SIDC

SIDC Algorithm monitoring Report July 2022



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Introduction

This document contains charts on the indicators defined by Methodology for the price coupling algorithm, the continuous trading matching algorithm and the intraday auction algorithm.

Indicator	Indicator name	Indicator Description	Indicator generation period
Performance indicators	Time for the execution of an Order	This indicator measures the time between the moment when an Order receives a timestamp from the system and the moment it is reported by the system as having been executed.	Monthly
	Rate of executed Orders Time for the execution of a Trade	This indicator measures the number of executed Orders divided by a certain amount of time. This indicator measures the time between the moment when an aggressor Order receives a timestamp from the system and the moment it is reported by the system as having concluded a Trade.	Monthly Monthly
	Rate of executed Trade	This indicator measures the number of executed Trades divided by a certain amount of time.	Monthly
	Time for the generation of Post- Coupling files	This indicator measures the time between the moment the system is triggered to produce its Post- Coupling output (after Gate Closure Time) and the moment it sends this Post-Coupling output.	Monthly
	Time for processing an Order Book update	For each Order Book update, this indicator measures the longest time lapse between the moment that an Order receives a timestamp from the system and the moment that the system sends the Order Book update comprising that Order.	Monthly
Indicators to describe the usage of	Total number of products	This indicator counts the number of available products in the Continuous Trading Matching Algorithm, as defined in Shared Order Book	Monthly
continuous SIDC algorithm products	Total number of daily submitted Orders per product and per Bidding Zone	This indicator counts the total number of submitted Orders on a daily basis	Monthly
	Total daily submitted Order volume per Bidding Zone	This indicator measures total submitted Order volume per Bidding Zone	Monthly

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Introduction

Indicator	Indicator name	Indicator Description	Indicator generation period
Indicator to describe the usage of Explicit Capacity Allocation	Total number of Explicit Capacity Allocation request	This indicator counts on a daily basis the total number changes of Cross-Zonal Capacity, which do not derive from a Trade in the Shared Order Book.	Monthly
Indicators to describe	Total number of NEMOs	This indicator counts the number of Member entities as defined in Shared Order Book	Monthly
the geographical extension of continuous SIDC	Total number of Delivery Areas	This indicator reports on daily Order Transactions and Trades since the first complete day of trading.	Monthly
	Total number of Market Areas	This indicator counts the number of Market Areas as defined in Capacity Management Module	Monthly
	Total number of Interconnectors	This indicator counts the number of Interconnectors as defined in Capacity Management Module	Monthly
	Total number of Bidding Zone borders	This indicator counts the number of Bidding Zone borders as defined in Capacity Management module	Monthly
Indicators to describe the network constraints	Total number of occurrences of Ramping Constraints on Interconnector level	This indicator counts the occurrences (per DC Interconnector, per year, per MTU) of the constraint being a limiting one for the available transmission capacities	Monthly
Indicators on the evolution of the	Total matched volume	Aggregated volume of all Trades within the Intraday Market Timeframe, made per contract per combination of Bidding Zones	Monthly
number of Matched Orders of each contract, and the	Total matched volumes – hours to delivery	This indicator counts the traded volumes, grouped per contract with same "delivery time start-end", per combination of Bidding Zones and grouped according to the hours left to delivery and aggregated per month	Half-yearly (H1, H2), reported monthly
corresponding total volume	Total number of Trades per contracts	This indicator counts the total number of Trades and per Bidding Zone	Half-yearly (H1, H2), reported monthly
	Total number of Trades per contract – hours to delivery	This indicator counts the total number of Trades, grouped per contract with same "delivery time start-end", per Bidding Zone and grouped according to the hours left to delivery.	Half-yearly (H1, H2), reported monthly



Introduction

Indicator	Indicator name	Indicator Description	Indicator generation period
Indicators on the evolution of the number of Explicit Capacity Allocations	Total number of Explicit Capacity Allocations	This indicator counts the total number of Explicit Allocations on a daily basis	Monthly
Indicators on the prices	Volume-Weighted Average Intraday Prices	Volume-weighted average price of all Trades per contract per Bidding Zone.	Half-yearly (H1, H2), reported monthly
	Volume-Weighted Average Intraday Prices-last trading hour	Volume-weighted average price of all Trades per contract per Bidding Zone corresponding to the last trading hour.	Half-yearly (H1, H2), reported monthly
	Bid-Ask Spread	Average bid-ask spread of the active orders per contract per Bidding Zone, calculated as defined in the algorithm monitoring procedures.	Half-yearly (H1, H2), reported monthly
Indicators on the capacities	ATC utilization rate	Ratio for each MTU calculated from the Allocated netted Intraday Capacity / offered Intraday capacity for each border in both directions	Monthly
Indicators on Net Positions	Net Positions	This indicator counts (calculates) the Net Positions for each Bidding Zone per MTU level.	Monthly



1. Indicators of the time needed to process an Order execution

Performance indicator		July 2022		
		Avg	Min	Мах
Time for the execution of an Order	Lower percentile 93%	26	16	39
(milliseconds)	Upper percentile 96,5%	35	23	48
Rate of executed Orders (number per day)		3 829 277	2 940 169	4 976 931
Time for the execution of a Trade *		-	-	-
Rate of executed Trade (number per hour)		9 656	566	18 576
Time for the generation of Post- Coupling files (milliseconds)		12 066	9 056	35 010
Time for processing an Order Book	Lower percentile 93%	30	21	41
update (milliseconds)	Upper percentile 96,5%	44	32	53

* This indicator measures the time between the moment that an order receives a timestamp from the system and the moment that it is reported by the system as executed. As of today, there is no separate value for the execution of a trade and for execution of an order. The parameter includes together order and trade execution (trades executions are a subset of order executions in the existing reporting.)

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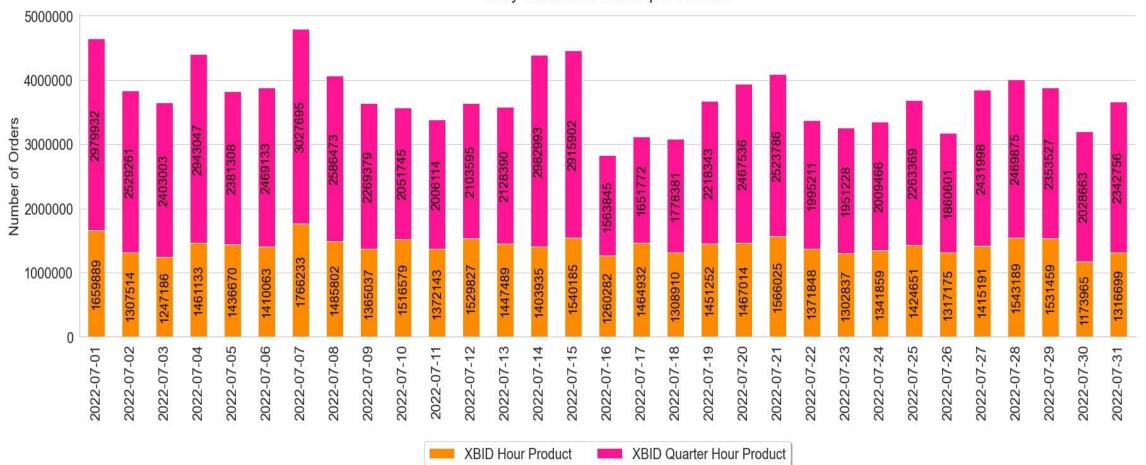
2. Indicators to describe the usage of continuous SIDC algorithm products (1/12)

Product name	Delivery area
XBID Hour Product	50HzT, AMP, APG, ELIA, RTE, TNG, TTG, TTN, NO1, NO2, NO3, NO4, NO5, SE1, SE2, SE3, SE4, FI, DK1, DK2, EE, LT, LV, PSE, PT, ES, MAVIR, CEPS, TEL, HOPS, ELES, ESO, TERNA
XBID Half Hour Product	50HzT, AMP, TNG, TTG, ELIA, RTE, TTN
XBID Quarter Hour Product	50HzT, AMP, APG, ELES, MAVIR, TEL, TNG, TTG, ELIA, TTN

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2. Indicators to describe the usage of continuous SIDC algorithm products (2/12)



