Market Coupling Steering Committee

SIDC Algorithm monitoring Report

April 2023

SIDC

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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	This indicator measures the number of executed Orders divided by a certain amount of time.	Monthly
	Time for the execution of a Trade	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
	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 continuous SIDC algorithm products	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
	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

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 the geographical extension of continuous SIDC	Total number of NEMOs	This indicator counts the number of Member entities as defined in Shared Order Book	Monthly
	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 number of Matched Orders of each contract, and the corresponding total volume	Total matched volume	Aggregated volume of all Trades within the Intraday Market Timeframe, made per contract per combination of Bidding Zones	Monthly
	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
	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

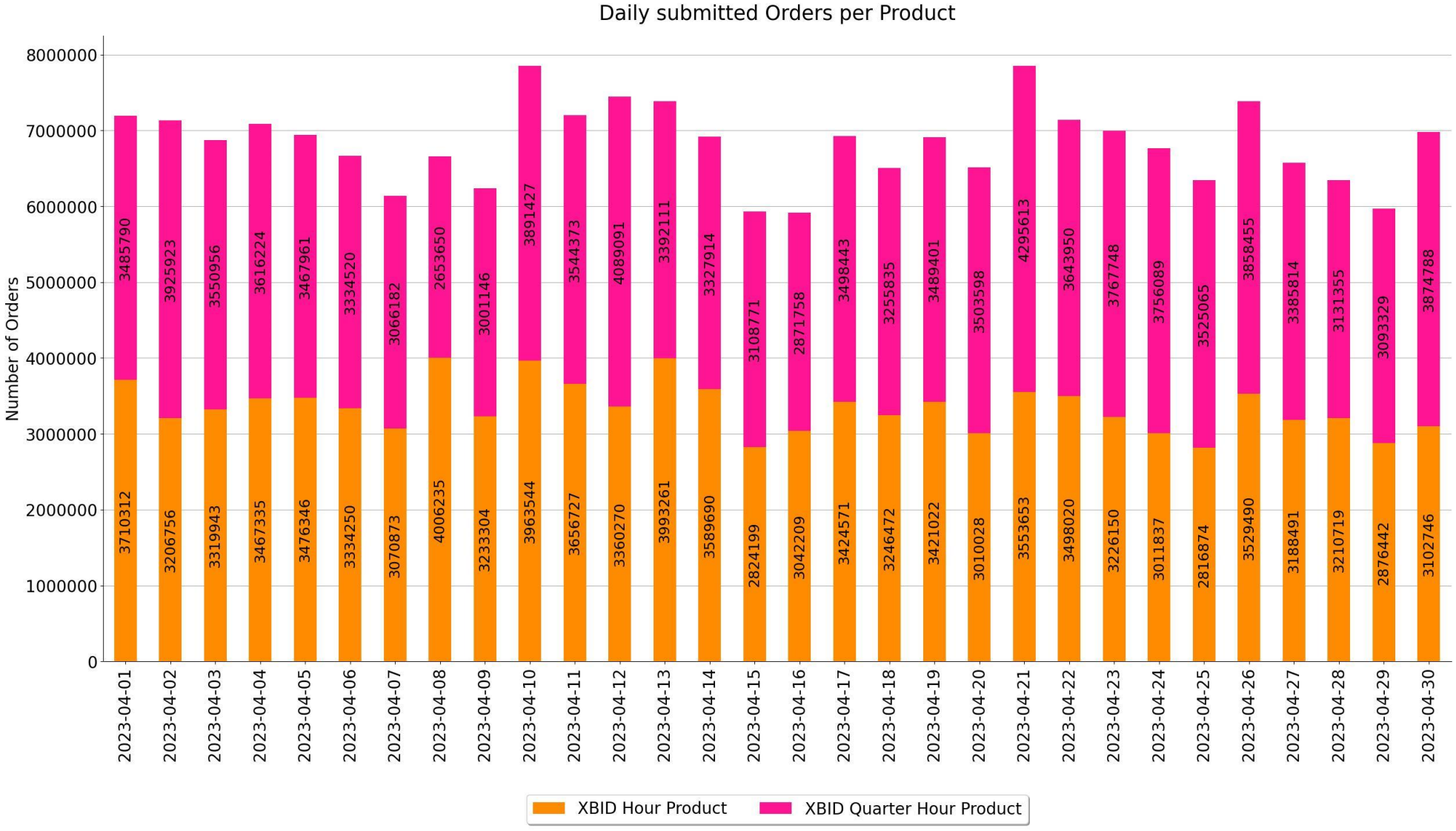
Performance indicator		April 2023		
		Avg	Min	Max
Time for the execution of an Order (milliseconds)	Lower percentile 93%	19	14	27
	Upper percentile 96,5%	28	20	39
Rate of executed Orders (number per day)		7 093 225	5 974 352	8 371 338
Time for the execution of a Trade *		-	-	-
Rate of executed Trade (number per hour)		17 107	1 075	38 390
Time for the generation of Post-Coupling files (milliseconds)		14 198	10 471	18 344
Time for processing an Order Book update (milliseconds)	Lower percentile 93%	19	17	25
	Upper percentile 96,5%	28	24	36

* 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.)

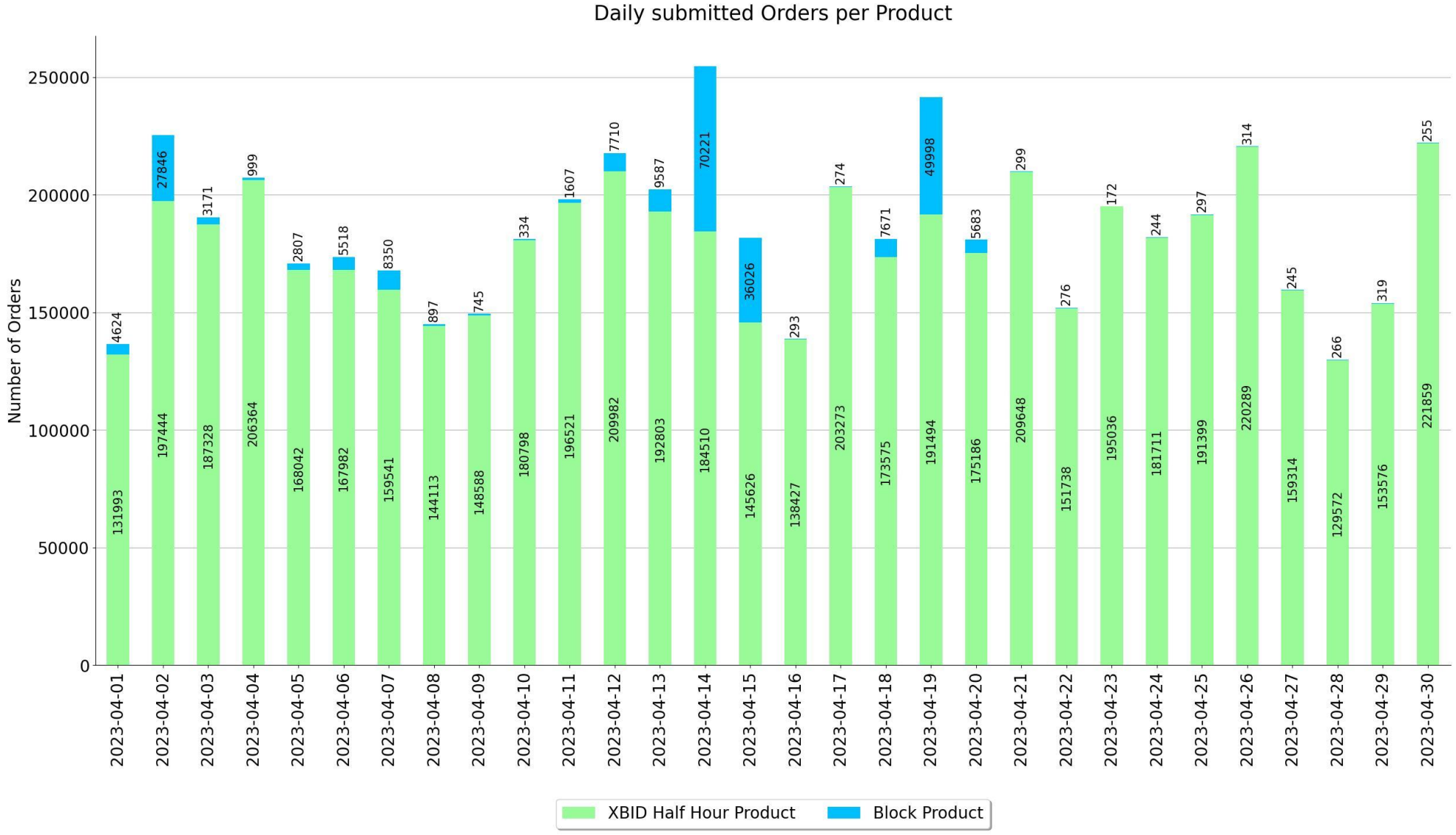
2. Indicators to describe the usage of continuous SIDC algorithm products (1/12)

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, ESO, ELES, MAVIR, TEL, TNG, TTG, ELIA, TTN

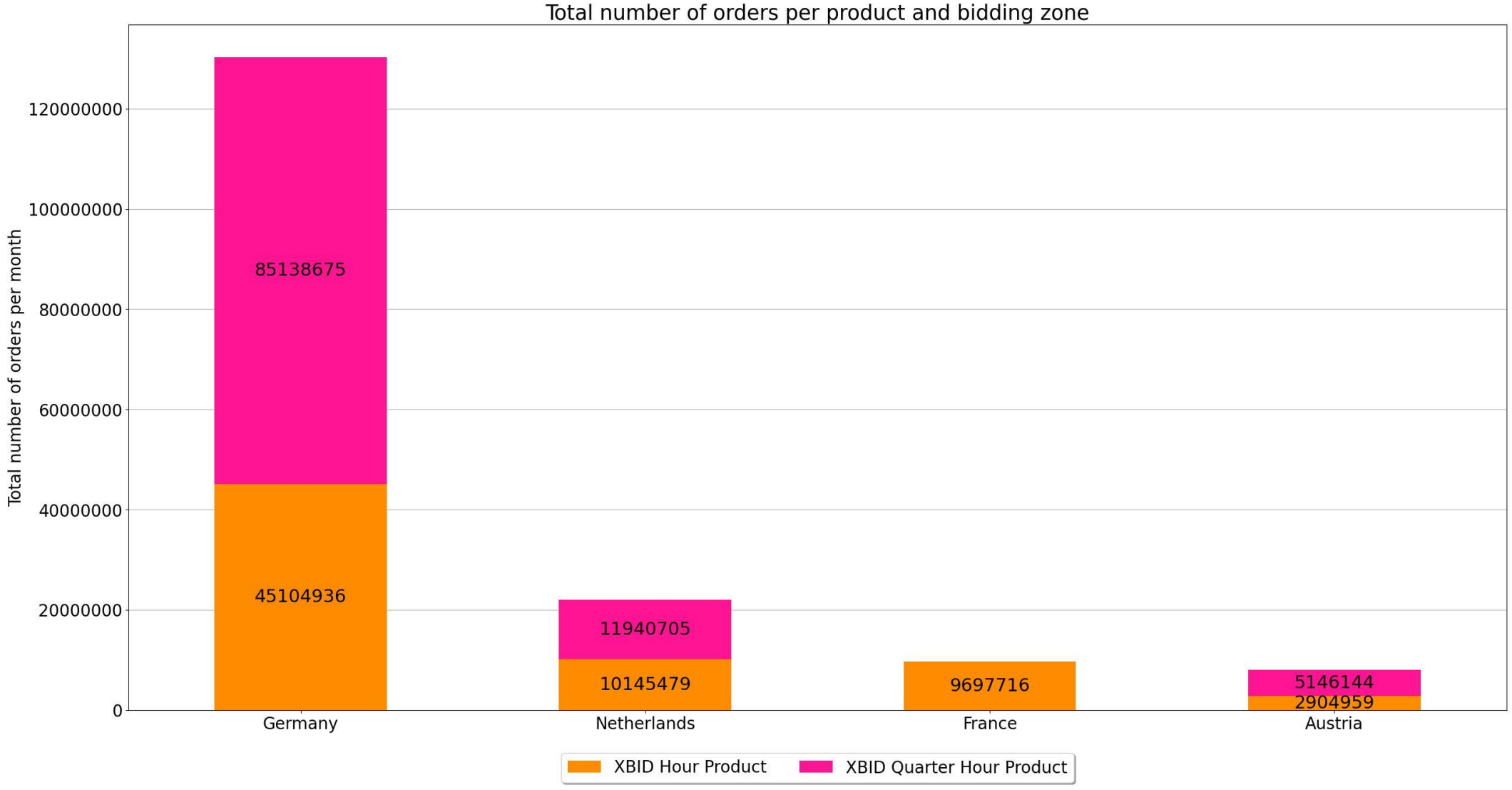
2. Indicators to describe the usage of continuous SIDC algorithm products (2/12)



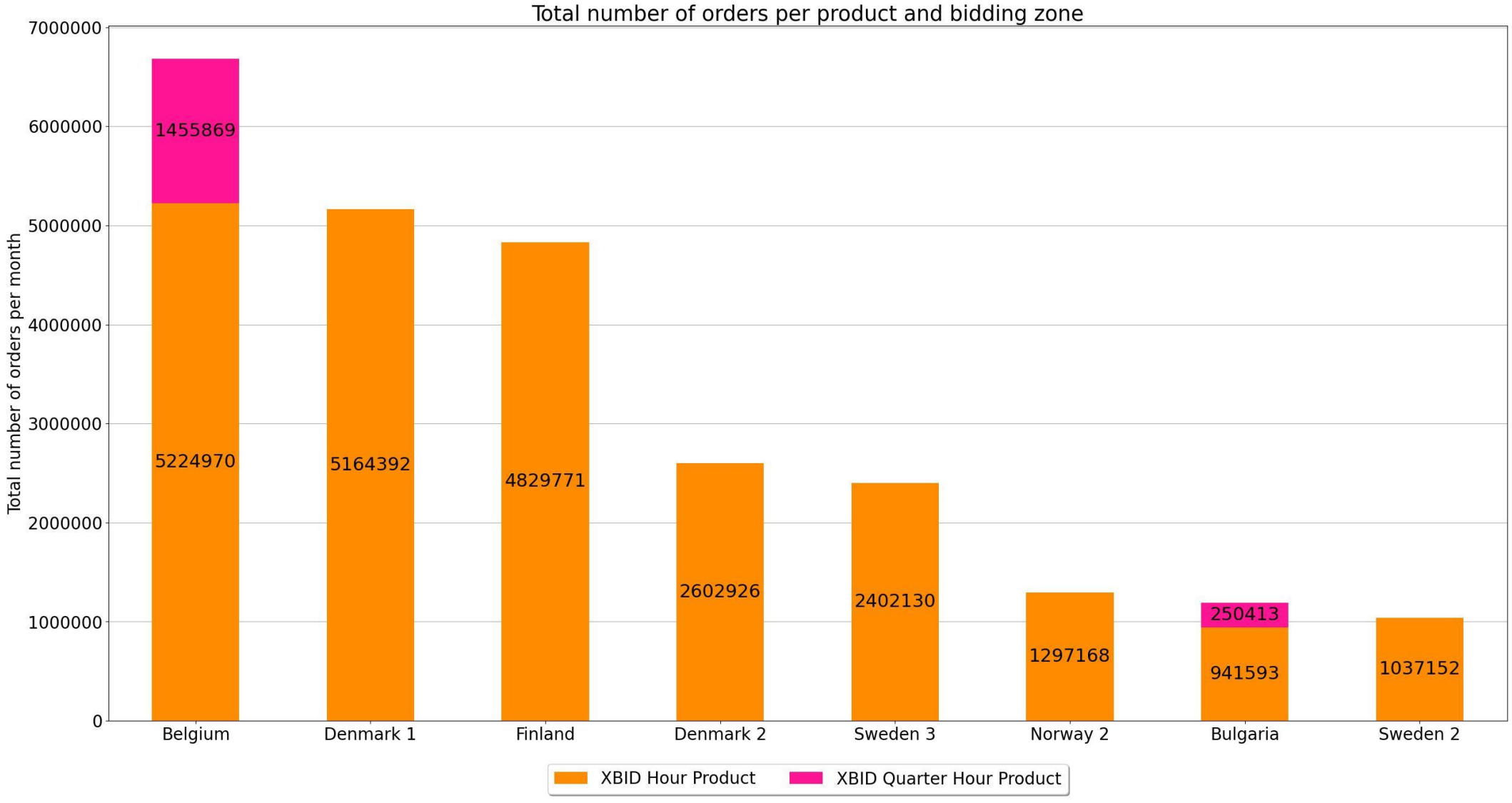
2. Indicators to describe the usage of continuous SIDC algorithm products (3/12)



