2022	26.06.2022-03.10.2022	04.10.2022-24.12.2022	25.12.2022-31.08.2023
Length, days	313	409	226	100	83	251
Mean	74.1	223.9	156.0	367.6	236.2	91.0
Std	27.7	107.9	47.1	78.9	79.0	23.1
Var%	39.0	48.2	30.4	21.5	33.4	25.1
First price	44.4	133.5	133.5	271.8	246.6	126.4
Last Price	125.3	141.8	265.6	283.1	141.8	111.9
Min	28.3	65.0	65.0	252.4	126.4	37.3
25%	49.9	145.6	124.1	307.3	179.7	75.1
50%	70.1	185.0	157.8	344.6	205.9	88.2
75%	92.4	300.3	182.0	396.4	287.2	106.2
Max	140.6	534.5	298.0	534.5	397.1	149.8

DIFFERENCES IN THE ENERGY CRISIS OF THE EU ELECTRICITY MARKETS

Table 3. Discovering the energy crisis in the electricity markets of EU member states

Country (bidding zone)	Crisis start	Peak start	Maximum reached	Recovery start	Crisis end
Austria (AT)	13/09/21 (140)	24/06/22 (293)	29/08/22 (639)	02/10/22 (263)	24/12/22 (145)
Belgium (BE)	12/09/21 (140)	23/06/22 (278)	27/08/22 (594)	30/09/22 (269)	24/12/22 (153)
Bulgaria (BG)	21/06/21 (167)	04/10/21 (314)	20/12/21 (588)	-	-
		28/06/22 (315)	30/08/22 (569)	30/09/22 (302)	22/12/22 (177)
Croatia (HR)	15/09/21 (147)	23/06/22 (302)	28/08/22 (668)	02/10/22 (283)	23/12/22 (157)
Czech Rep. (CZ)	04/10/21 (148)	14/07/22 (310)	28/08/22 (668)	29/09/22 (291)	14/02/23 (149)
Denmark (DK)	13/09/21 (140)	20/07/22 (309)	27/08/22 (606)	29/09/22 (266)	26/12/22 (143)
Estonia (EE)	14/11/21 (124)	09/07/22 (249)	16/08/22 (486)	11/09/22 (214)	25/12/22 (126)
Finland (FI)	23/11/21 (103)	09/07/22 (222)	25/08/22 (385)	20/12/22 (200)	25/12/22 (115)
			12/12/22 (389)		
Germany (DELU)	13/09/21 (138)	25/06/22 (284)	28/08/22 (590)	30/09/22 (270)	23/12/22 (149)
Greece (GR)	03/10/21 (163)	27/06/22 (308)	30/08/22 (583)	03/10/22 (298)	14/02/23 (167)
Hungary (HU)	03/10/21 (155)	28/06/22 (319)	28/08/22 (671)	30/09/22 (307)	23/12/22 (157)
Italy (UNP)	17/09/21 (165)	24/06/22 (339)	30/08/22 (701)	02/10/22 (331)	13/02/23 (167)
Latvia (LV)	12/11/21 (133)	26/06/22 (278)	27/08/22 (535)	04/10/22 (247)	24/12/22 (142)
Lithuania (LT)	12/11/21 (133)	26/06/22 (272)	27/08/22 (535)	04/10/22 (247)	24/12/22 (142)
Netherlands (NL)	12/09/21 (134)	26/06/22 (275)	26/08/22 (588)	02/10/22 (247)	24/12/22 (150)
Norway (NO1)	25/11/21 (128)	12/08/22 (275)	29/08/22 (560)	28/09/22 (260)	27/12/22 (122)
Norway (NO2)	25/11/21 (128)	20/07/22 (297)	29/08/22 (602)	28/09/22 (260)	26/12/22 (128)
Norway (NO3)	-	28/11/22 (174)	11/12/22 (306)	-	-
Norway (NO4)	-	26/11/21 (110)	29/11/22 (157)		
	-	27/11/22 (96)	12/12/22 (173)	-	-
Norway (NO5)	25/11/21 (128)	11/08/22 (266)	29/08/22 (560)	28/09/22 (260)	01/01/23 (118)
Poland (PL)	09/11/21 (106)	20/06/22 (186)	21/08/22 (347)	05/09/22 (173)	Not finished
Portugal (PT)	27/08/21 (114)	04/10/21 (201)	07/03/22 (416)	15/04/22 (181)	14/12/22 (119)
Romania (RO)	07/10/21 (177)	01/07/22 (317)	28/08/22 (665)	30/09/22	22/12/22 (177)
Slovakia (SK)	04/10/21 (158)	27/06/22 (306)	28/08/22 (662)	01/10/22 (295)	16/02/23 (152)
Slovenia (SL)	29/09/21 (155)	24/06/22 (311)	28/08/22 (667)	01/10/22 (301)	23/12/22 (157)
Spain (ES)	27/08/21 (114)	04/10/21 (201)	07/03/22 (417)	14/04/22 (187)	13/12/22 (118)
Sweden (SE1)	-	20/11/22 (160)	02/12/22 (320)	-	-
Sweden (SE2)	-	20/11/22 (160)	02/12/22 (320)	-	-
Sweden (SE3)	23/11/21 (97)	15/08/22 (226)	13/12/22 (398)	20/12/22 (193)	25/12/22 (107)
Sweden (SE4)	02/09/21 (108)	10/08/22 (278)	24/08/22 (407)		
		27/08/22 (258)	13/12/22 (398)	19/12/22 (232)	25/12/22 (107)