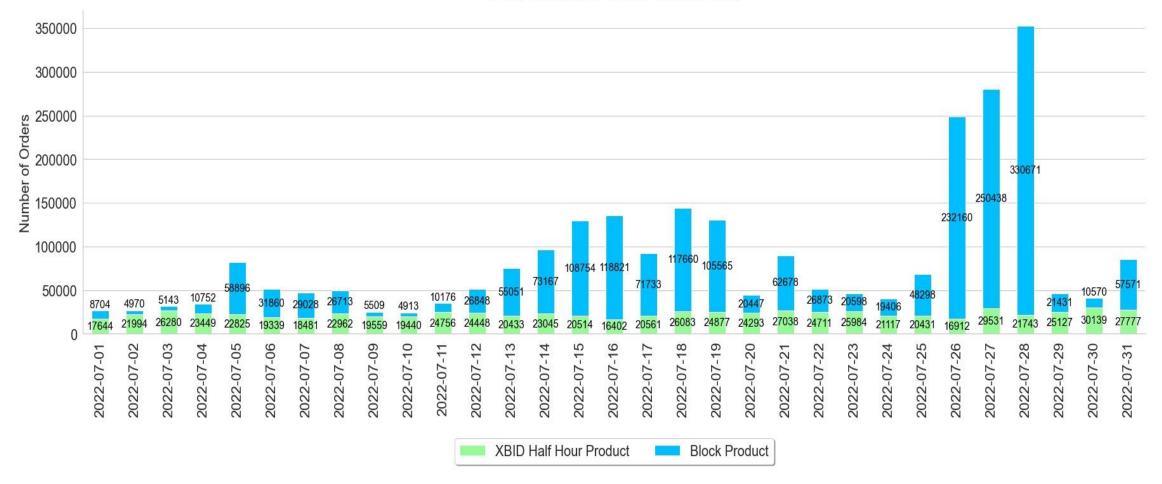
Daily submitted Orders per Product

9



2. Indicators to describe the usage of continuous SIDC algorithm products (3/12)

Daily submitted Orders per Product





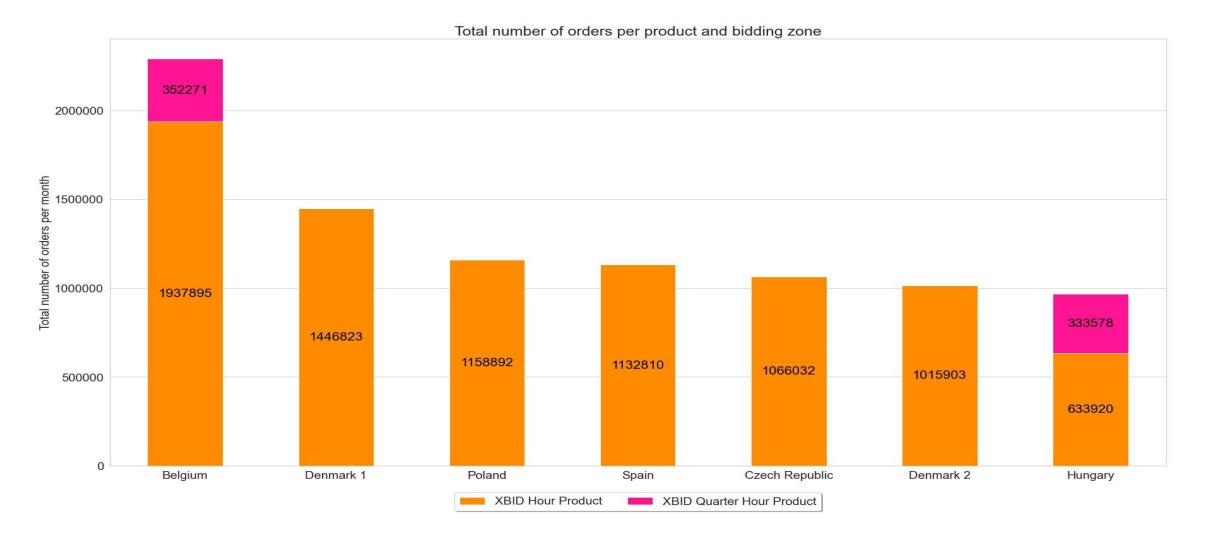
2. Indicators to describe the usage of continuous SIDC algorithm products (4/12)



Coupling



2. Indicators to describe the usage of continuous SIDC algorithm products (5/12)

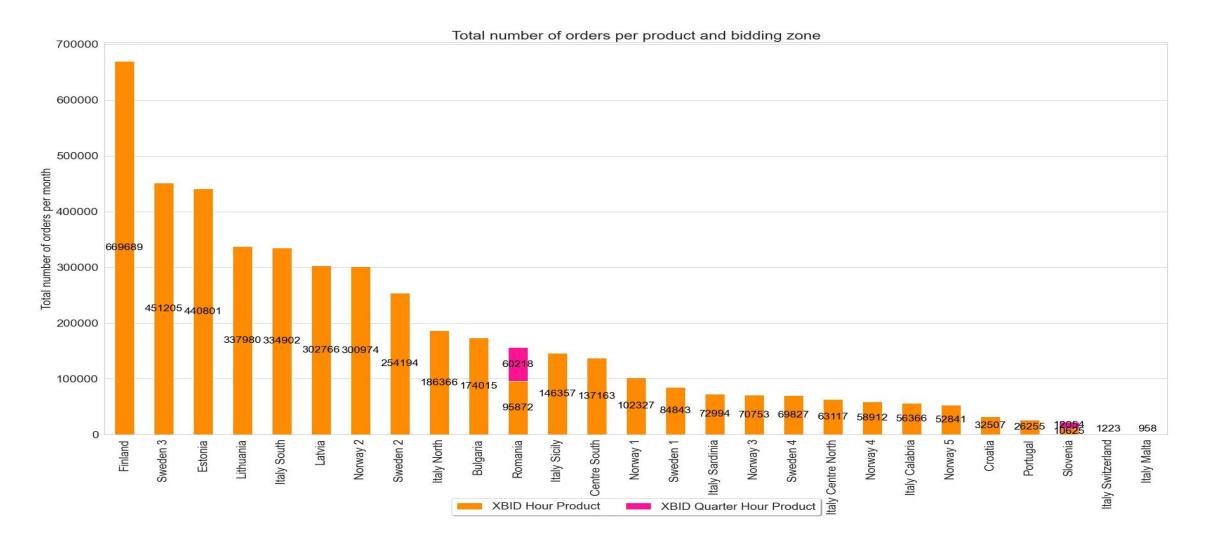


Coupling



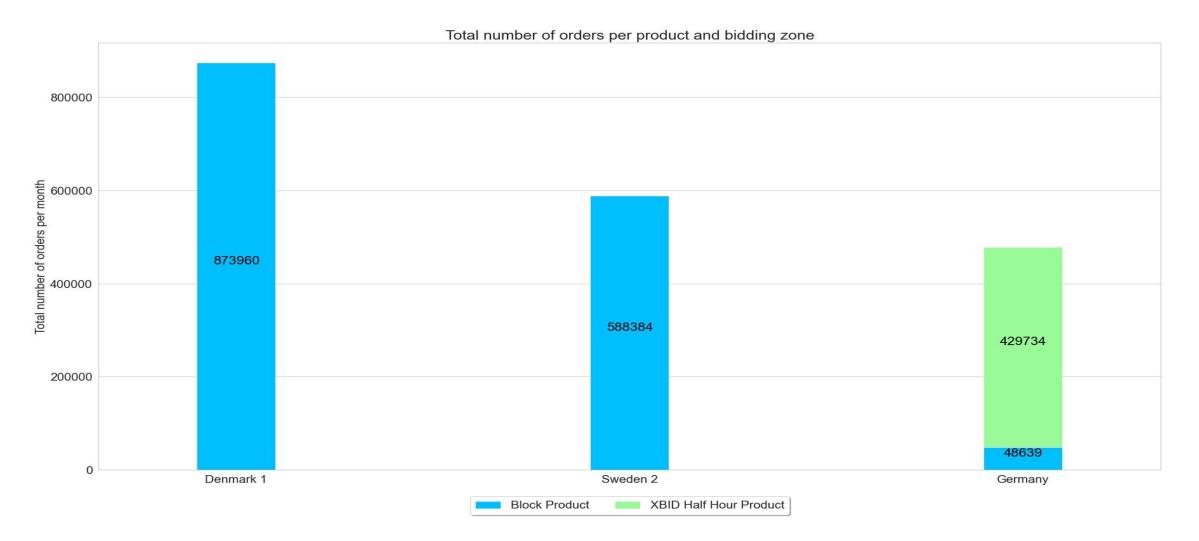


2. Indicators to describe the usage of continuous SIDC algorithm products (6/12)





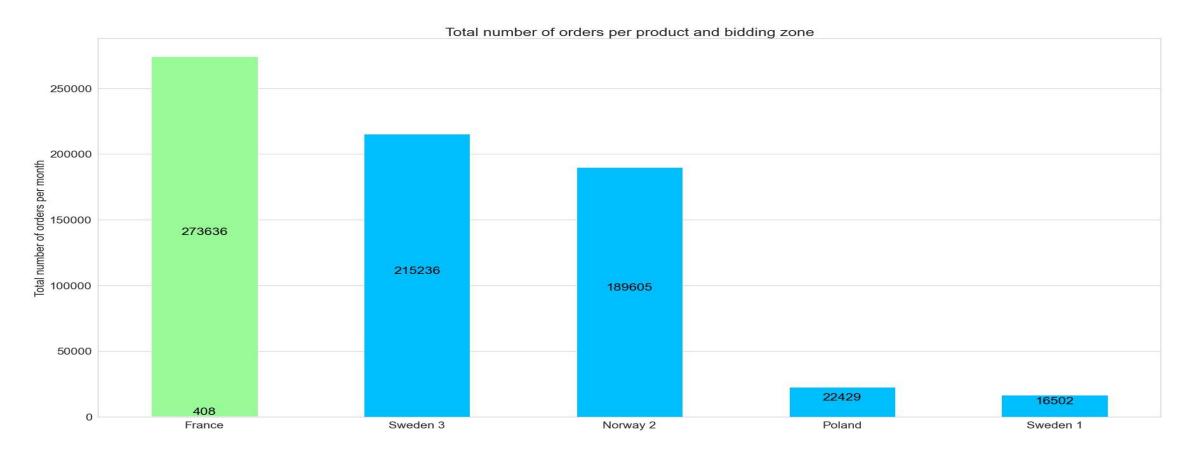
2. Indicators to describe the usage of continuous SIDC algorithm products (7/12)