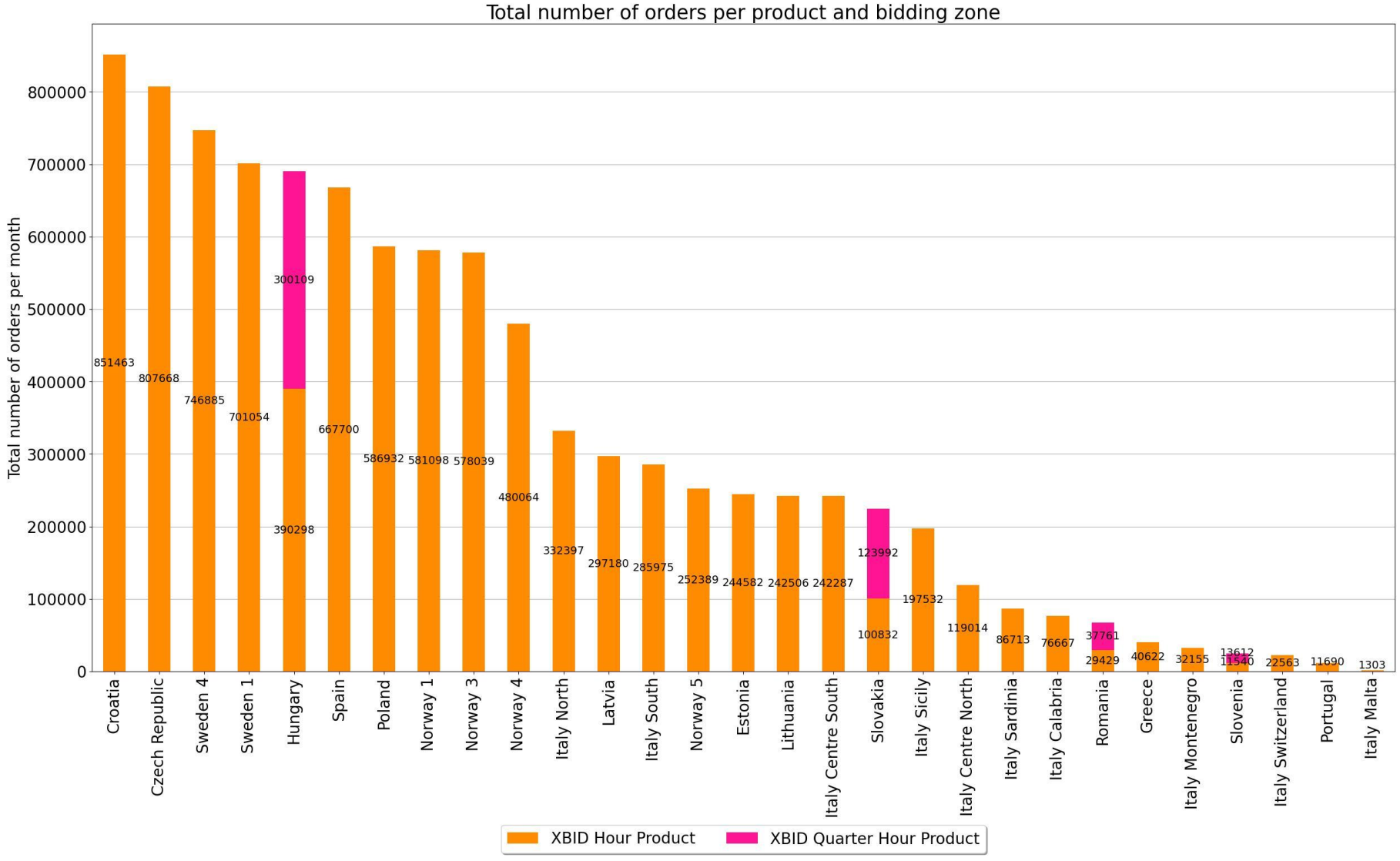
2. Indicators to describe the usage of continuous SIDC algorithm products (4/12)



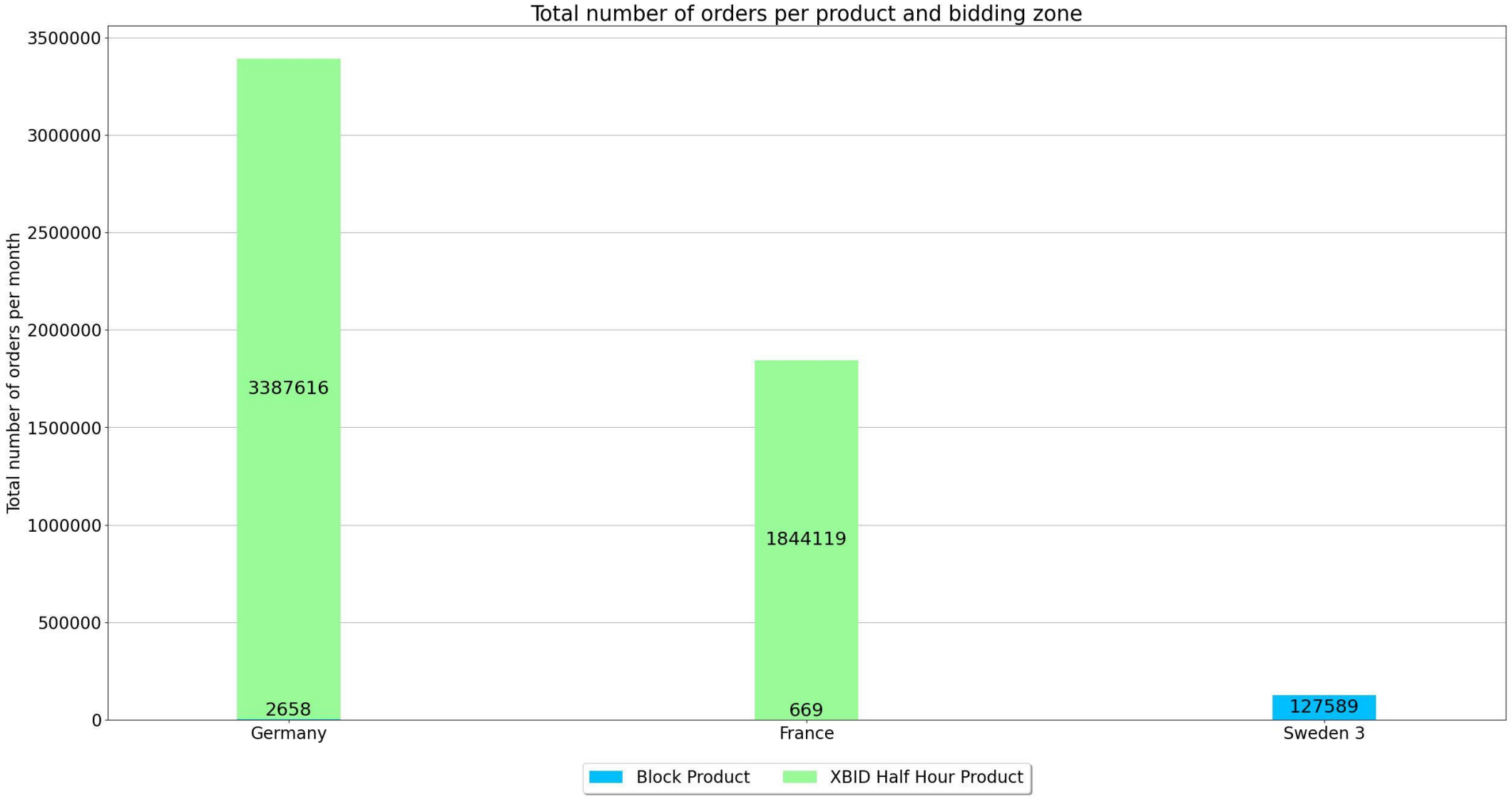
2. Indicators to describe the usage of continuous SIDC algorithm products (5/12)



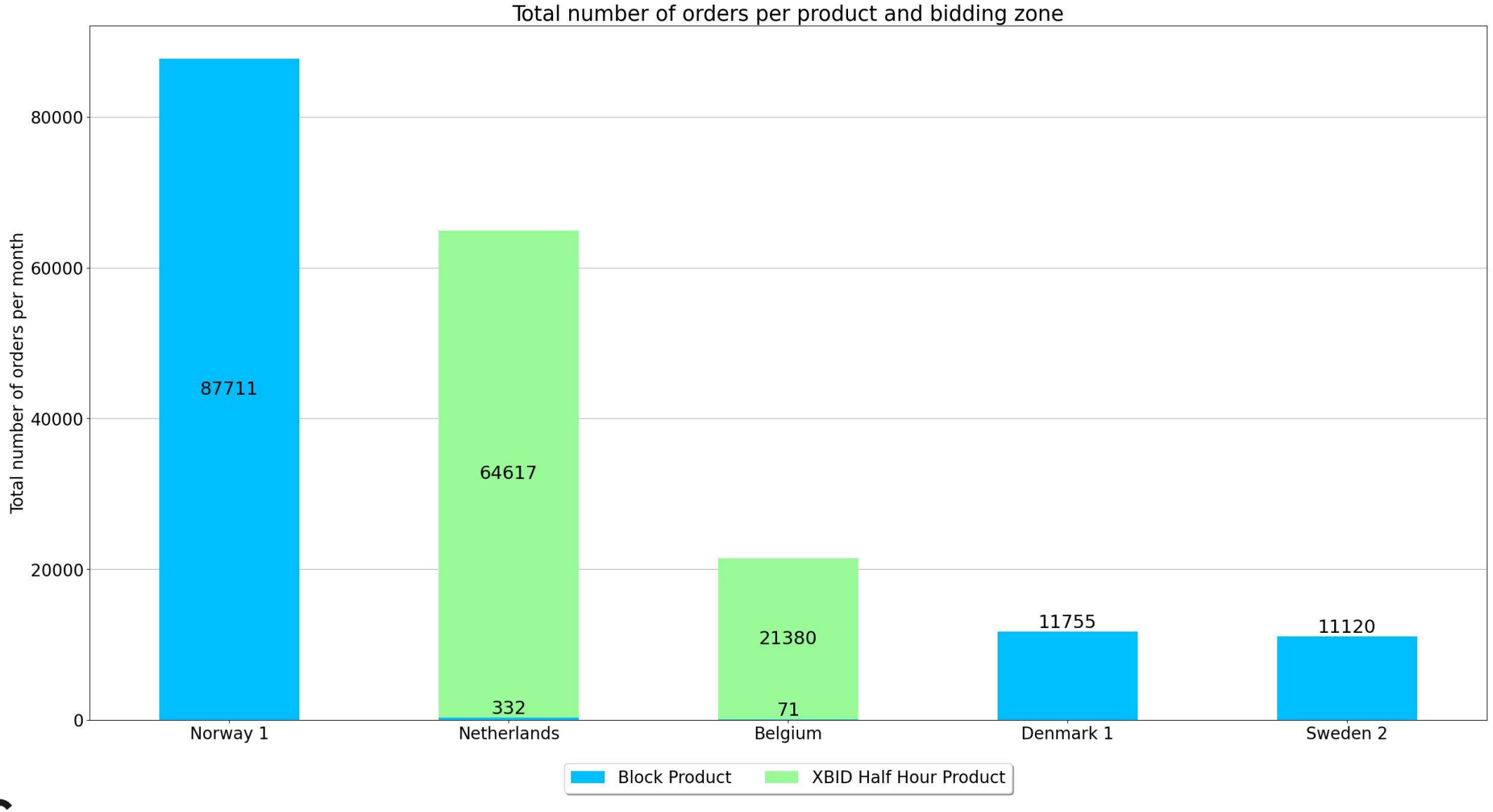
2. Indicators to describe the usage of continuous SIDC algorithm products (6/12)



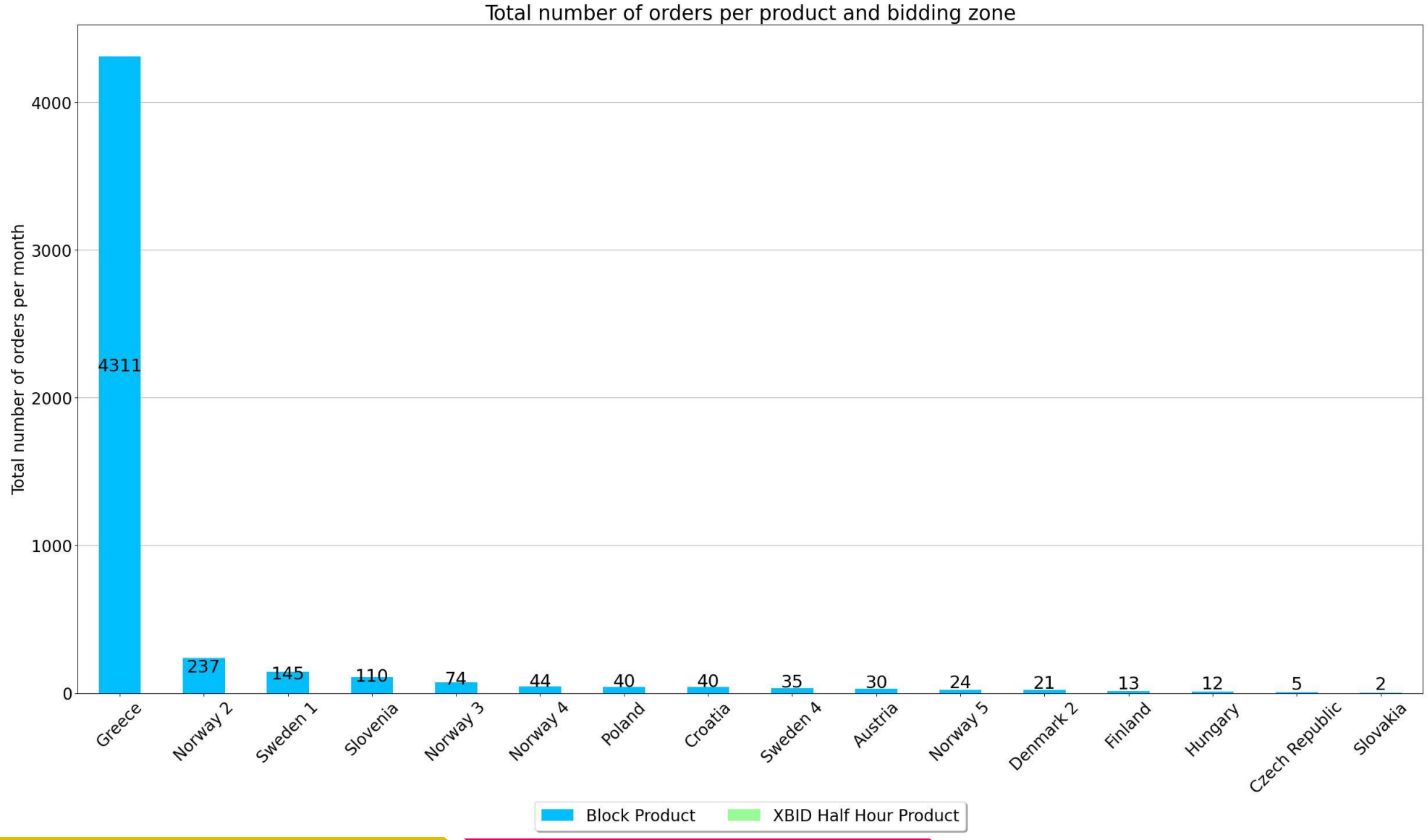
2. Indicators to describe the usage of continuous SIDC algorithm products (7/12)