CLUSTERING EU ELECTRICITY MARKETS BY THE EVOLUTION OF THE ENERGY CRISIS

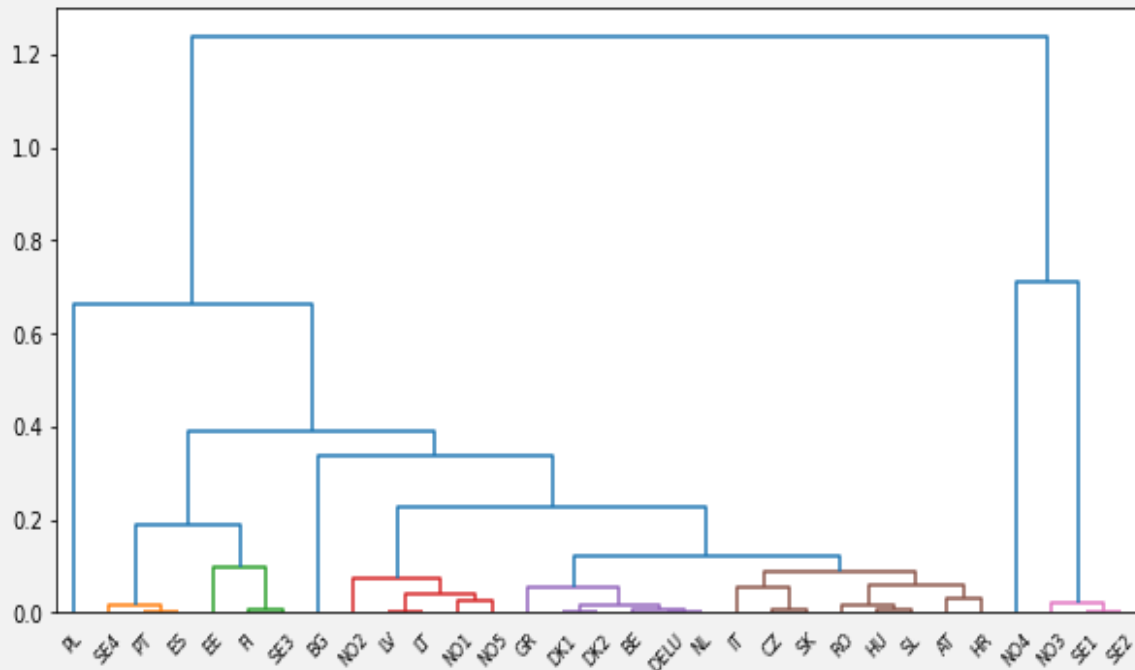


Figure 2. Dendrogram of the distribution of EU electricity markets according to the evolution of the energy crisis

Table 4. Results of clustering EU electricity markets by the evolution of the energy crisis ^a.

Cluster	Bidding zone	Crisis start, date	Length, days	Crisis end, date	Maximum price, €/MWh	Price range, %
1	PL	09.11.2021	Not finished	-	347	327
2	SE4, PT, ES	29.08.2021	475	17.12.2022	413	369
3	EE, FI, SE3	20.11.2021	400	25.12.2022	424	393
4	BG	21.06.2021	549	22.12.2022	588	352
5	NO2, LV, LT, NO1, NO5	19.11.2021	408	01.01.2023	558	430
6	GR, DK1, DK2, BE, DELU, NL	16.09.2021	473	01.01.2023	595	419
7	IT, CZ, SK, RO, HU, SL, AT, HR	26.09.2021	493	01.02.2023	668	428
8	NO4	27.11.2022	16	12.12.2022	173	180
9	NO3, SE1, SE2	22.11.2022	12	05.12.2022	315	192

^a Source: own calculations

Thank you for your
attention!