Coupling



2. Indicators to describe the usage of continuous SIDC algorithm products (8/12)



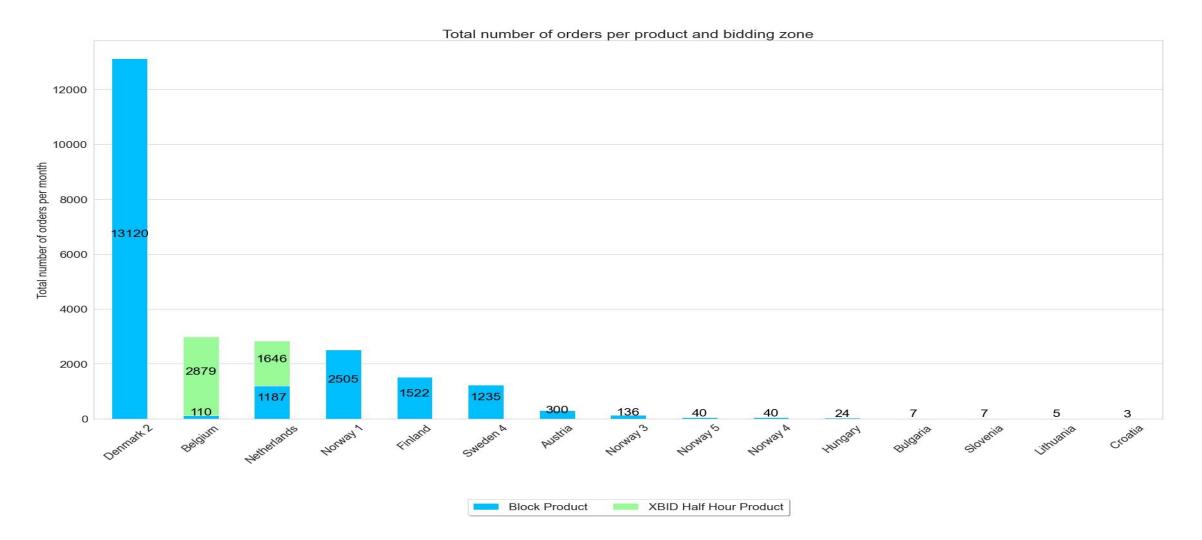
SIDC Single Intraday Coupling

Block Product MBID Half Hour Product



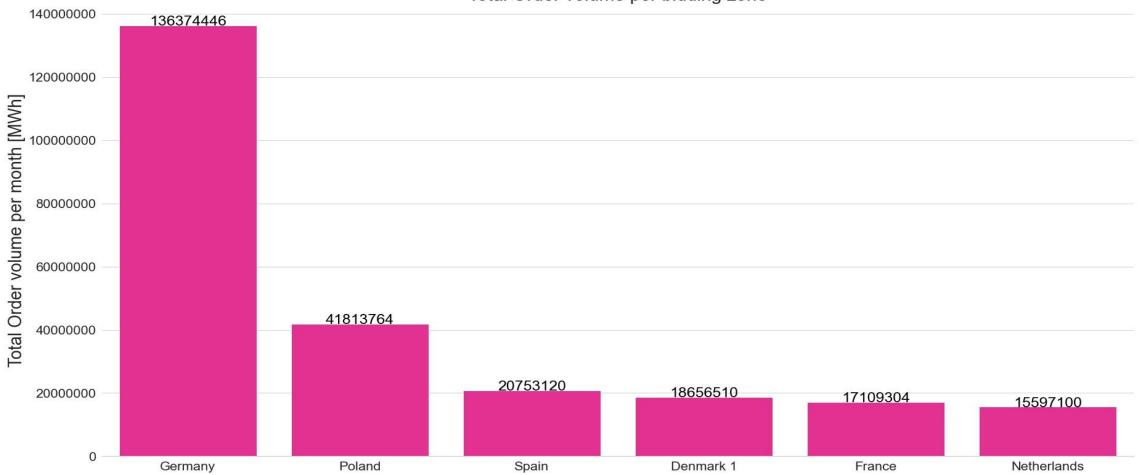
SIDC

2. Indicators to describe the usage of continuous SIDC algorithm products (9/12)



SIDC

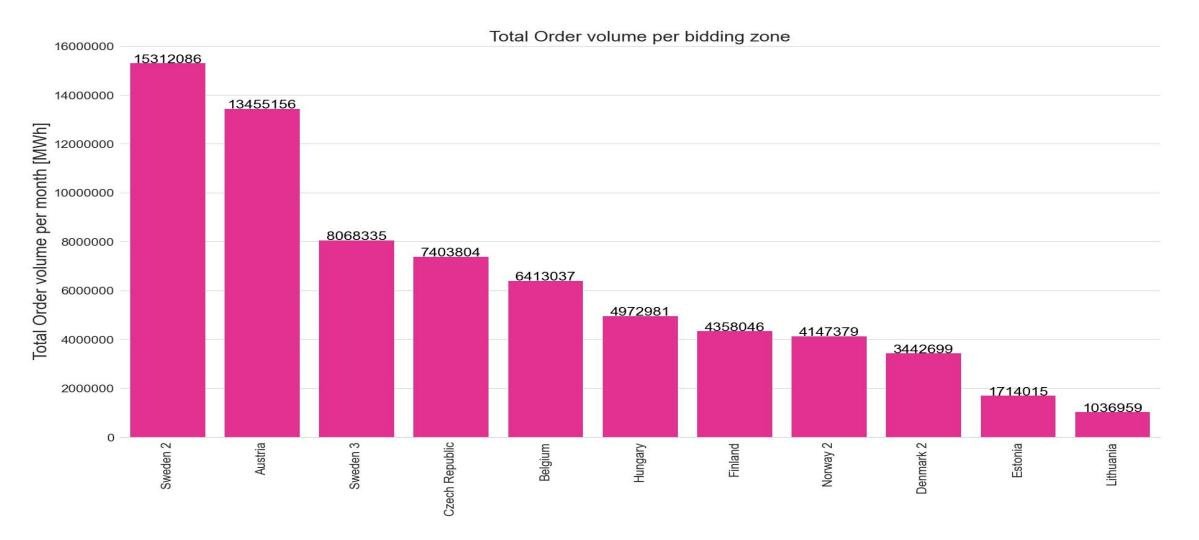
2. Indicators to describe the usage of continuous SIDC algorithm products (10/12)



Total Order volume per bidding zone

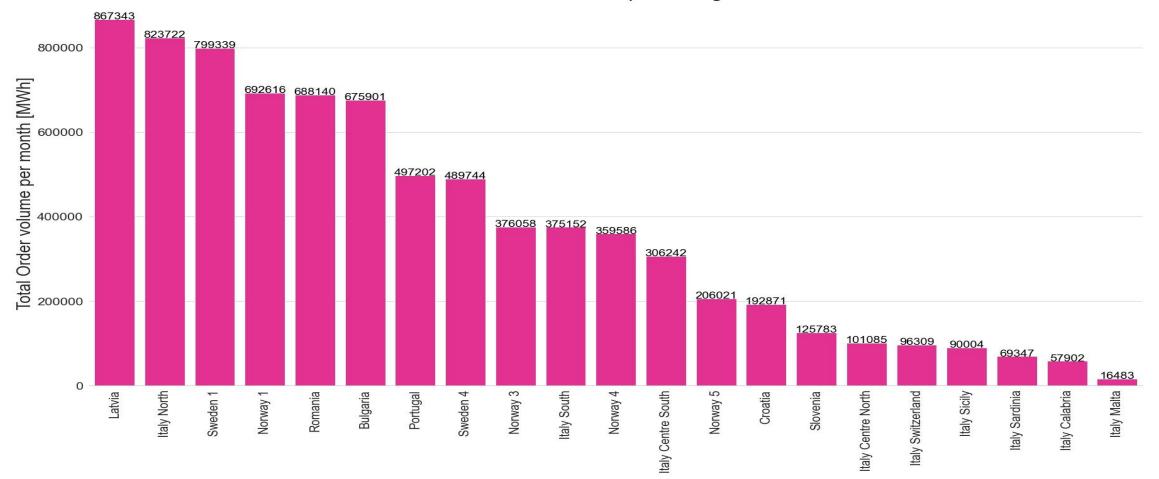
SIDC

2. Indicators to describe the usage of continuous SIDC algorithm products (11/12)



SIDC

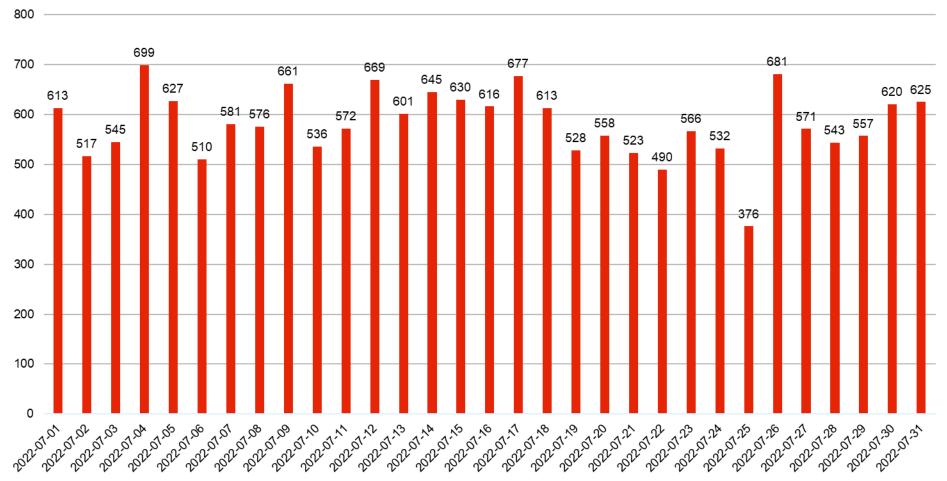
2. Indicators to describe the usage of continuous SIDC algorithm products (12/12)



Total Order volume per bidding zone



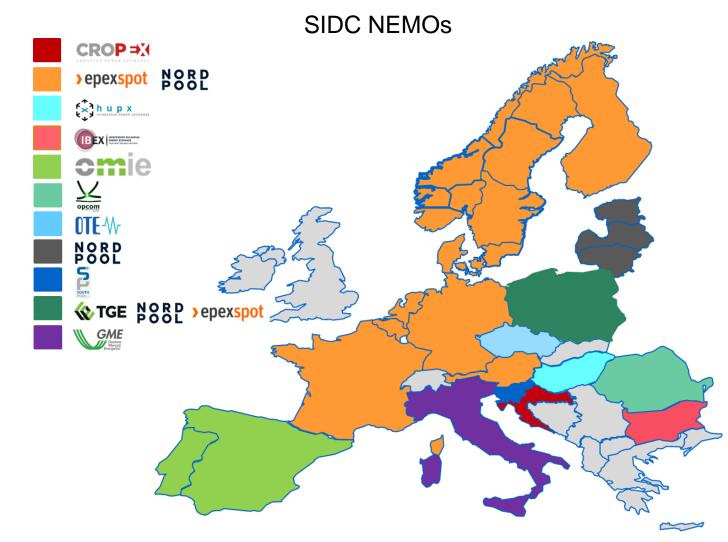
3. Indicator to describe the usage of Explicit Capacity Allocation



Total Explicit allocation requests (No.)