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



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



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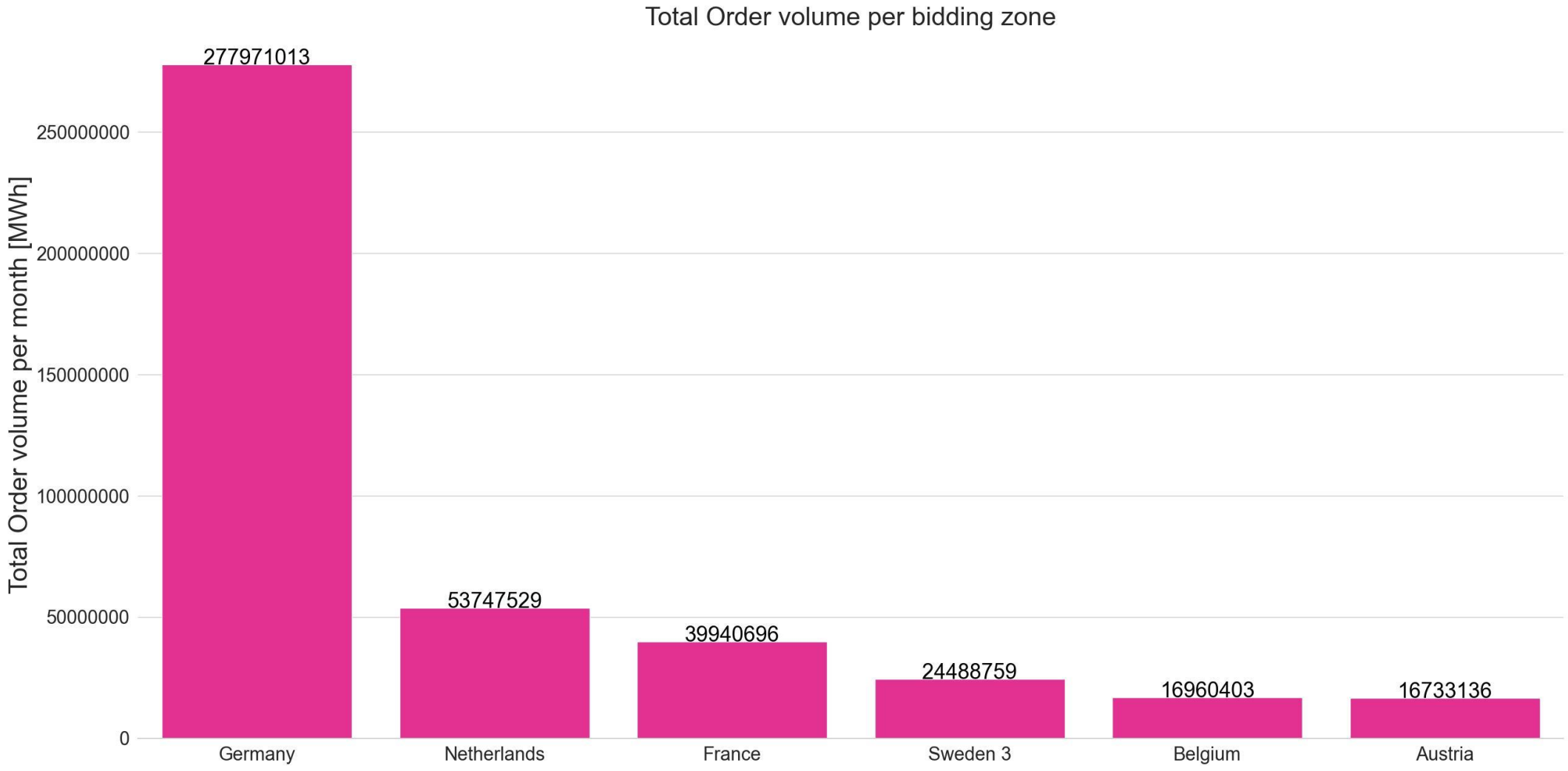
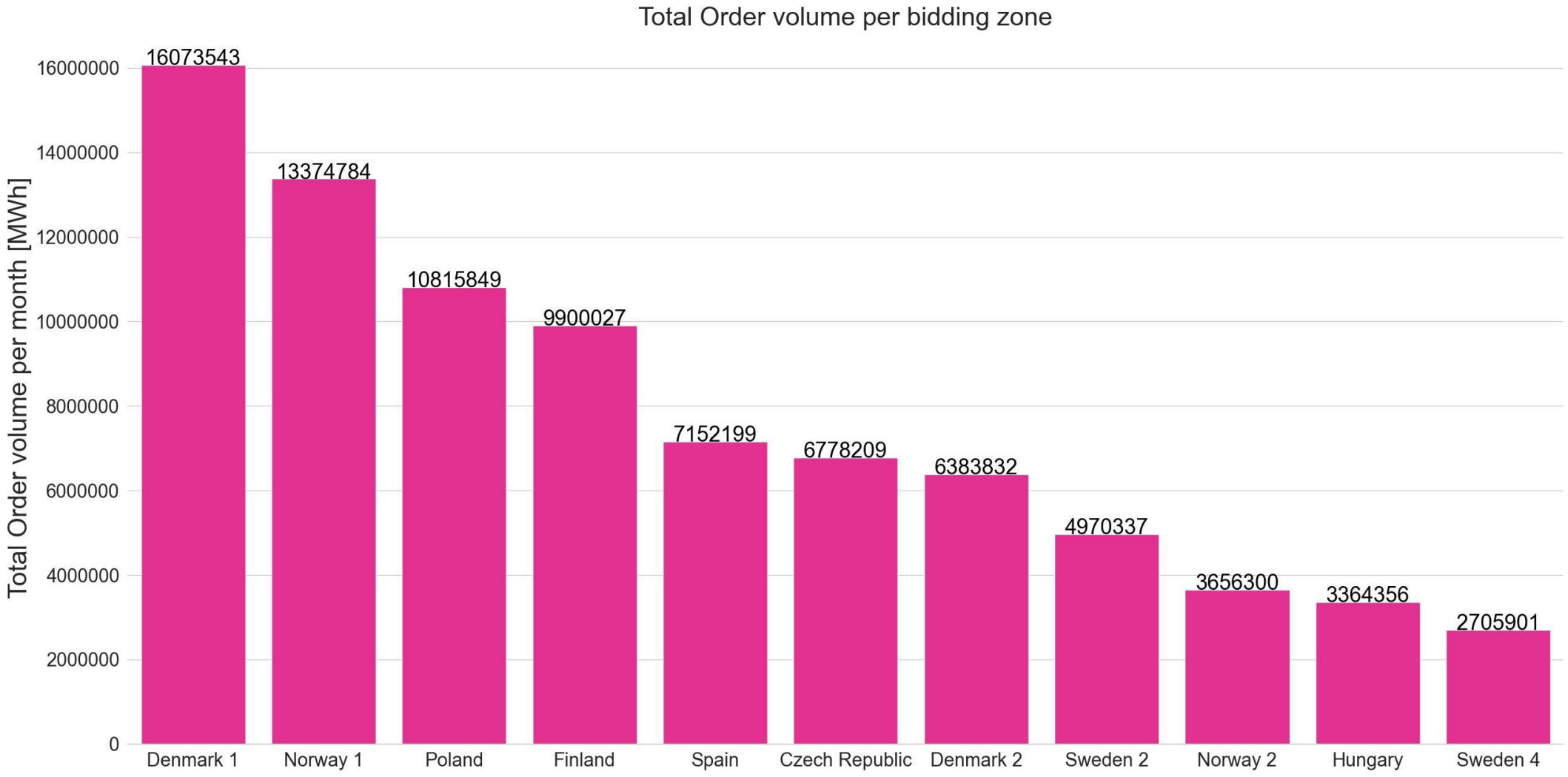
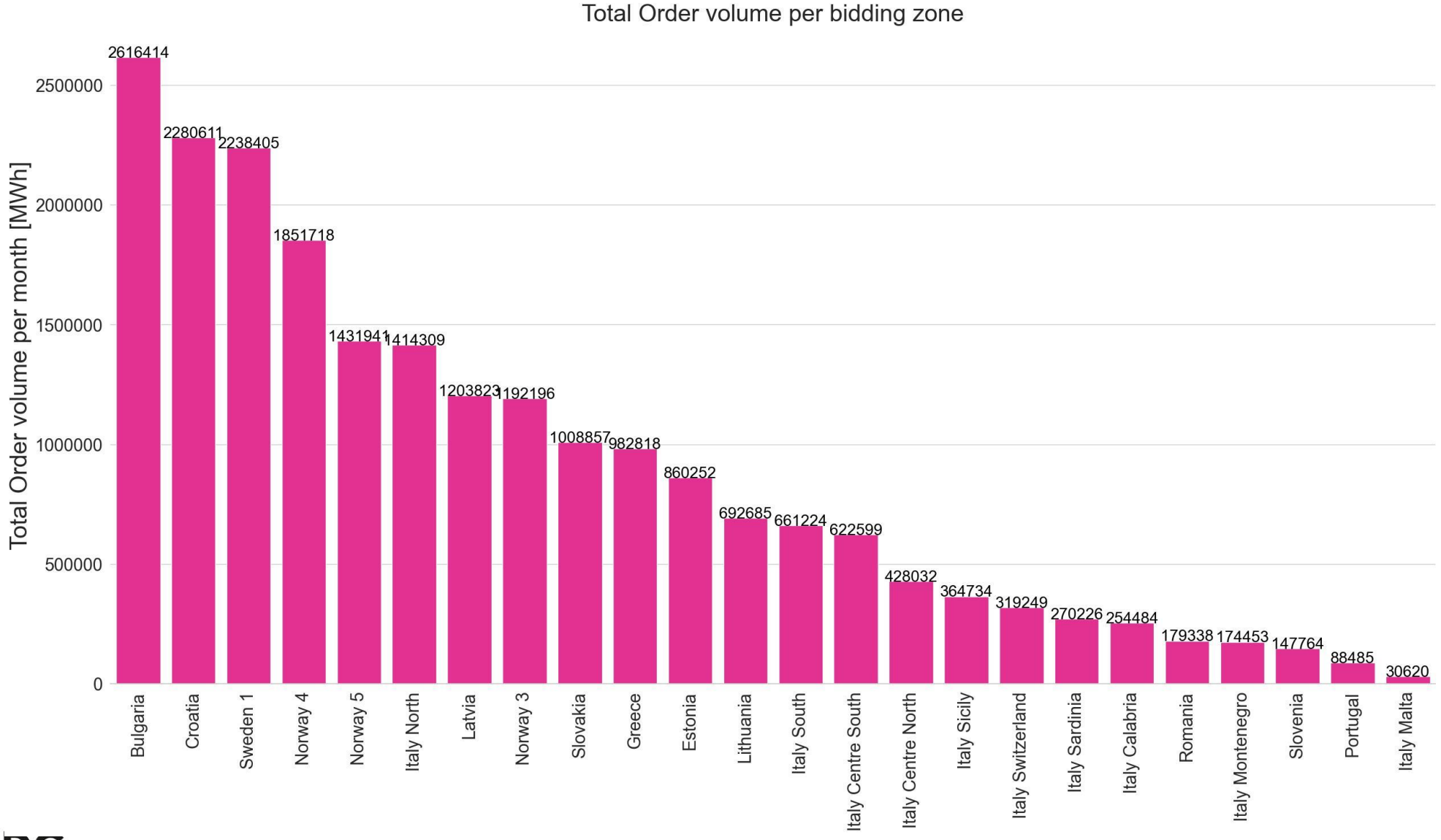


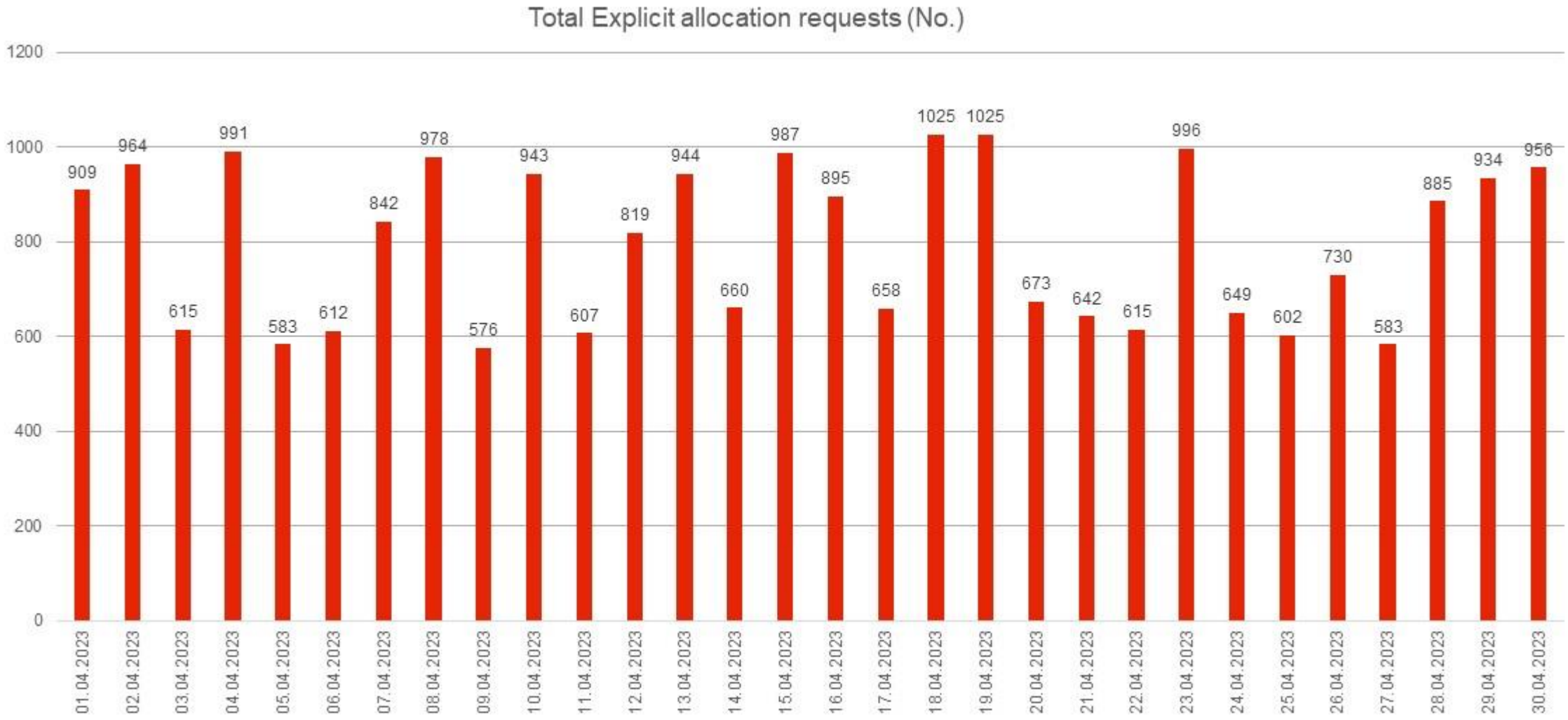
2. Indicators to describe the usage of continuous SIDC algorithm products (11/12)