4. Indicators to describe the geographical extension of continuous SIDC (1/8)



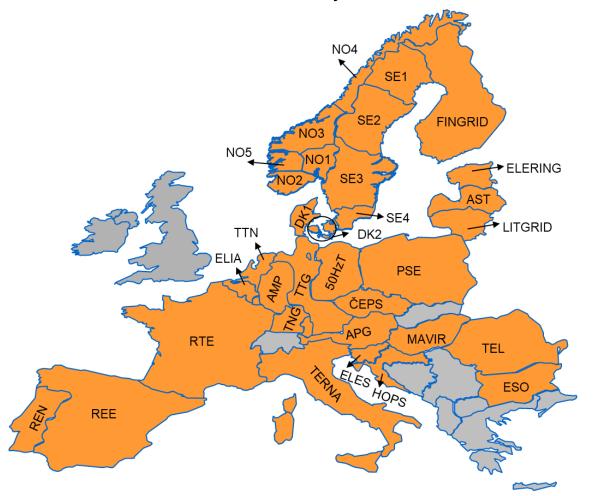
There are 11 NEMOs in SIDC. Some areas have more than one NEMO (MNA - Multi NEMO Area)

21



4. Indicators to describe the geographical extension of continuous SIDC (2/8)

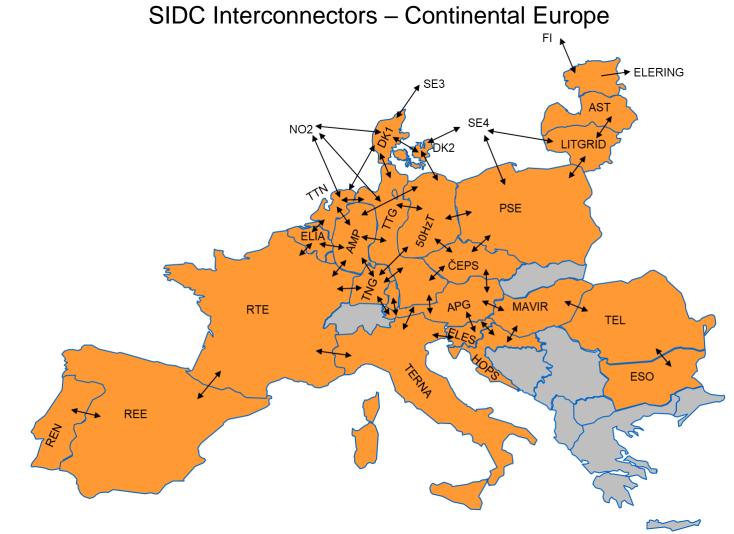
SIDC Delivery areas



There are 51 Delivery areas in SIDC. Denmark, Italy, Norway and Sweden are divided to several delivery areas.

SIDC



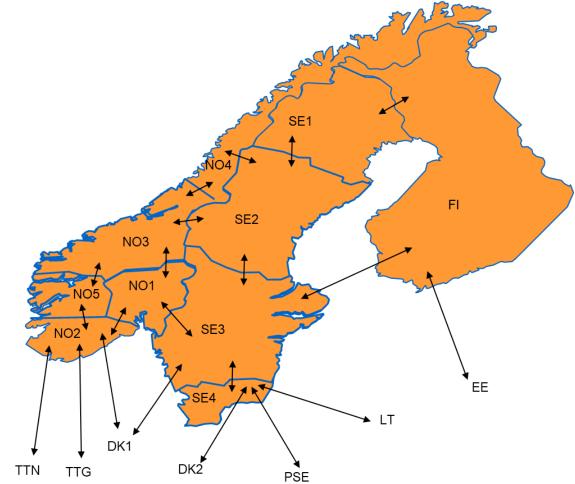


There are in total 62 interconnectors between Delivery areas in SIDC.



4. Indicators to describe the geographical extension of continuous SIDC (4/8)

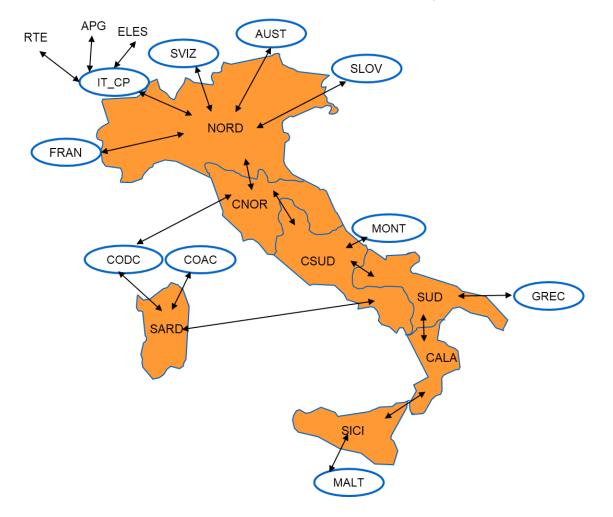
SIDC Interconnectors - Nordics area





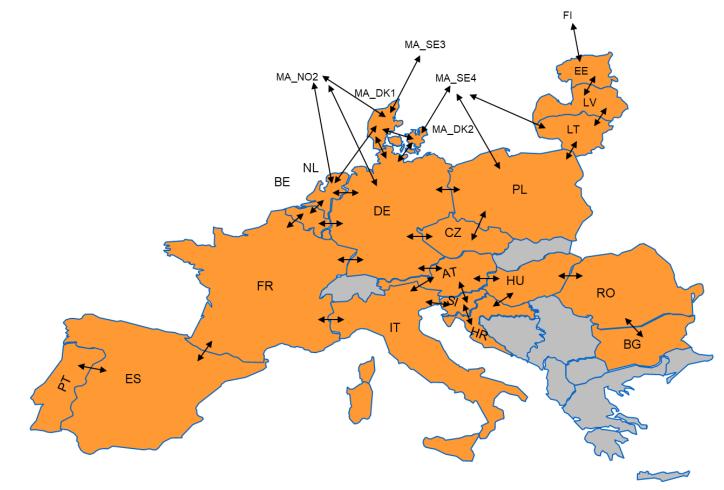
4. Indicators to describe the geographical extension of continuous SIDC (5/8)

SIDC Interconnectors - Italy



4. Indicators to describe the geographical extension of continuous SIDC (6/8)

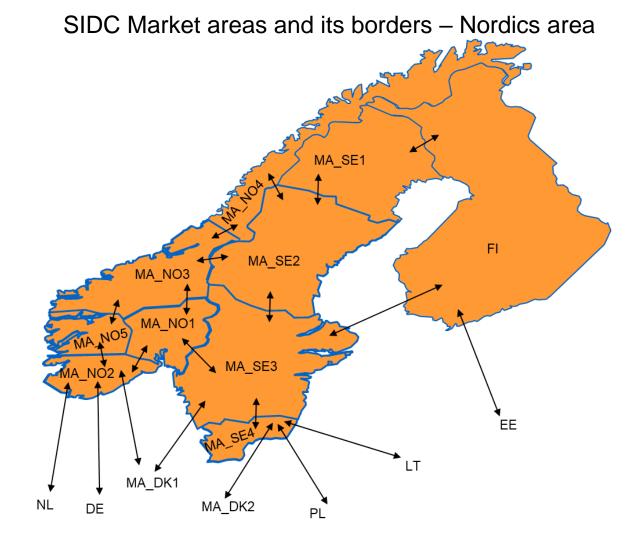
SIDC Market areas and its borders – Continental Europe



There are 31 Market areas and 51 Borders in SIDC.

SIDC

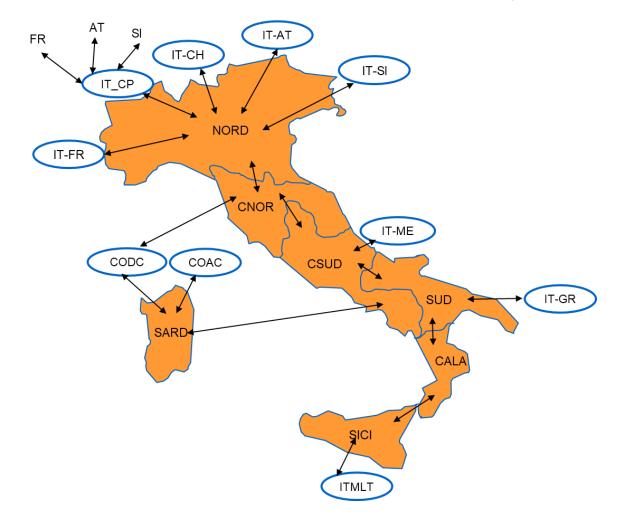
4. Indicators to describe the geographical extension of continuous SIDC (7/8)





4. Indicators to describe the geographical extension of continuous SIDC (8/8)

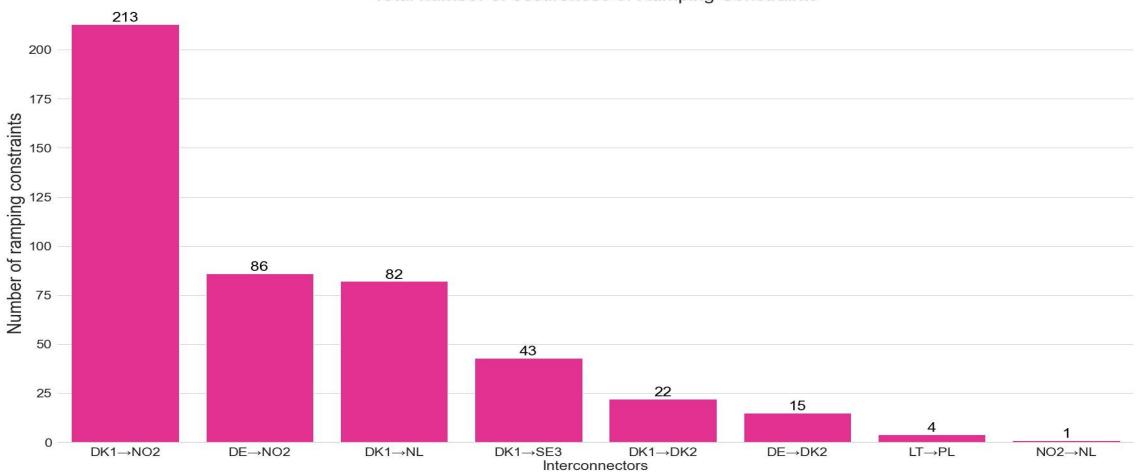
SIDC Market areas and its borders – Italy







5. Indicators to describe the network constraints



Total number of occurences of Ramping Constraints

29



6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (1/8)

10 000 000 9 000 000 8 000 000 7 000 000 6 000 000 (MWh) 5 000 000 827616 969 27 79 862 830 26 440 794 657.57 2 070 298 3 245 14 915 18 053 13 65 946 32 488 4 000 000 93 761 8 006 0 996 914 133 880 890 815 197 66 34 309 673 87 35 486 120 3 000 000 2 000 000 1 000 000 0 April-19 July-19 April-20 July-20 May-19 June-19 May-20 June-20 April-21 April-22 May-22 June-22 February-19 March-19 March-20 August-20 November-20 May-21 July-22 January-19 August-19 September-19 October-19 November-19 December-19 February-20 September-20 October-20 December-20 June-21 July-21 January-22 February-22 March-22 January-20 January-21 February-21 March-21 August -21 September-21 October-21 November-21 December-21

Intraday Traded Volume

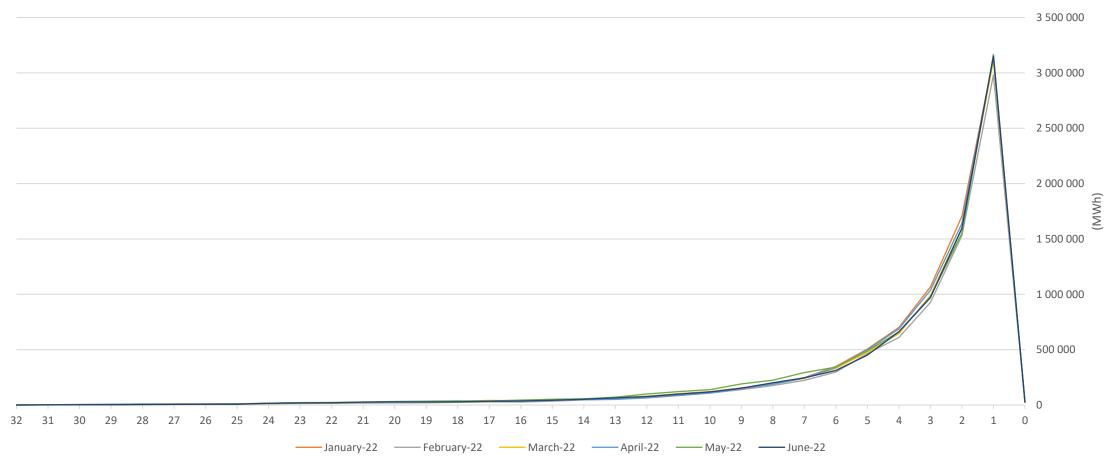
SIDC **SIDC Single Intraday**

6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (2/8)

Total volume matched within hours before delivery

Coupling

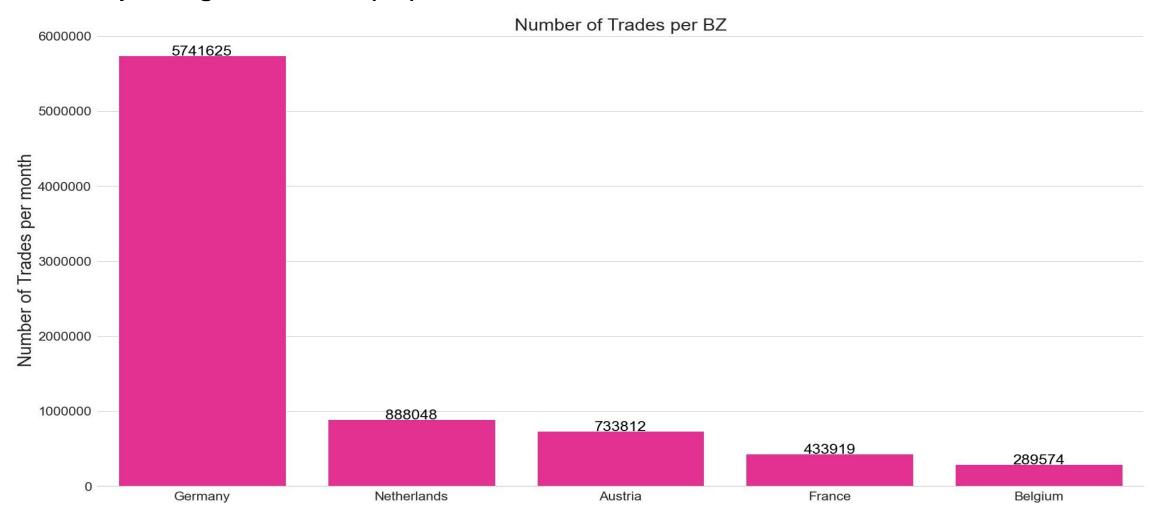
30



Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the volume matched between 1 hour to 30 minutes is substantially lower (in thousands of MWhs) and there is no volume matched between 30 minutes to 0.

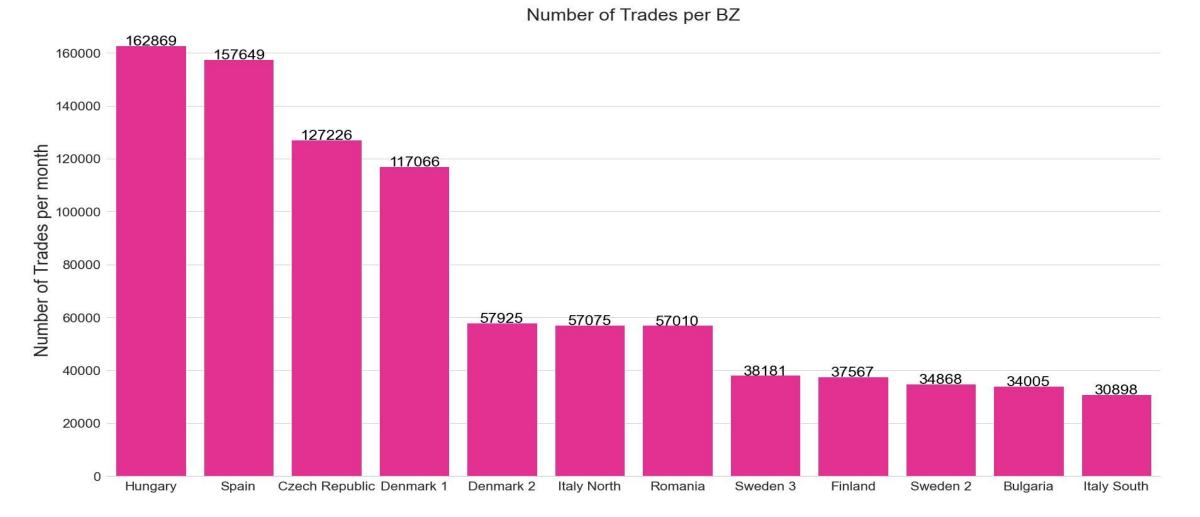


6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (3/8)





6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (4/8)





6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (5/8)

30743 30000 29070 25000 24419 24302 23615 Number of Trades per month 22378 22339 20000 19639 18839 18641 14965 15000 14195 13221 10913 <u>10509</u> 10000 8200 8039 5000 2884 2741 1862 1482 0 Italy Sicily Norway 5 Italy Calabria Slovenia Norway 2 Lithuania Sweden 1 Norway 1 Sweden 4 Norway 3 Estonia Latvia Norway 4 Italy Malta Croatia Poland Portugal Italy Centre South Italy Centre North taly Sardinia Italy Switzerland

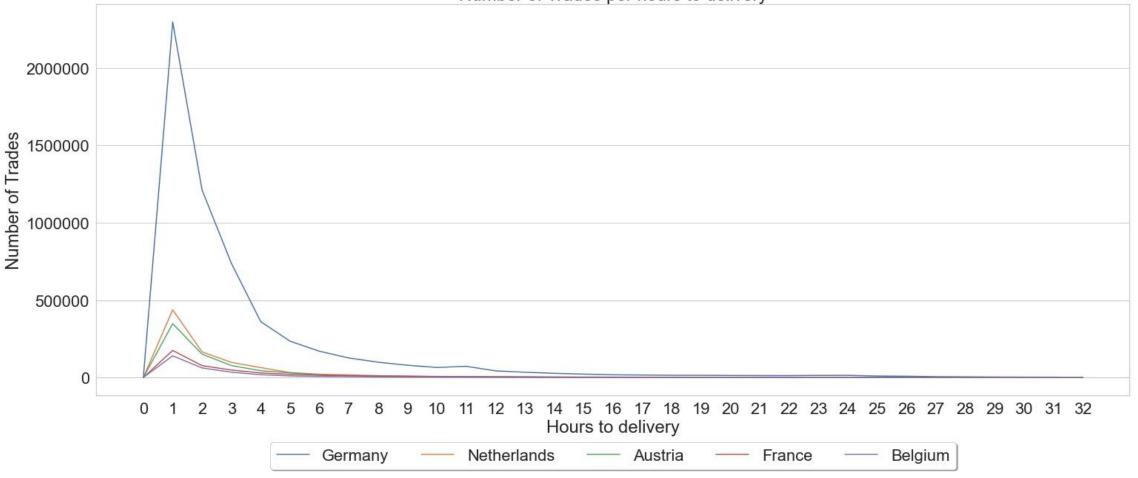
Number of Trades per BZ

34



6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (6/8)