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

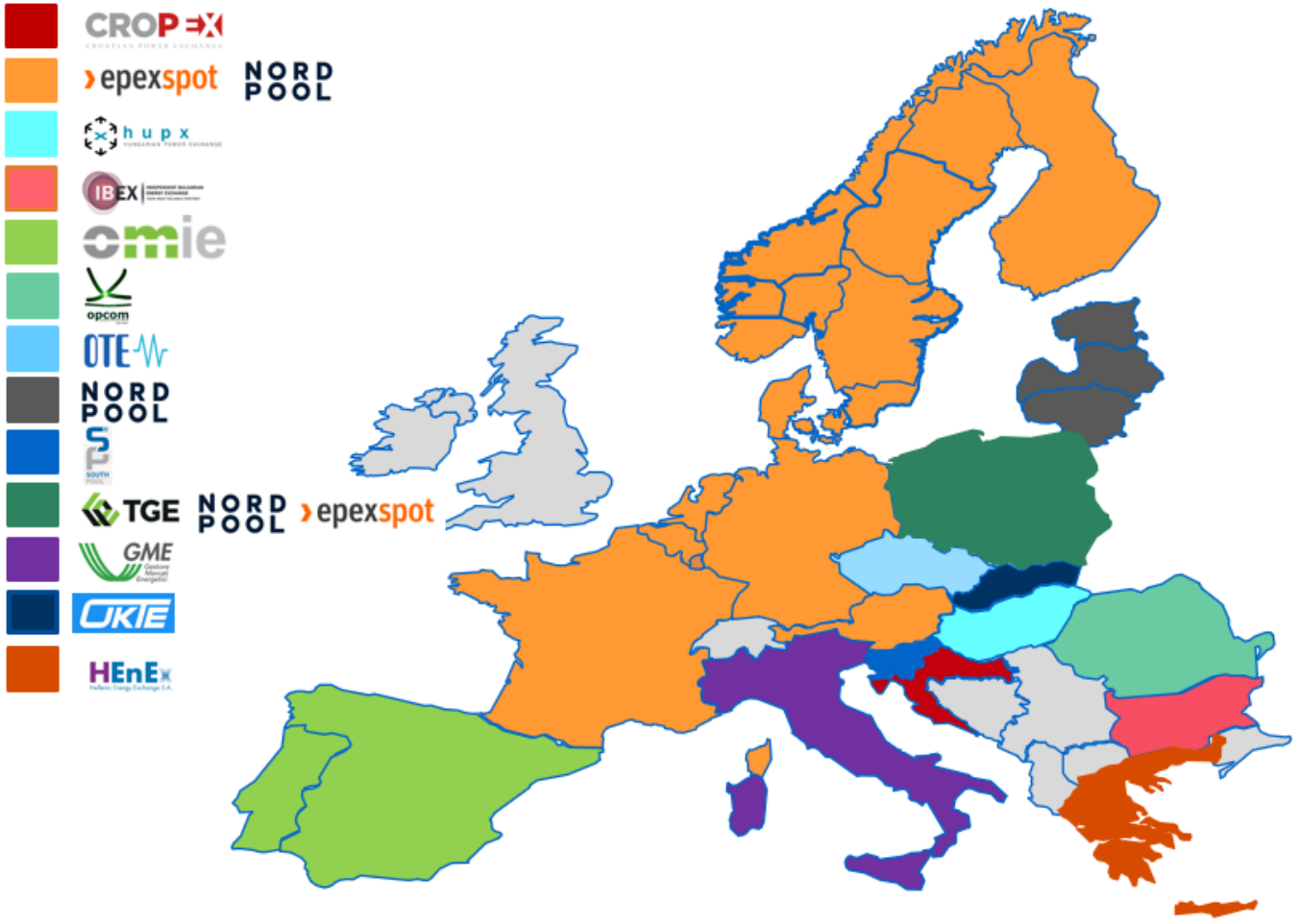


3. Indicator to describe the usage of Explicit Capacity Allocation



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

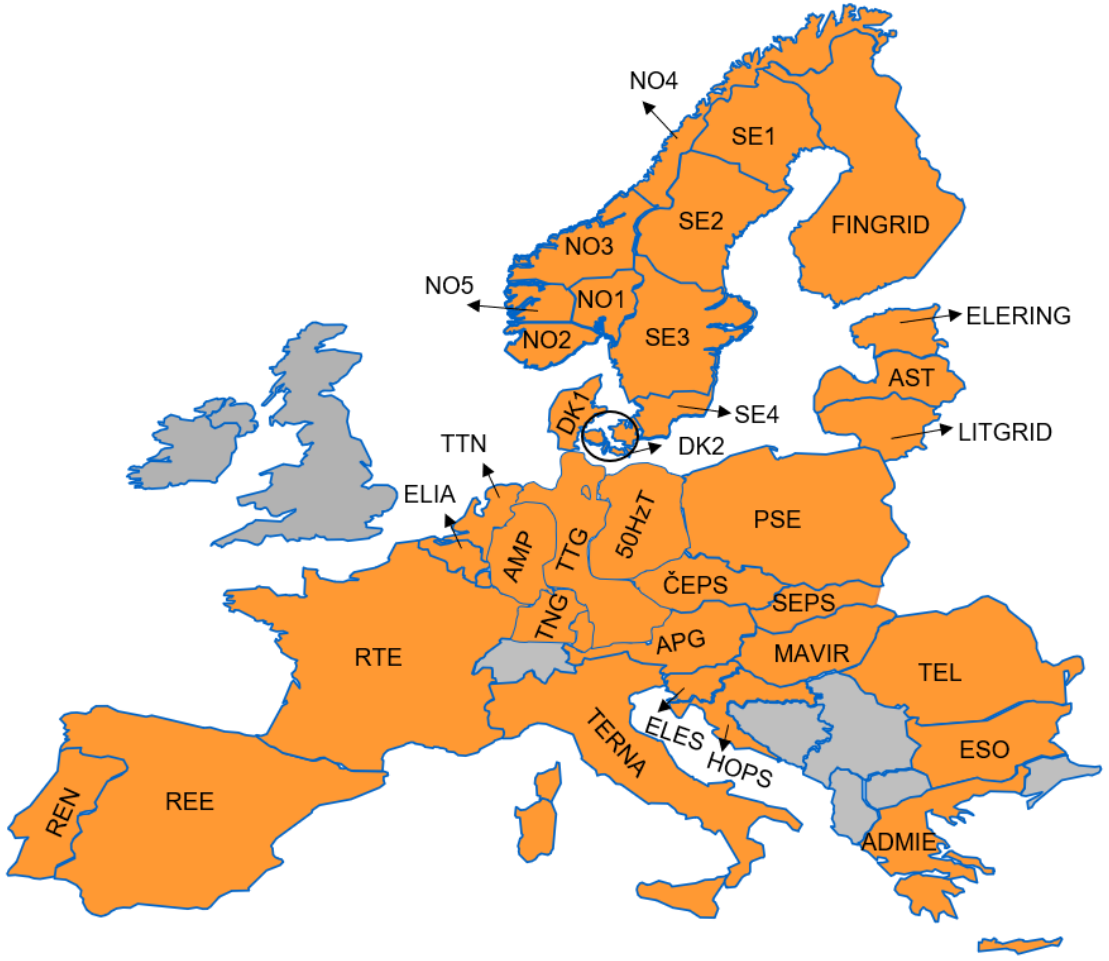
SIDC NEMOs



There are 13 NEMOs in SIDC. Some areas have more than one NEMO (MNA - Multi NEMO Area)

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

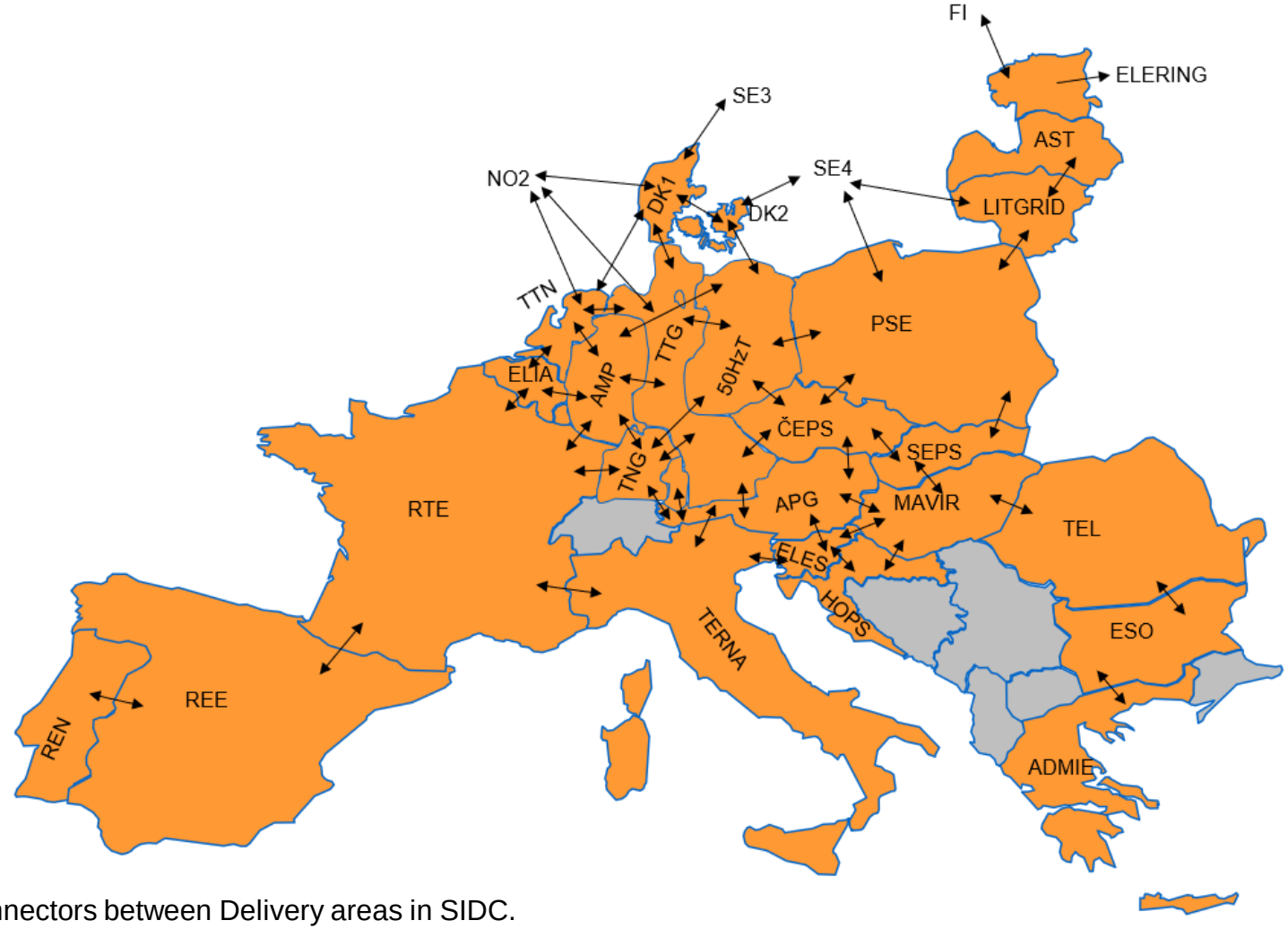
SIDC Delivery areas



There are 53 Delivery areas in SIDC. Denmark, Italy, Norway and Sweden are divided to several delivery areas.

4. Indicators to describe the geographical extension of continuous SIDC (3/8)

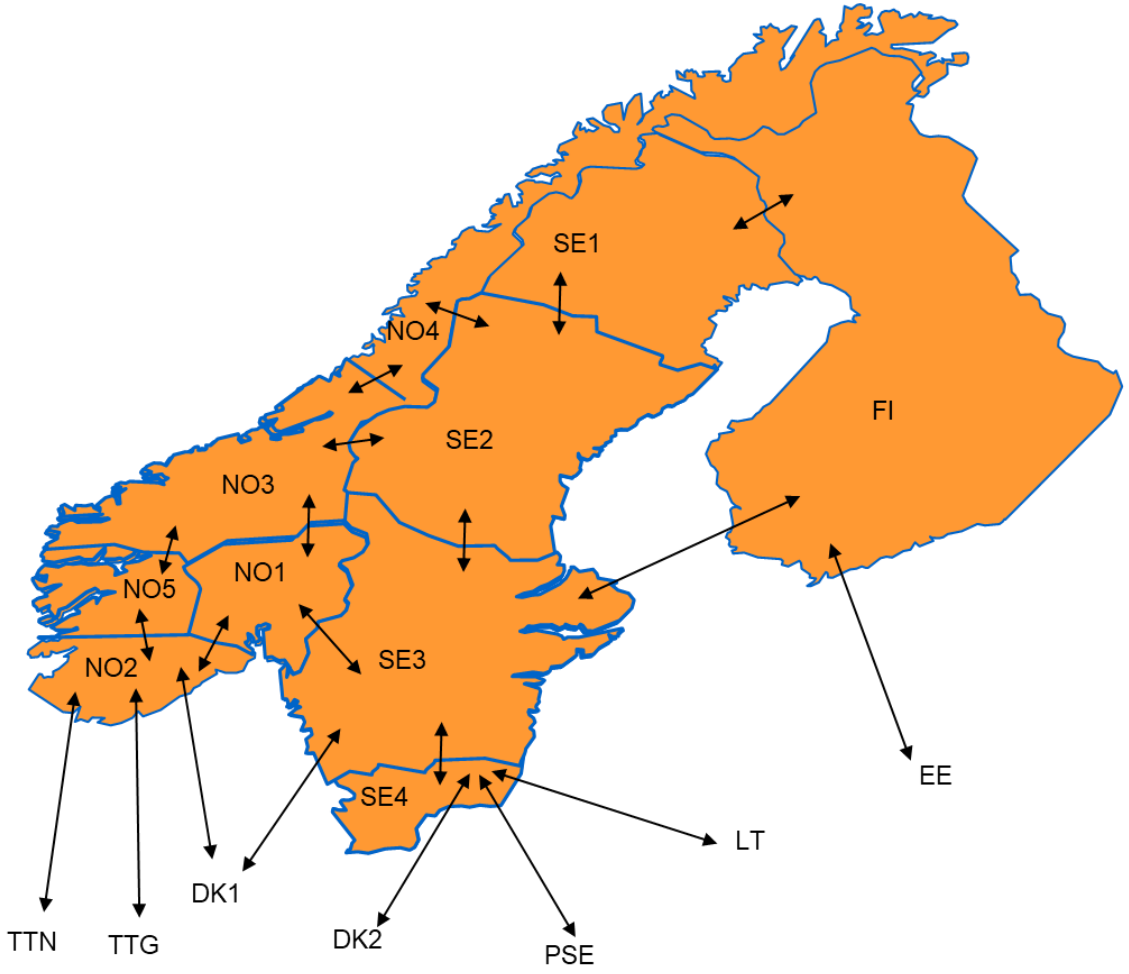
SIDC Interconnectors – Continental Europe



There are in total 70 interconnectors between Delivery areas in SIDC.