Number of Trades per hours to delivery

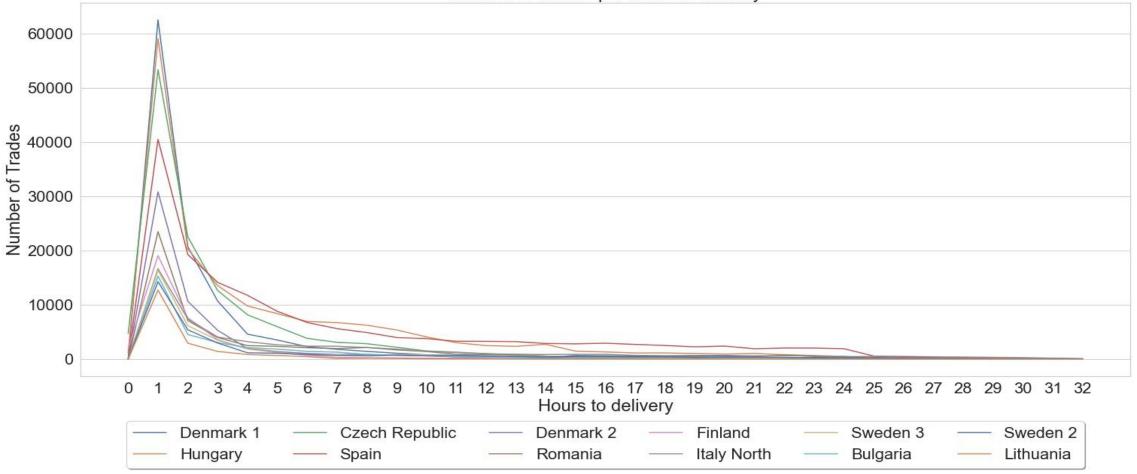


Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the number of trades between 1 hour to 30 minutes is substantially lower (in thousands) and there is no volume matched between 30 minutes to 0.



6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (7/8)

Number of Trades per hours to delivery



Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the number of trades between 1 hour to 30 minutes is substantially lower (in thousands) and there is no volume matched between 30 minutes to 0.





6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (8/8)

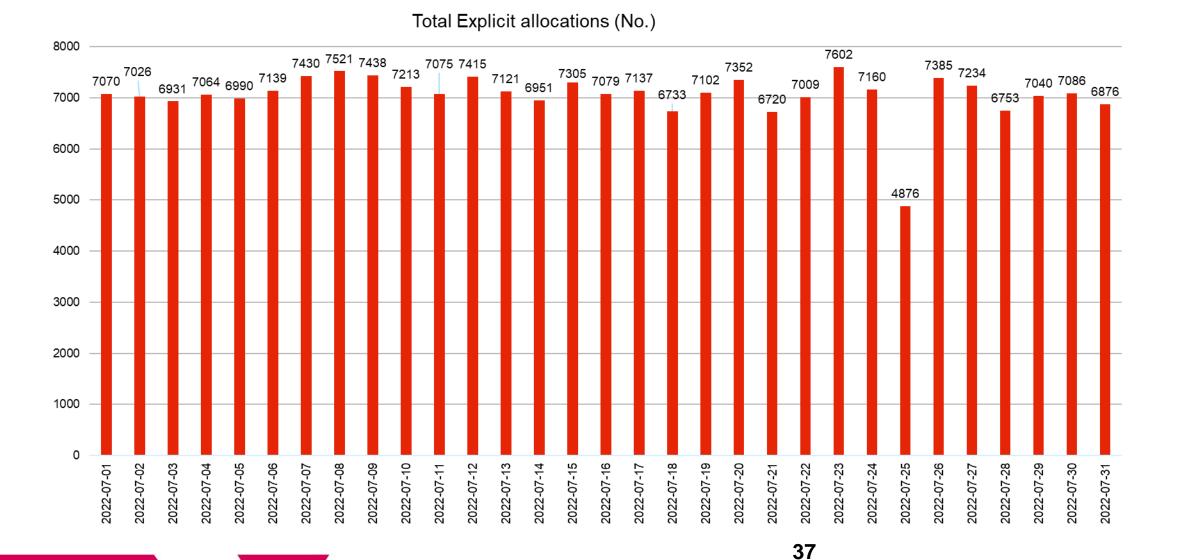
Number of Trades per hours to delivery 10000 8000 Number of Trades 6000 4000 2000 0 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 2 0 3 9 Hours to delivery Norway 5 Italy Malta Estonia Poland Portugal ----- Sweden 4 Slovenia Croatia Italy Centre South ----- Italy Calabria Italy Sardinia Norway 4 Italy Sicily — Norway 1 Norway 3 Italy Switzerland Italy South Sweden 1 Norway 2 Italy Centre North Latvia

Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the number of trades between 1 hour to 30 minutes is substantially lower (in hundreds) and there is no volume matched between 30 minutes to 0.





7. Indicators on the evolution of the number of Explicit Capacity Allocations





8. Indicators on the prices (1/3)

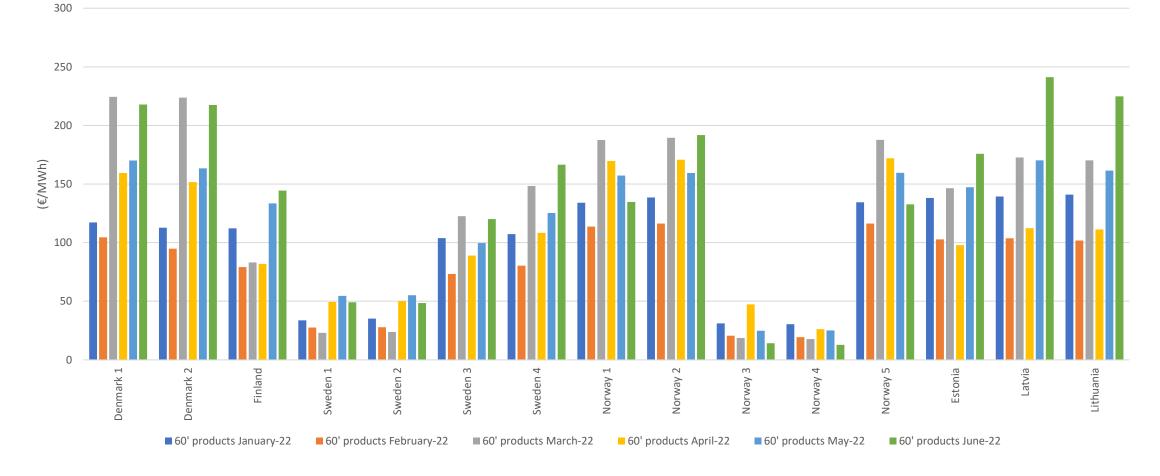
350 300 250 (€/MWh) 200 150 100 50 0 Italy Sicily Slovenia Hungary Portugal Bulgaria Germany France Croatia Austria Poland Italy Switzerland Italy Centre North Italy North Italy Sardinia Italy Centre South Italy South ltaly Calabria Italy Malta Belgium Netherlands Czech Republic Romania Italy Montenegro Spain ■ 60' products January-22 ■ 60' products June-22 60' products February-22 ■ 60' products March-22 60' products April-22 ■ 60' products May-22

Weighted Average prices per MTU per BZ (Continent, 60' products)



8. Indicators on the prices (2/3)

Weighted Average prices per MTU per BZ (Nordic + Baltic, 60' products)



40

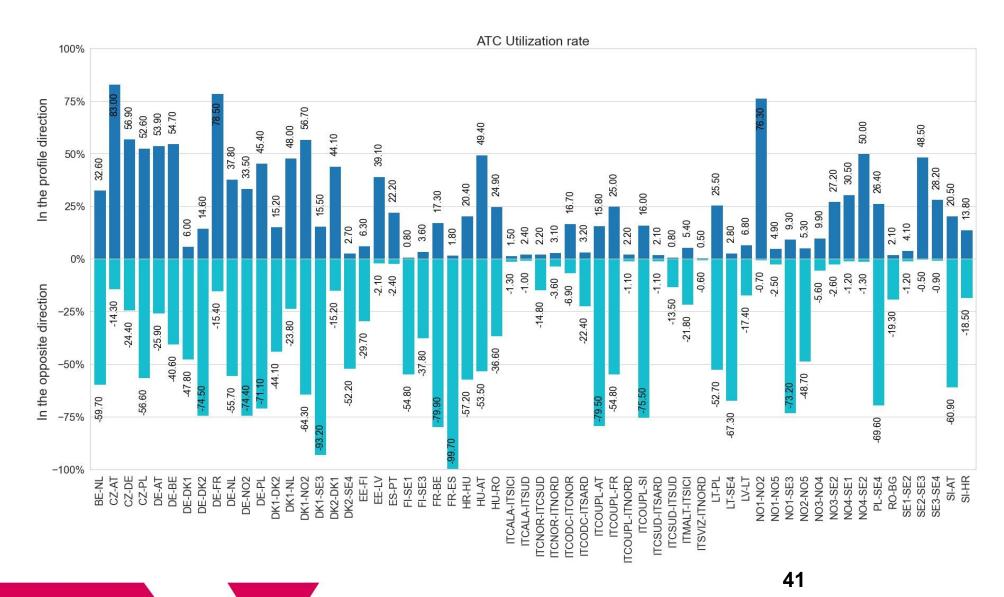


8. Indicators on the prices (3/3)

Indicator		H1 2022		
		Avg	Min	Мах
Volume-Weighted Average Intraday Prices – last trading hour (€/MWh)	Hour Product	171,85	- 301,74	1 999,67
	Half-hour Product	232,20	- 33,16	2 313,18
	1/4 Hour Product	205,35	- 439,99	993,58
	Block Product	136,22	1,00	2 313,18
Bid-Ask Spread (€/MWh)	Hour Product	108,86	0,01	9 783,94
	Half-hour Product	126,51	0,50	4 470,00
	1/4 Hour Product	279,78	0,01	9 899,00
	Block Product	278,84	5,00	6 436,65