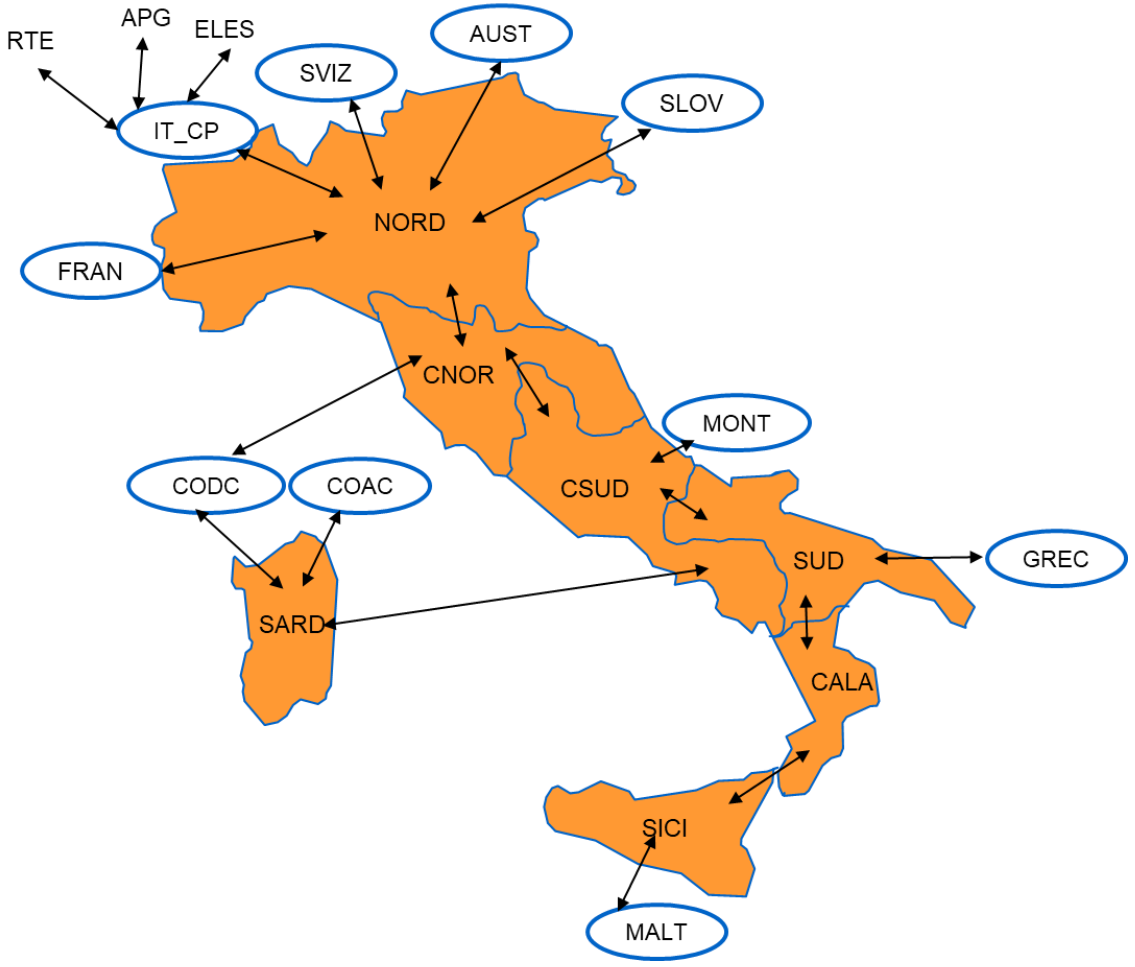
4. Indicators to describe the geographical extension of continuous SIDC (4/8)

SIDC Interconnectors - Nordics area



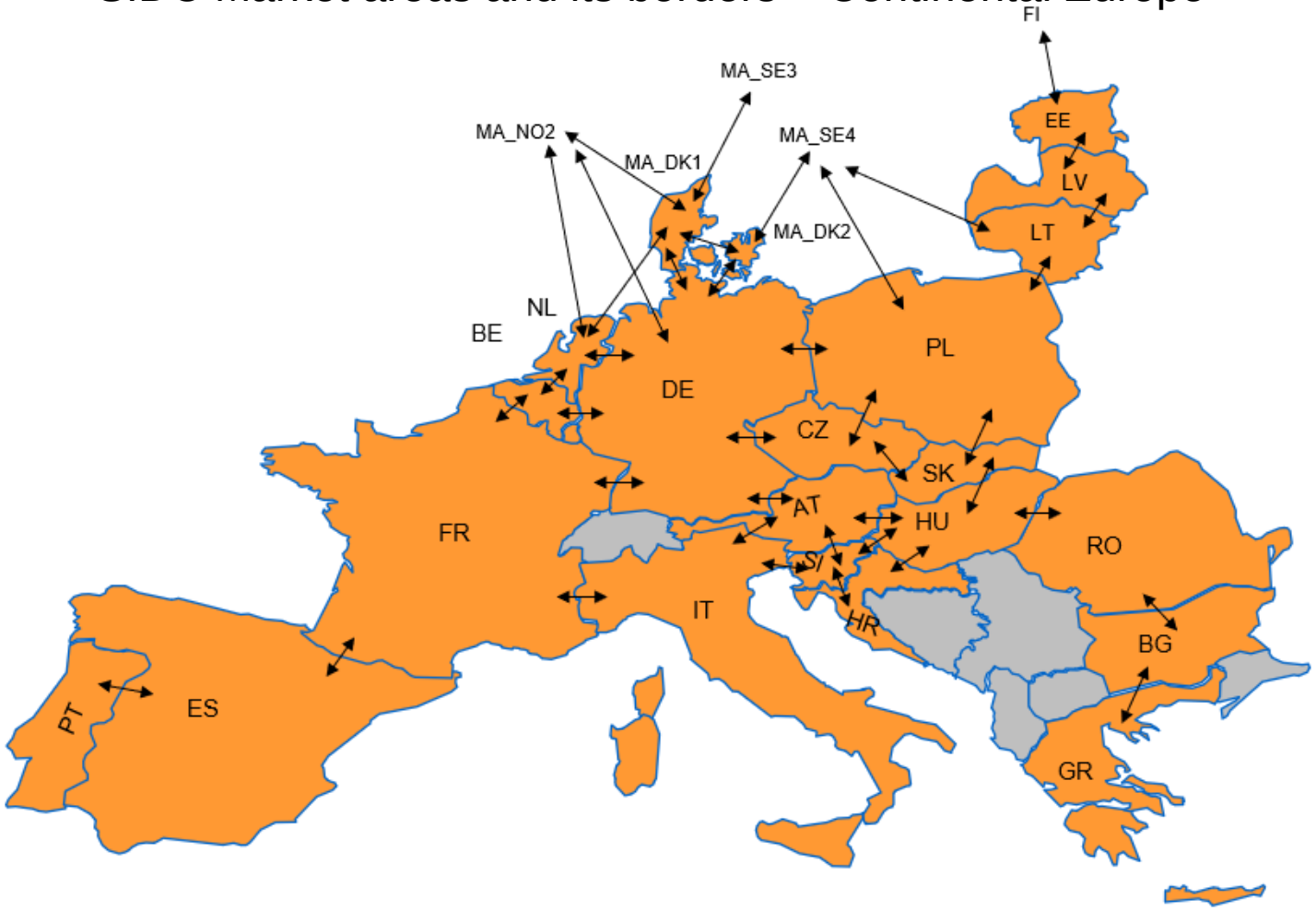
4. Indicators to describe the geographical extension of continuous SIDC (5/8)

SIDC Interconnectors - Italy



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

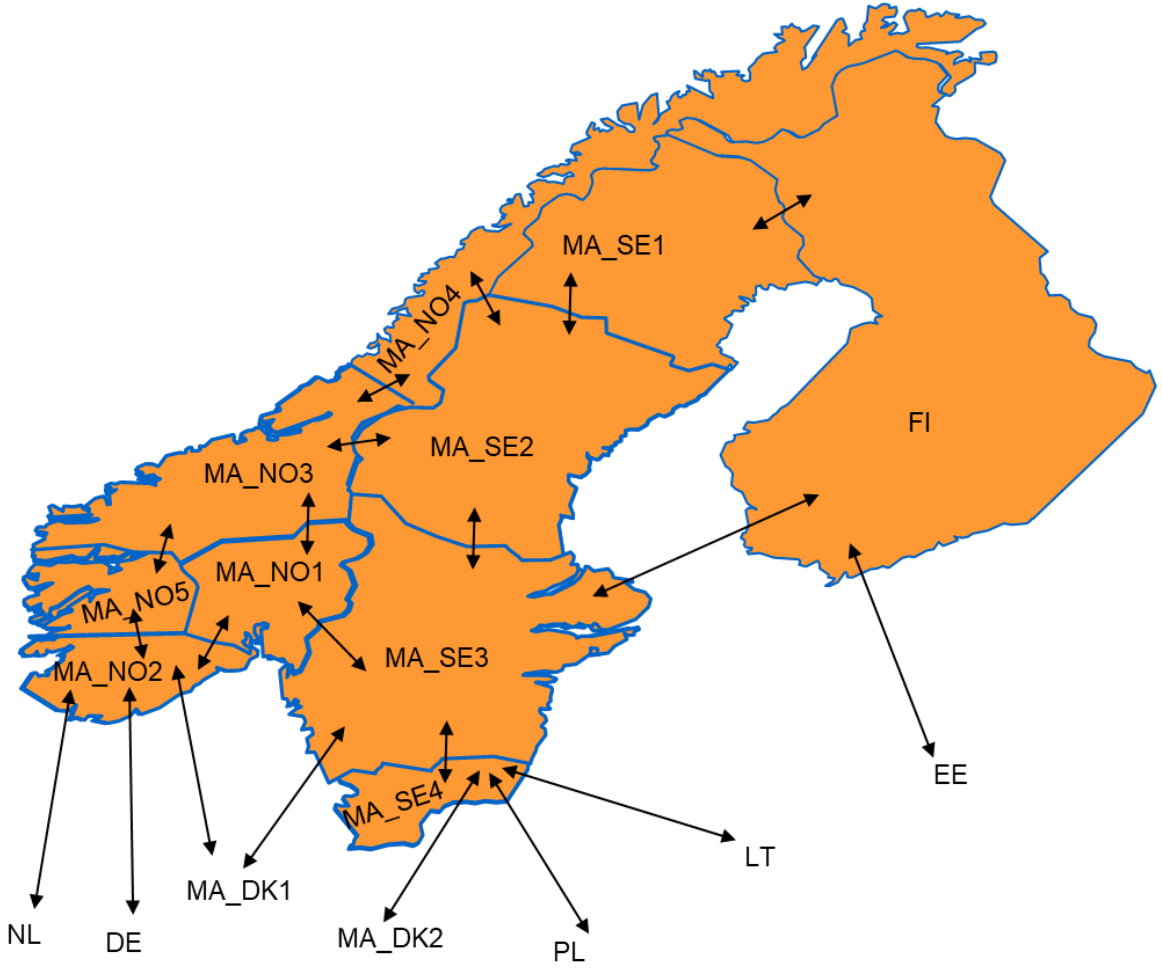
SIDC Market areas and its borders – Continental Europe



There are 34 Market areas and 59 Borders in SIDC.

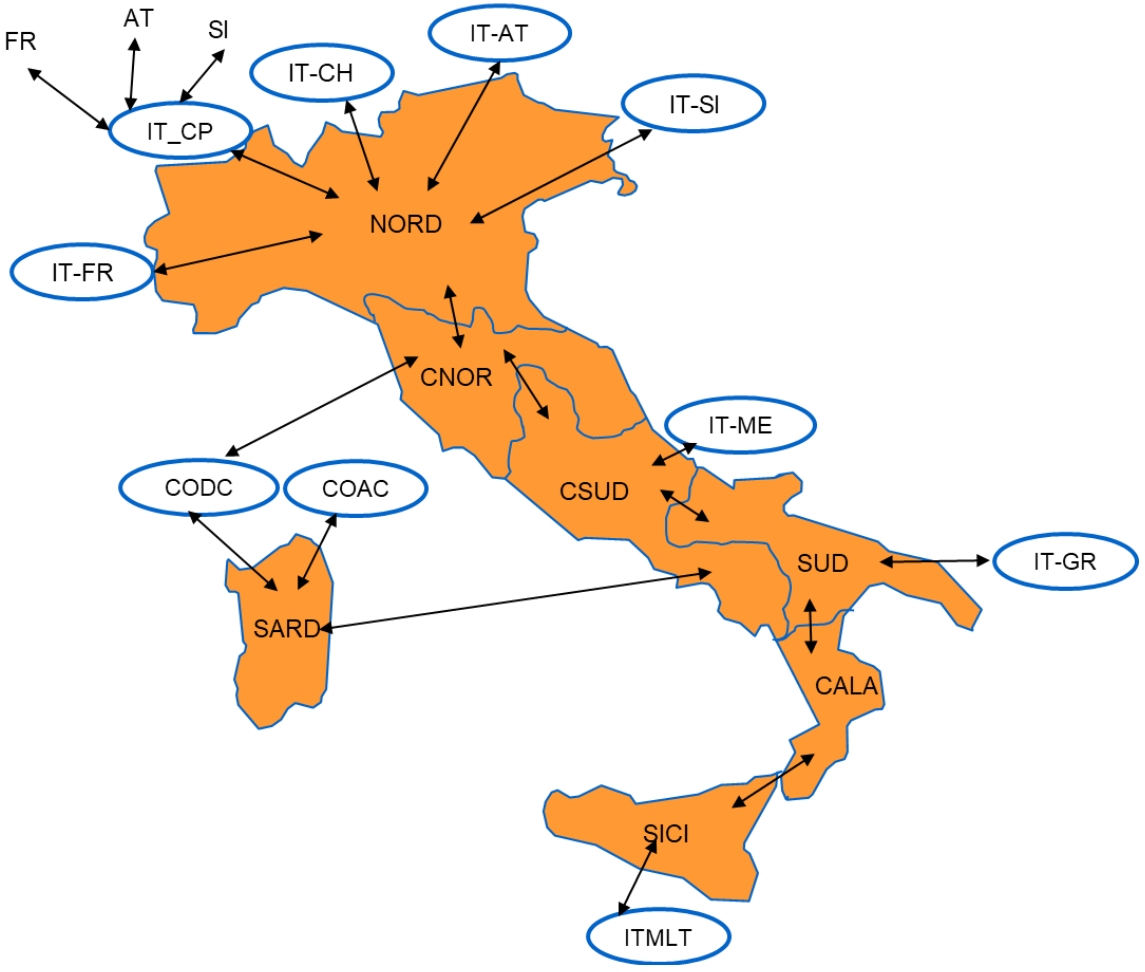
4. Indicators to describe the geographical extension of continuous SIDC (7/8)

SIDC Market areas and its borders – Nordics area

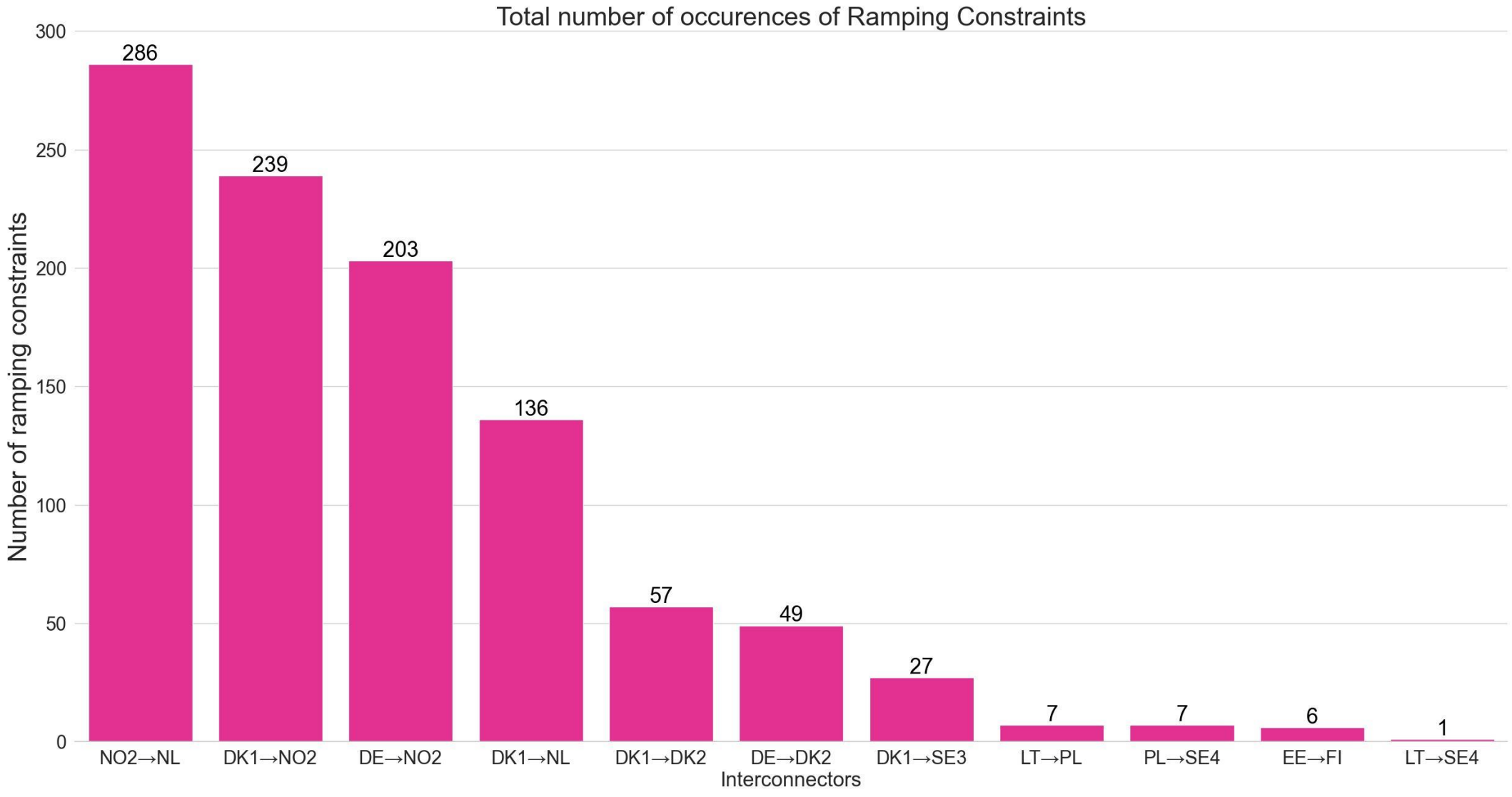


4. Indicators to describe the geographical extension of continuous SIDC (8/8)

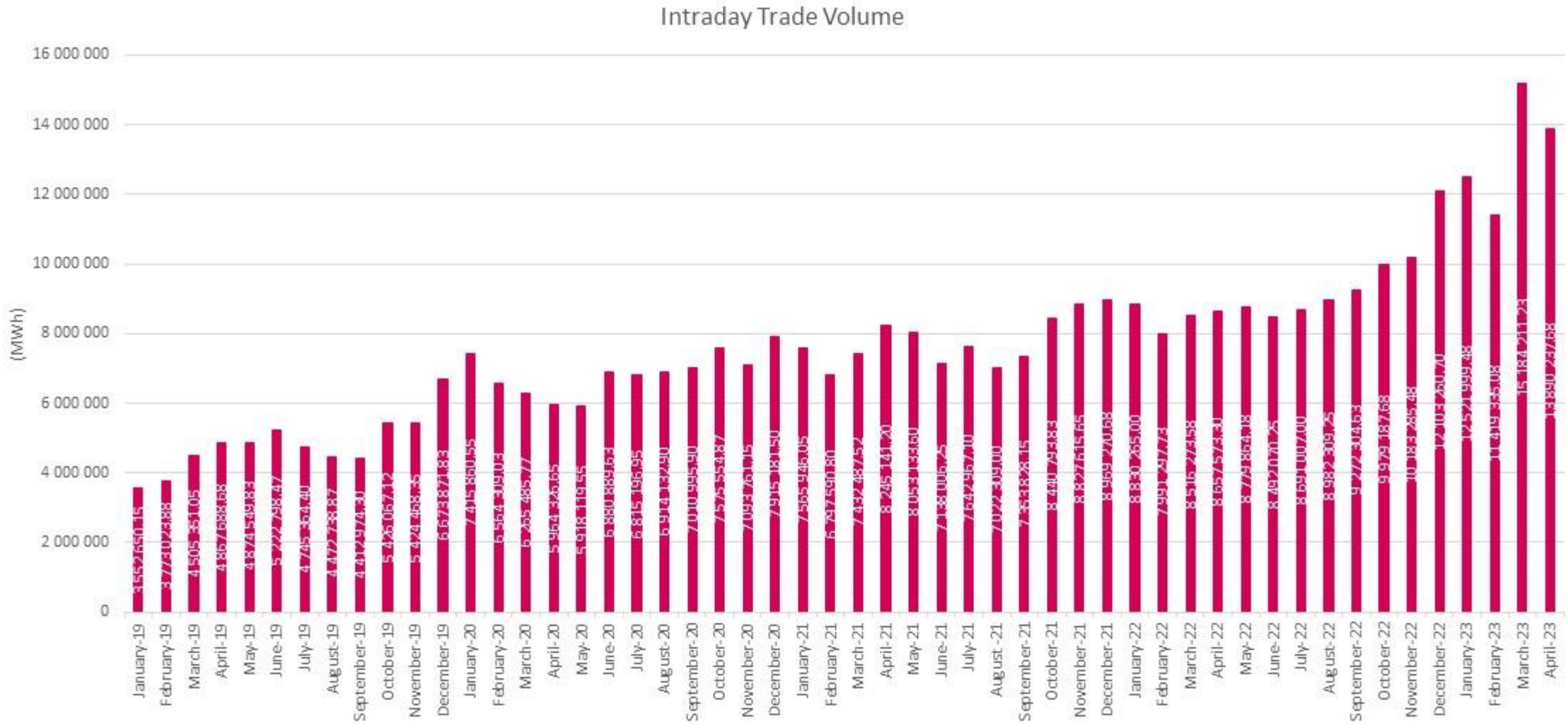
SIDC Market areas and its borders – Italy



5. Indicators to describe the network constraints



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



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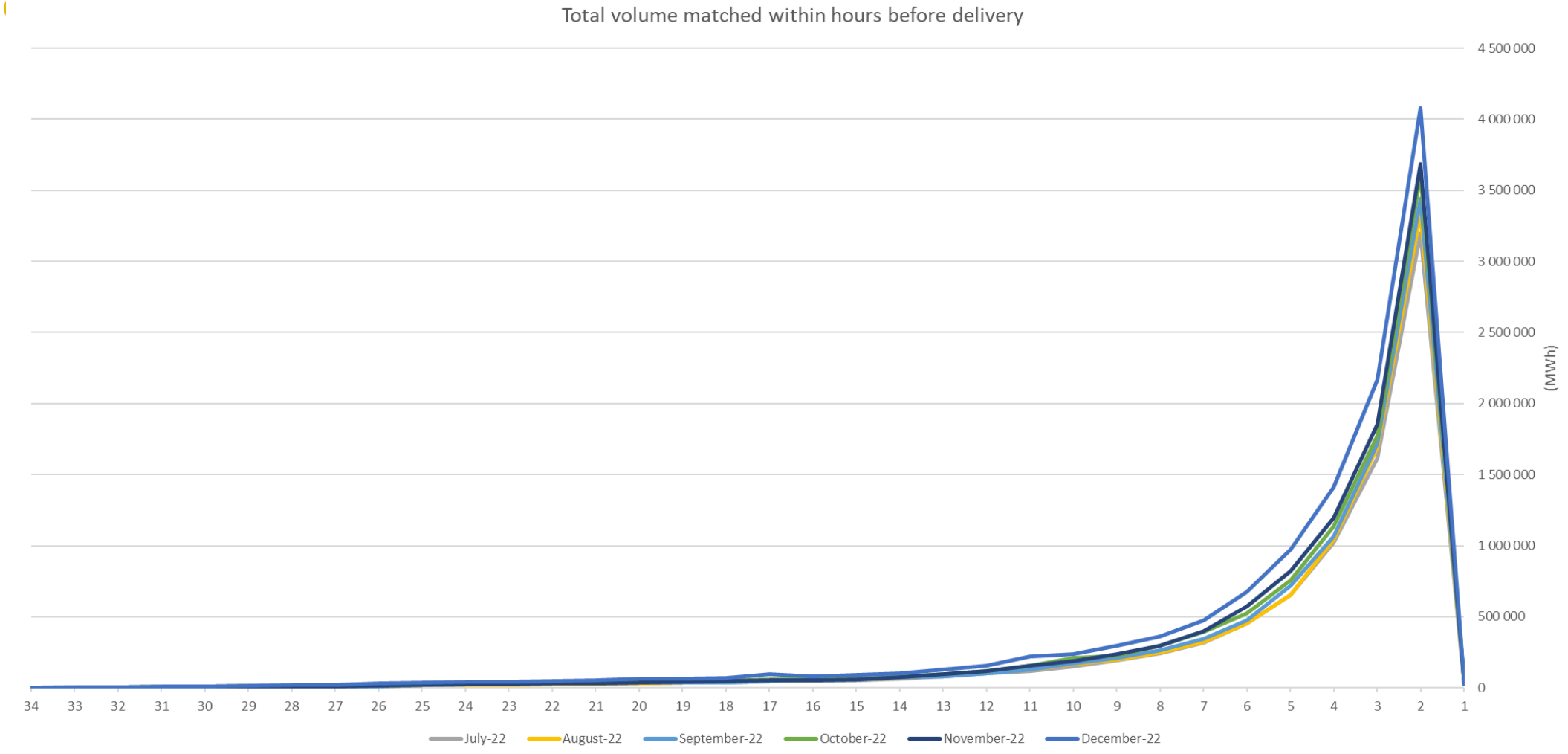
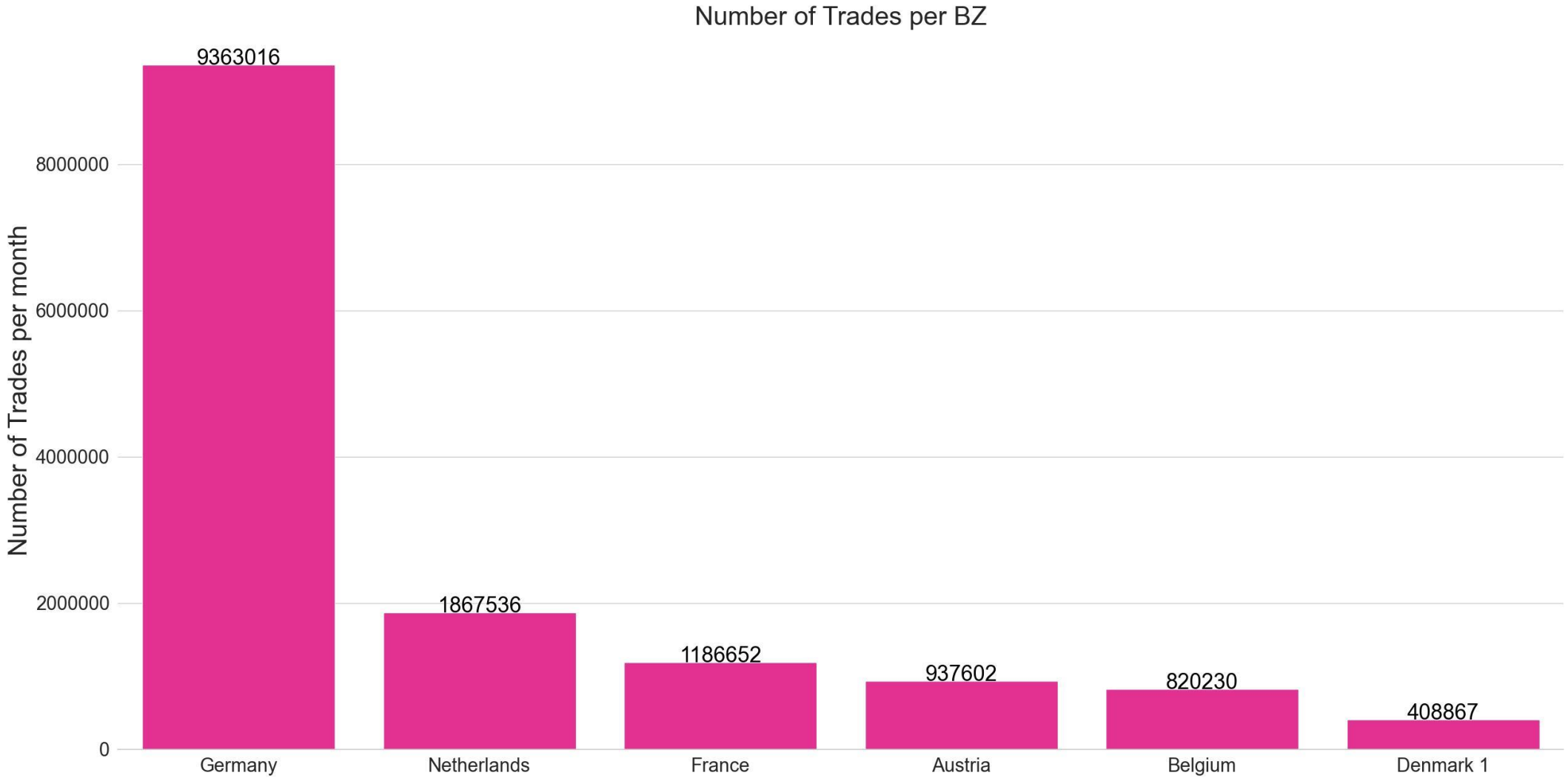
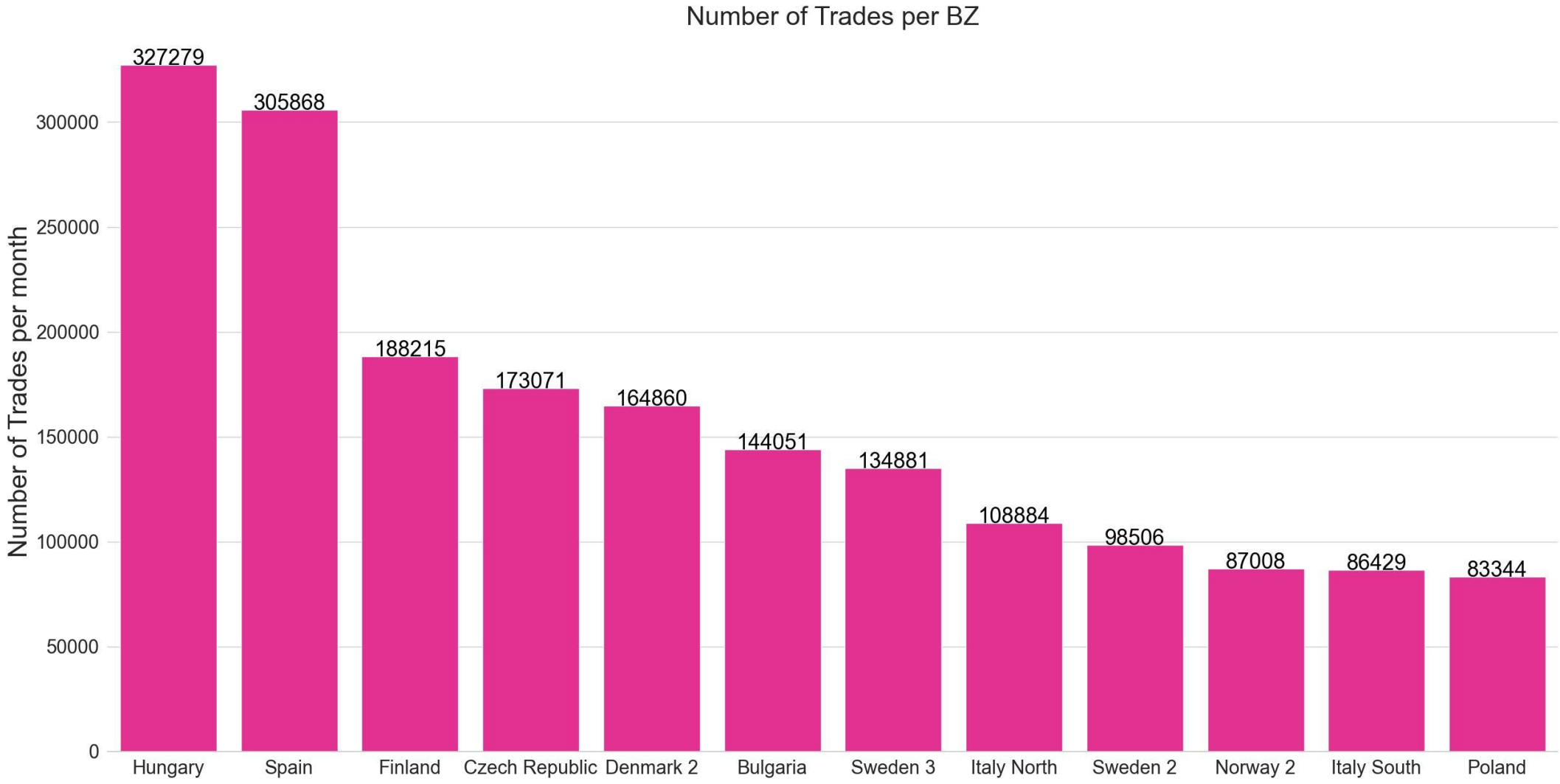


Please avoid misinterpretation of the line(s) between “1” and “0” being aware that the volume matched between 1 hour to 30 minutes is substantially lower (in thousands of MWhs) and there is no volume matched between 30 minutes to 0.