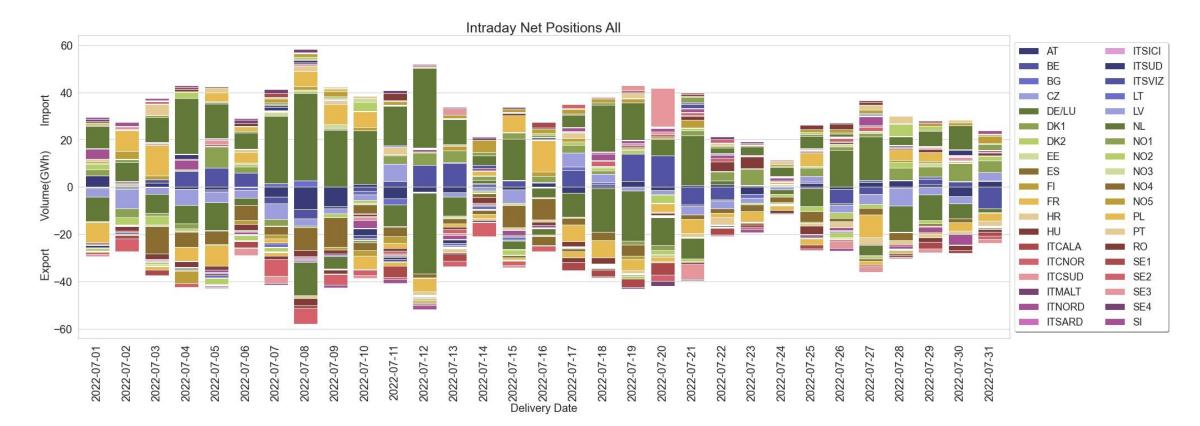


9. Indicators on the capacities



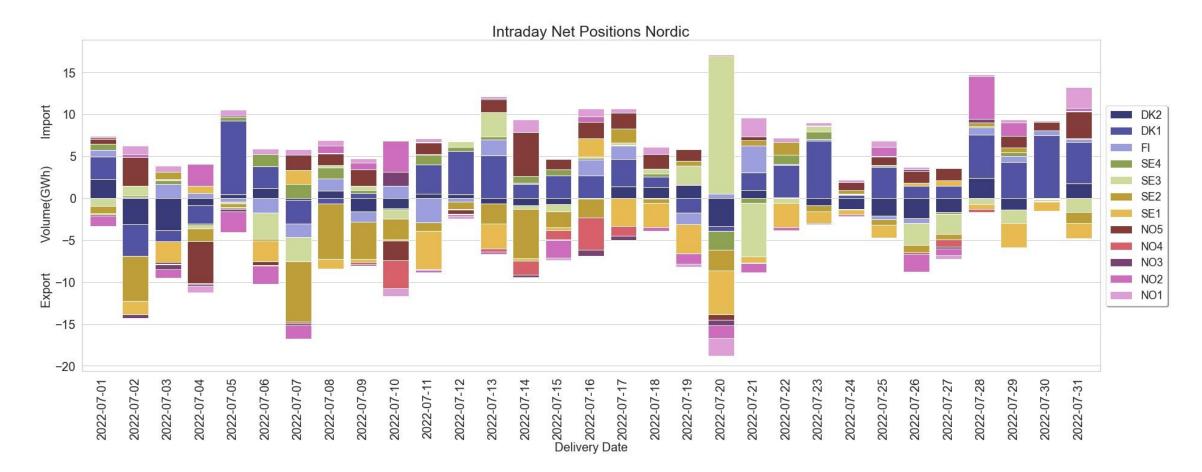


10. Indicators on Net Positions (1/11)



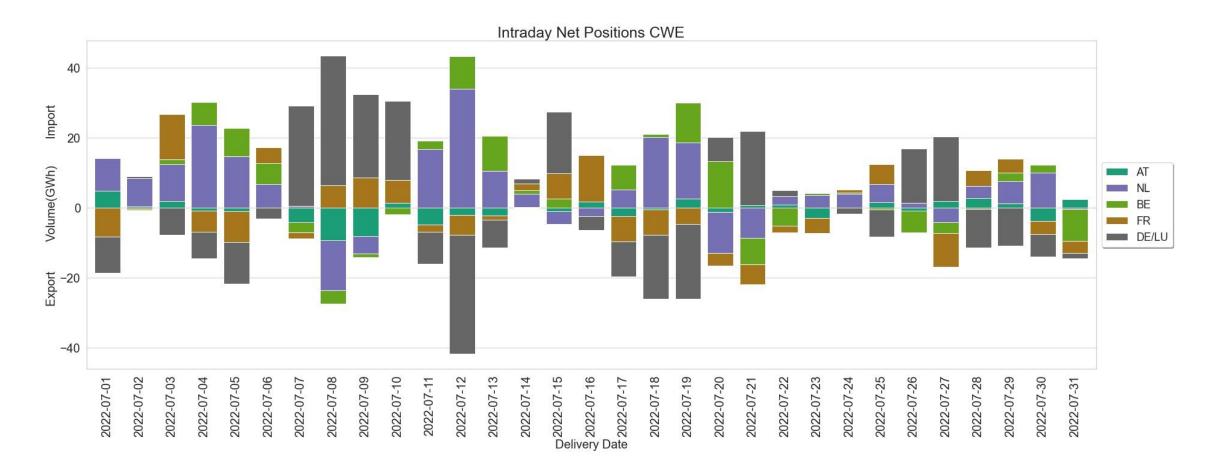


10. Indicators on Net Positions (2/11)



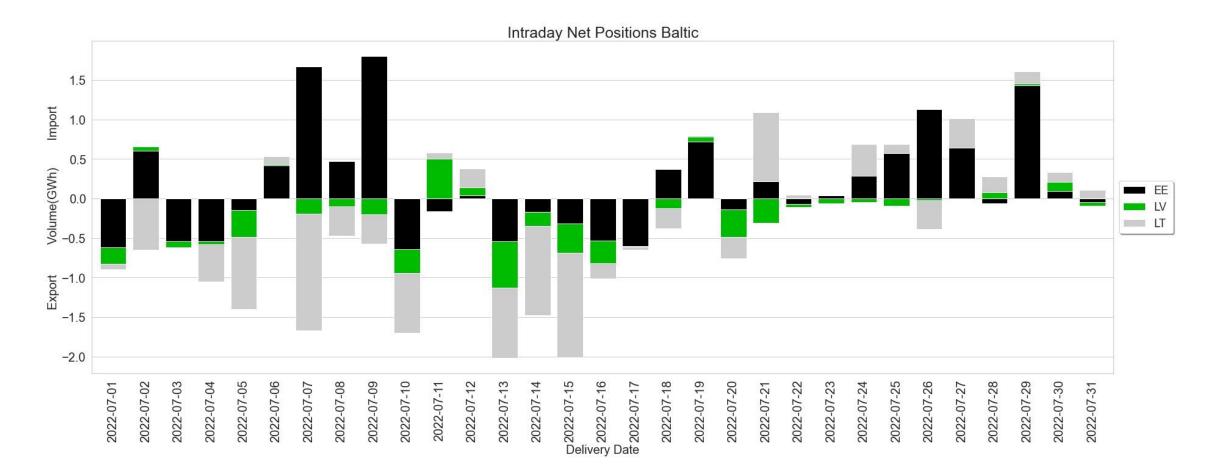


10. Indicators on Net Positions (3/11)



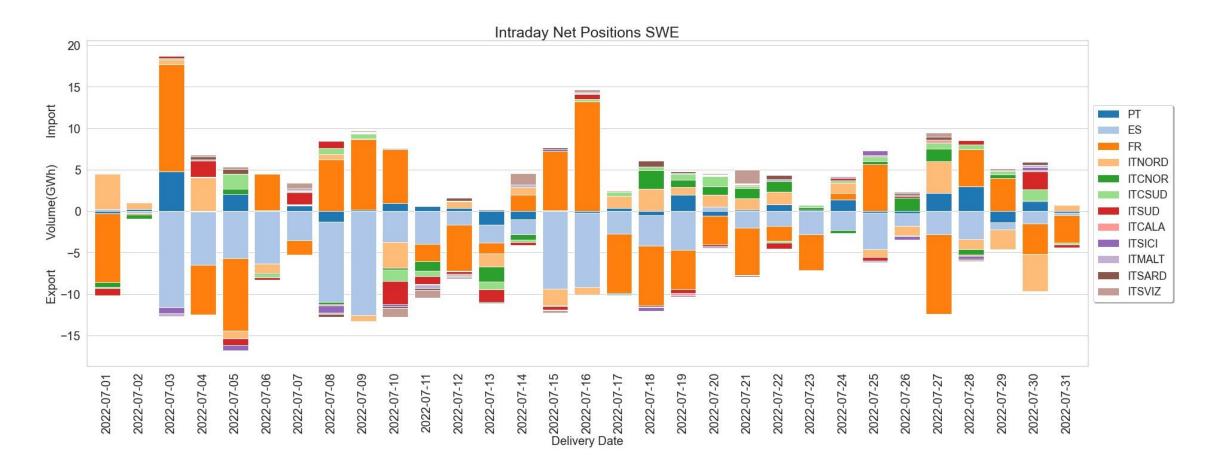


10. Indicators on Net Positions (4/11)



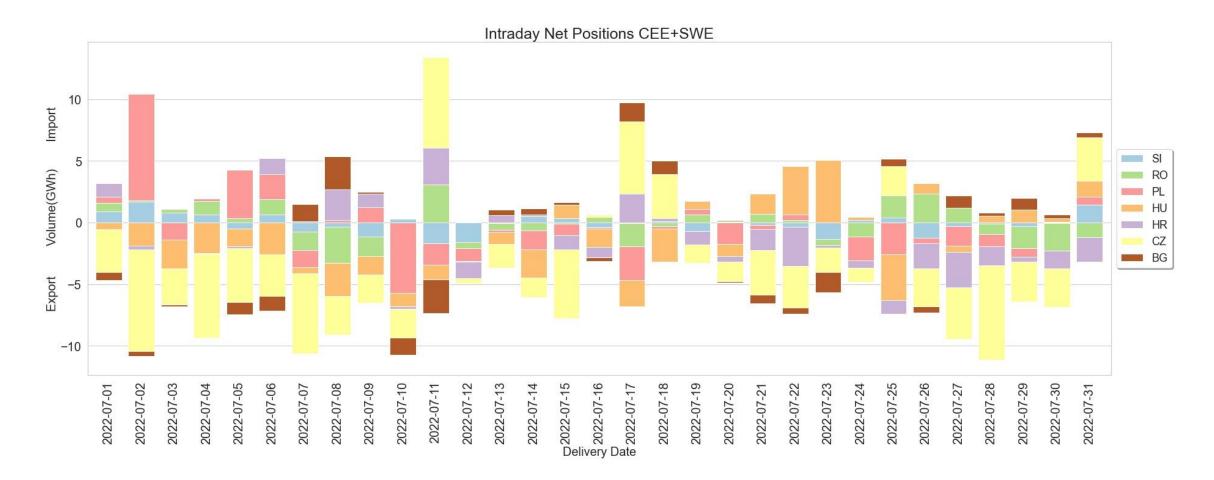


10. Indicators on Net Positions (5/11)



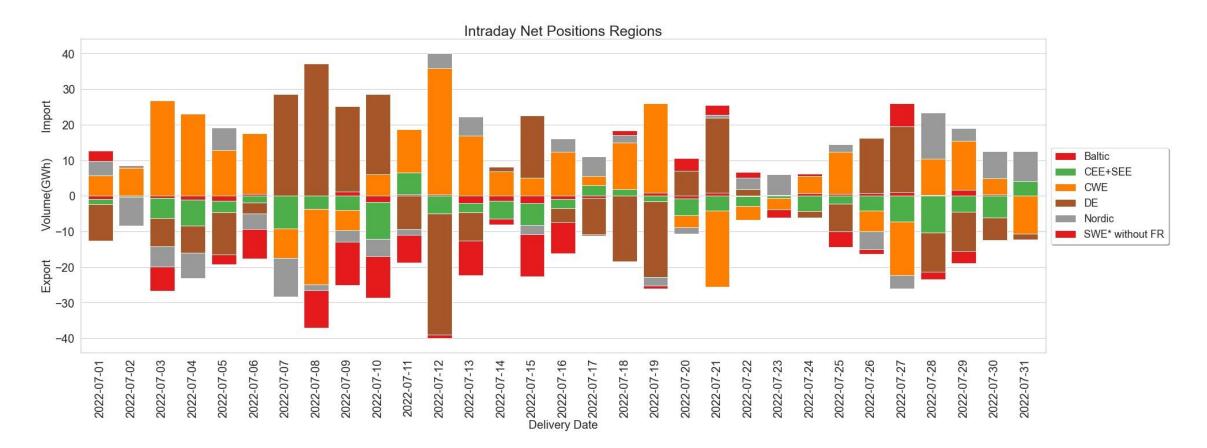


10. Indicators on Net Positions (6/11)



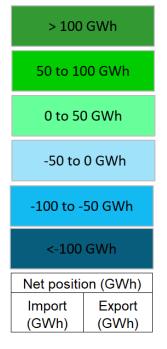


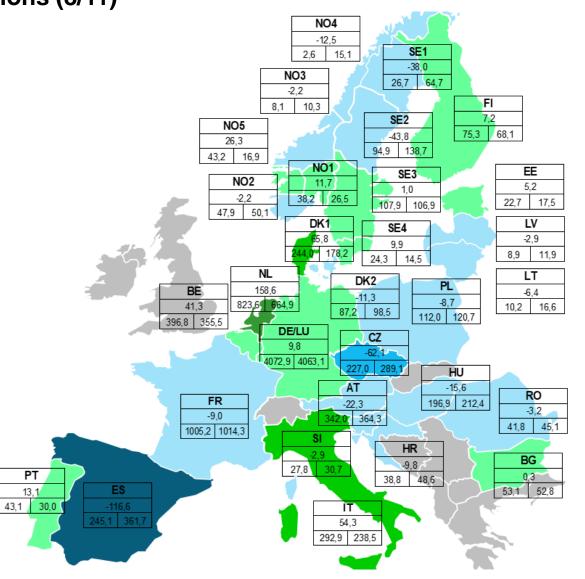