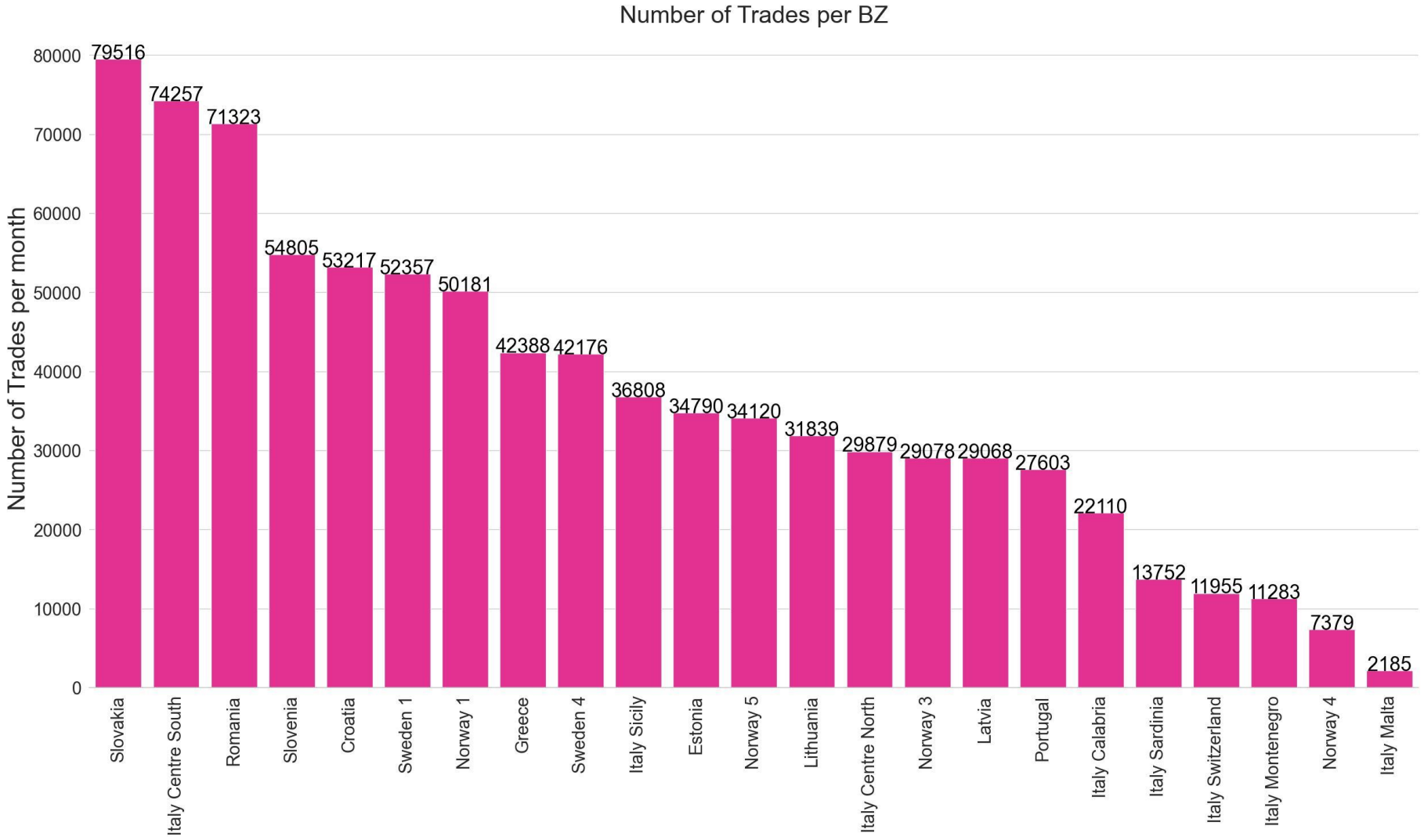
6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (3/8)



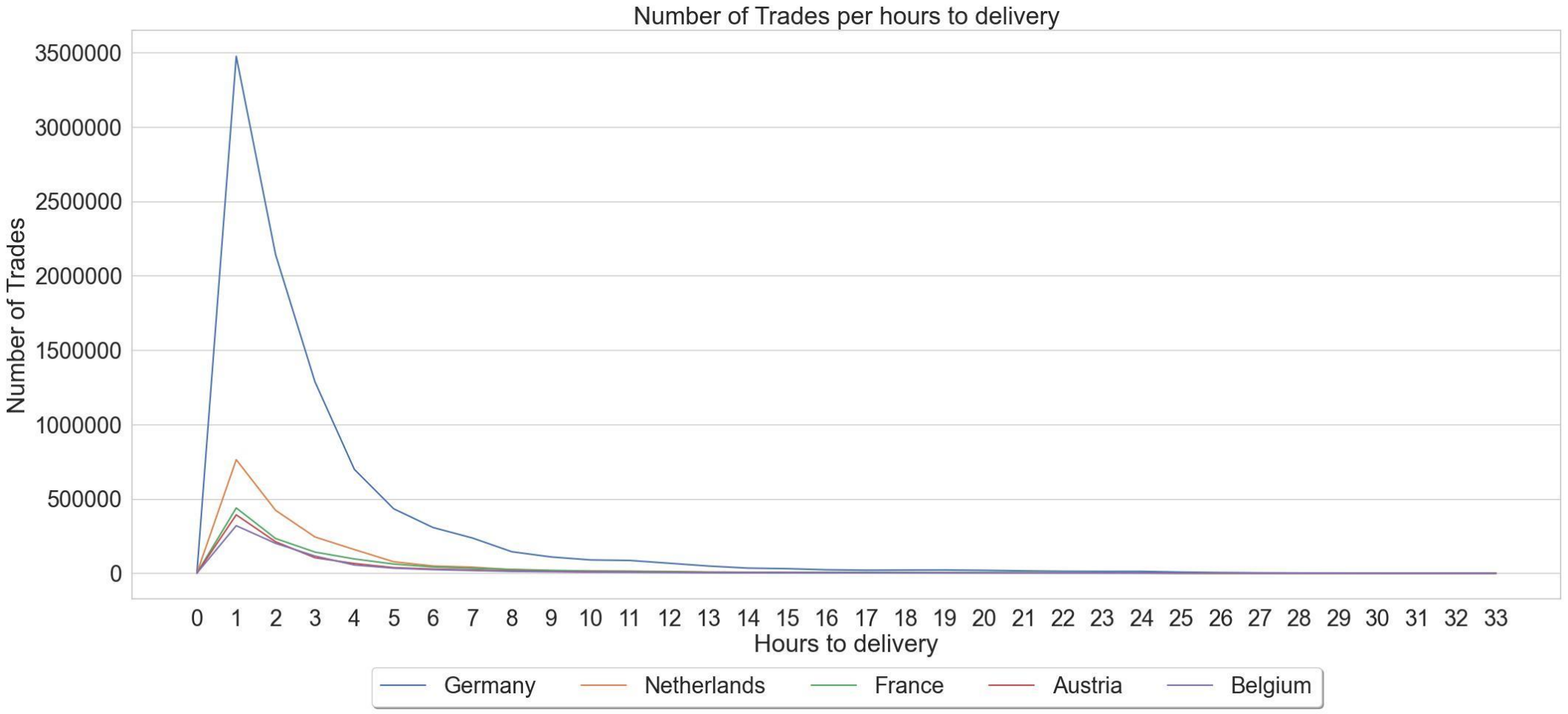
6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (4/8)



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

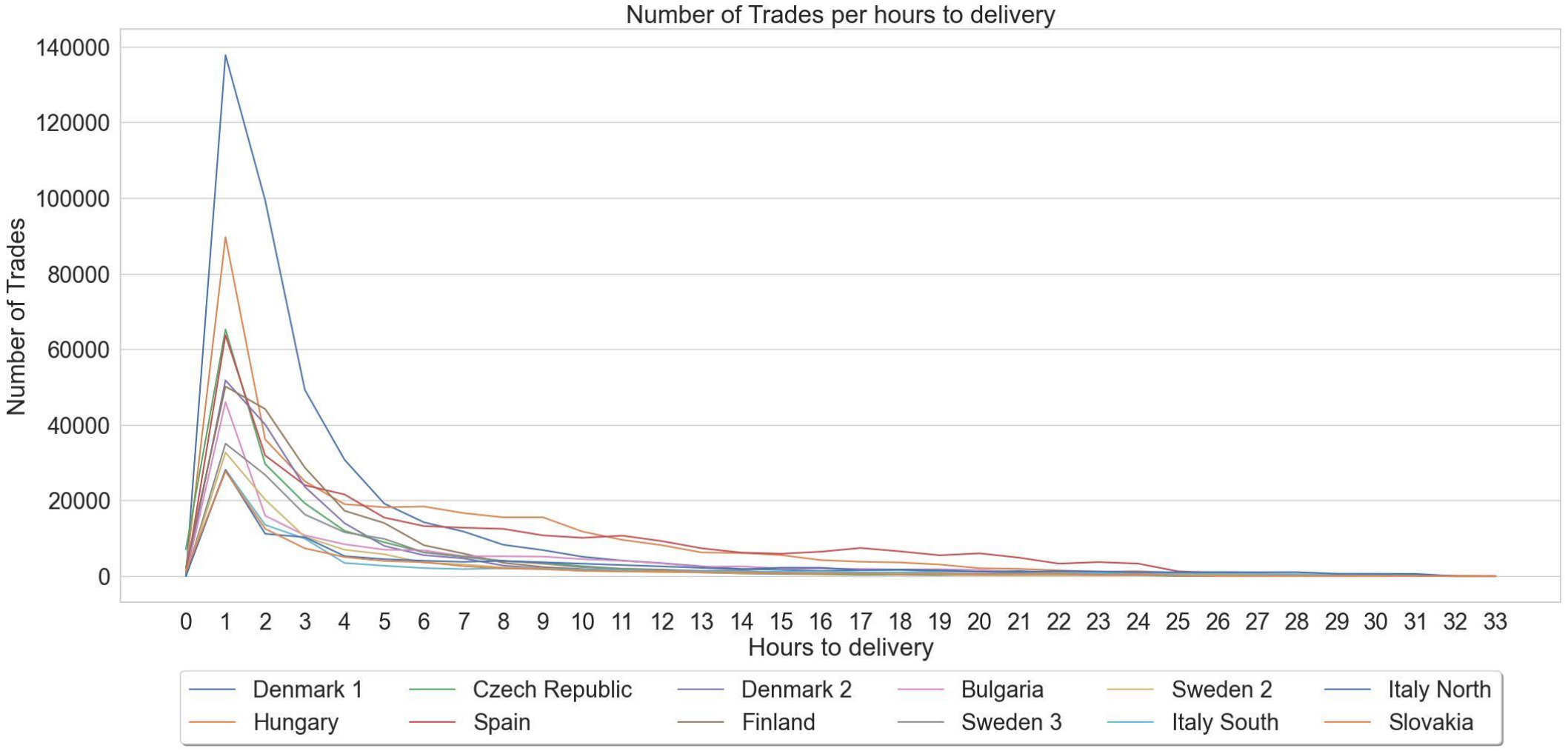


6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (6/8)



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)