10. Indicators on Net Positions (7/11)



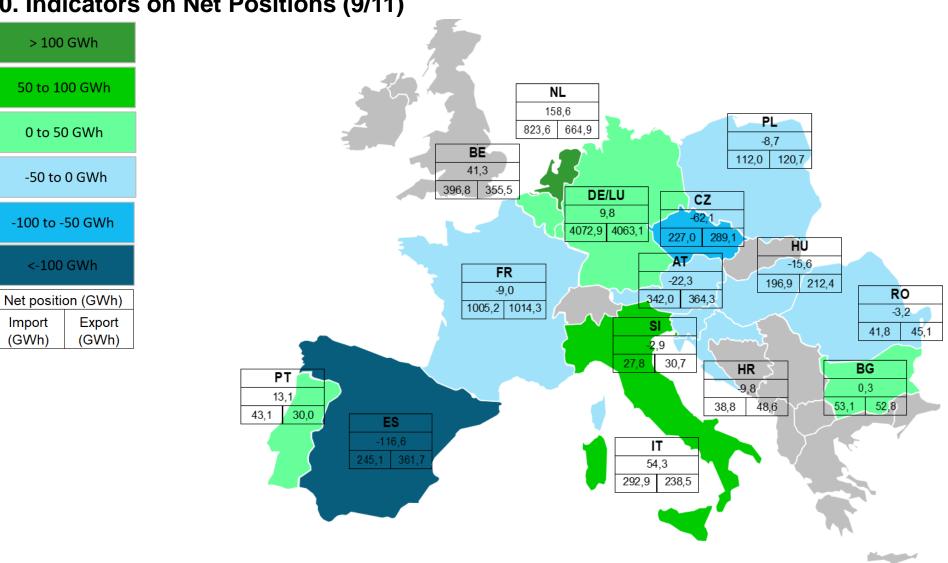


10. Indicators on Net Positions (8/11)





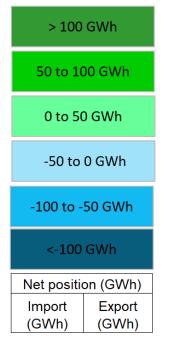


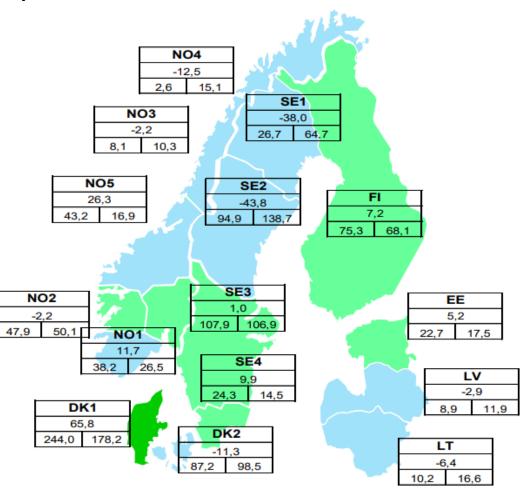


10. Indicators on Net Positions (9/11)



10. Indicators on Net Positions (10/11)

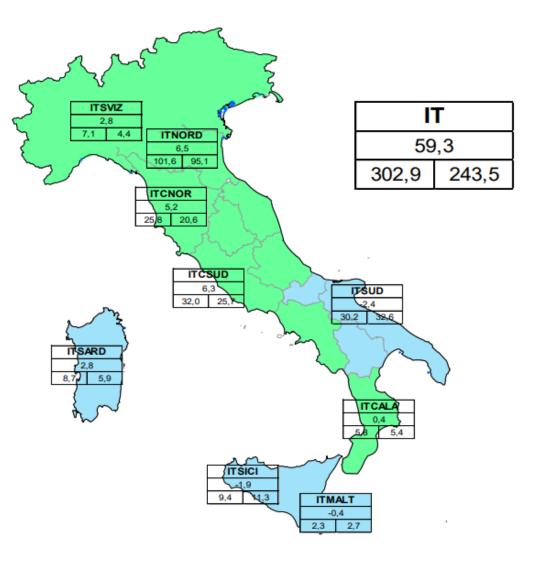






10. Indicators on Net Positions (11/11)

> 100 GWh				
50 to 100 GWh				
0 to 50 GWh				
-50 to 0 GWh				
-100 to -50 GWh				
<-100 GWh				
Net position (GWh)				
Import (GWh)	Export (GWh)			





List of Abbreviations

- ATC Available Transmission Capacity
- BZ Bidding Zone
- MTU Market Time Unit