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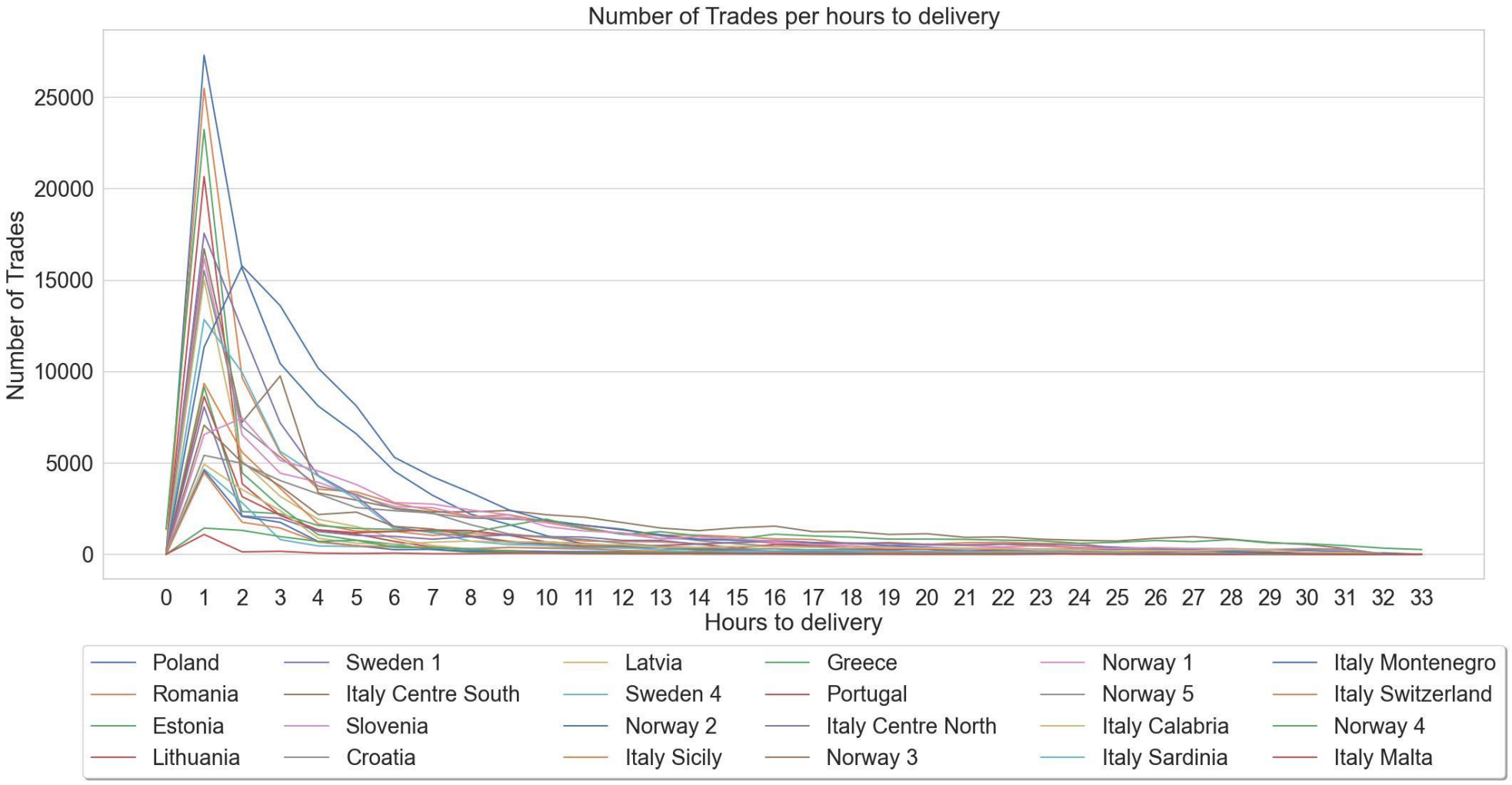
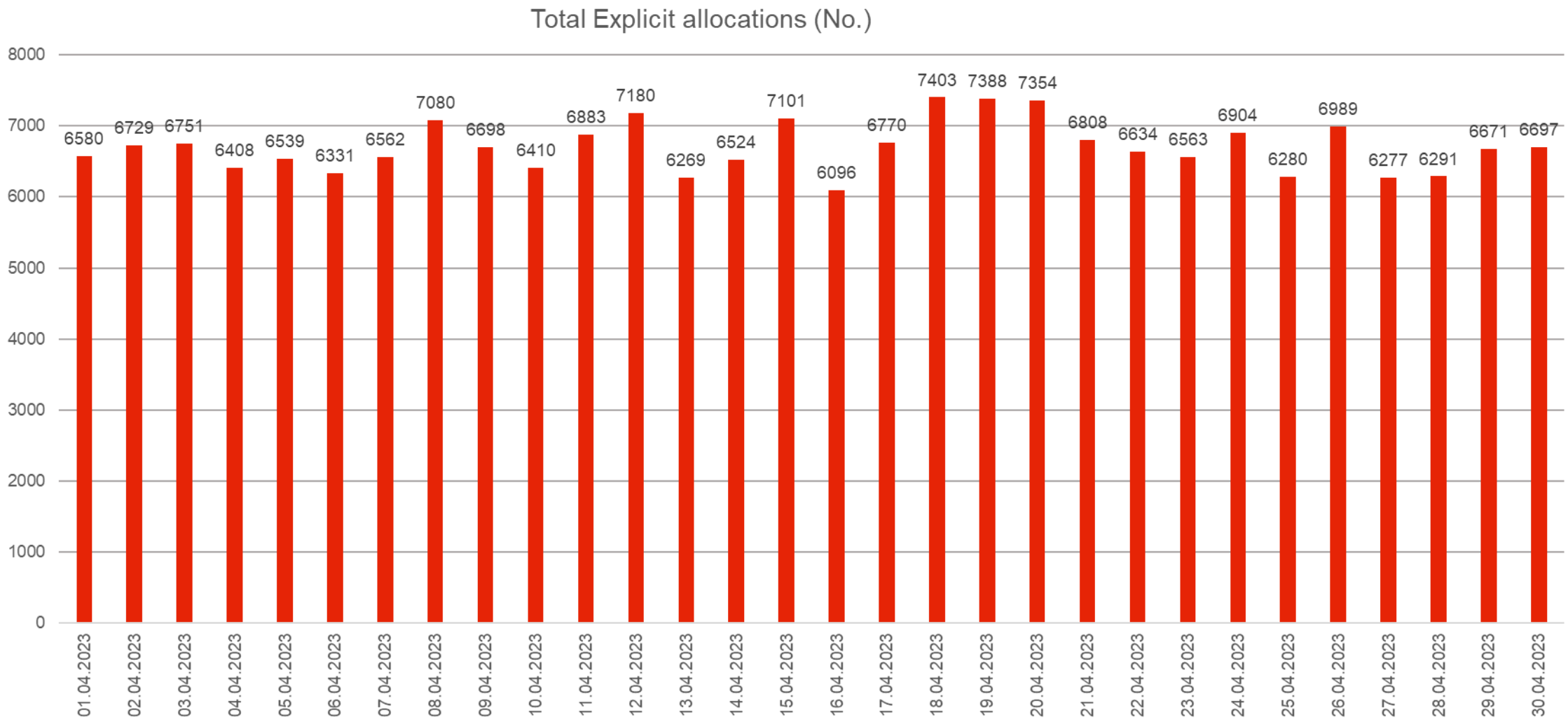
6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (8/8)

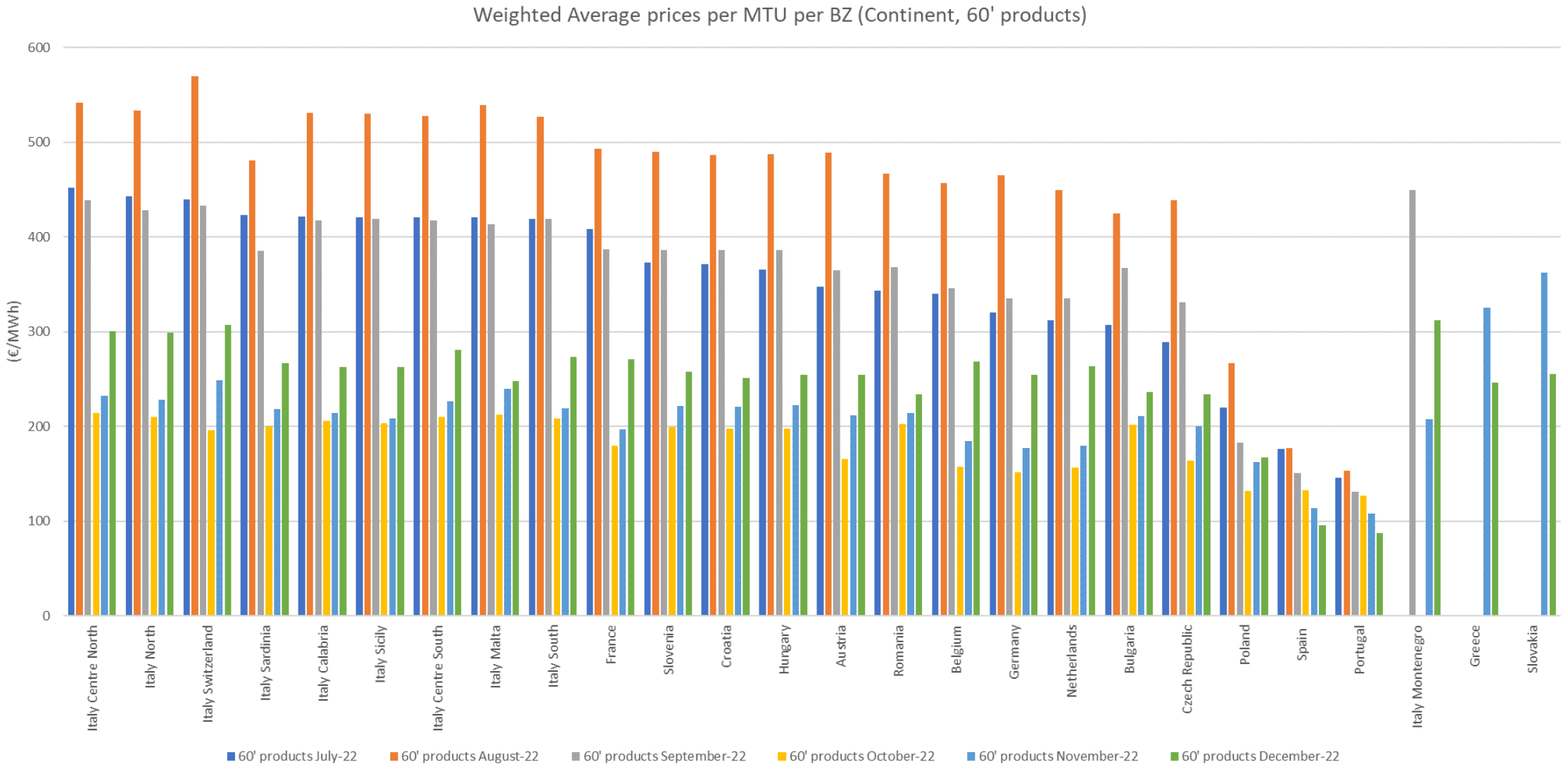


Please avoid misinterpretation of the line(s) between “1” and “0” being aware that the number of trades between 1 hour to 30 minutes is substantially lower (in hundreds) and there is no volume matched between 30 minutes to 0.

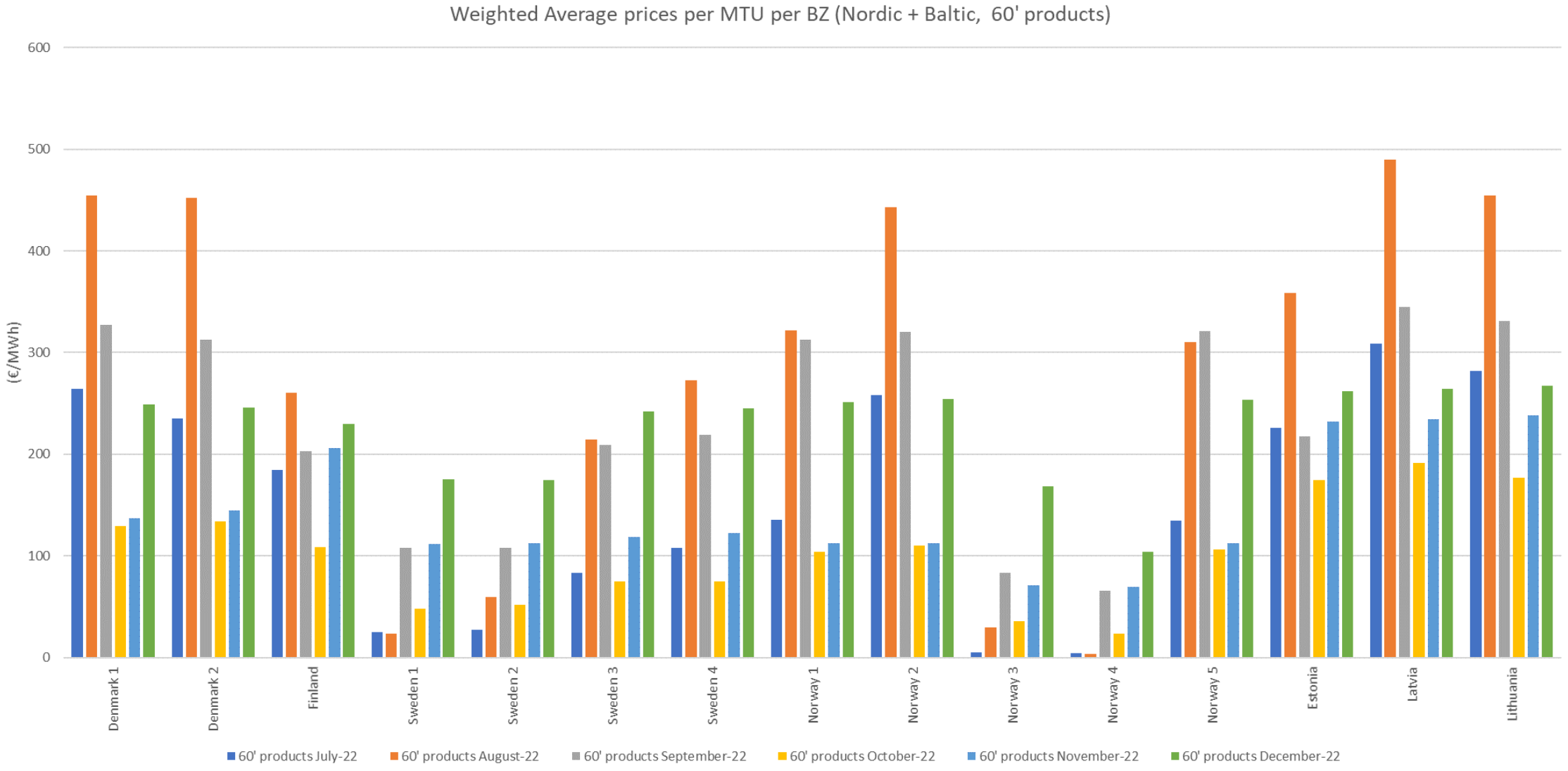
7. Indicators on the evolution of the number of Explicit Capacity Allocations



8. Indicators on the prices (1/3)



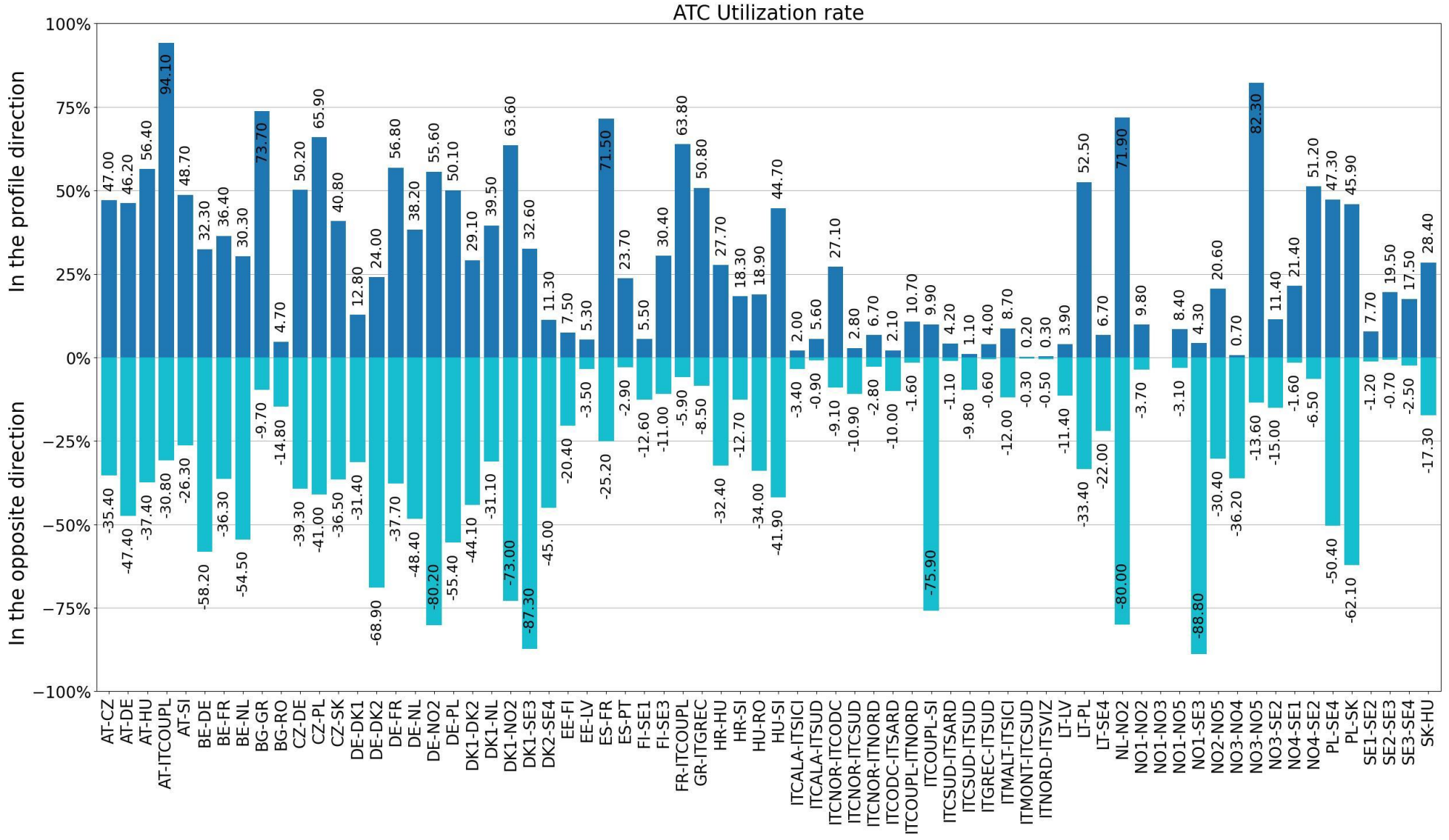
8. Indicators on the prices (2/3)



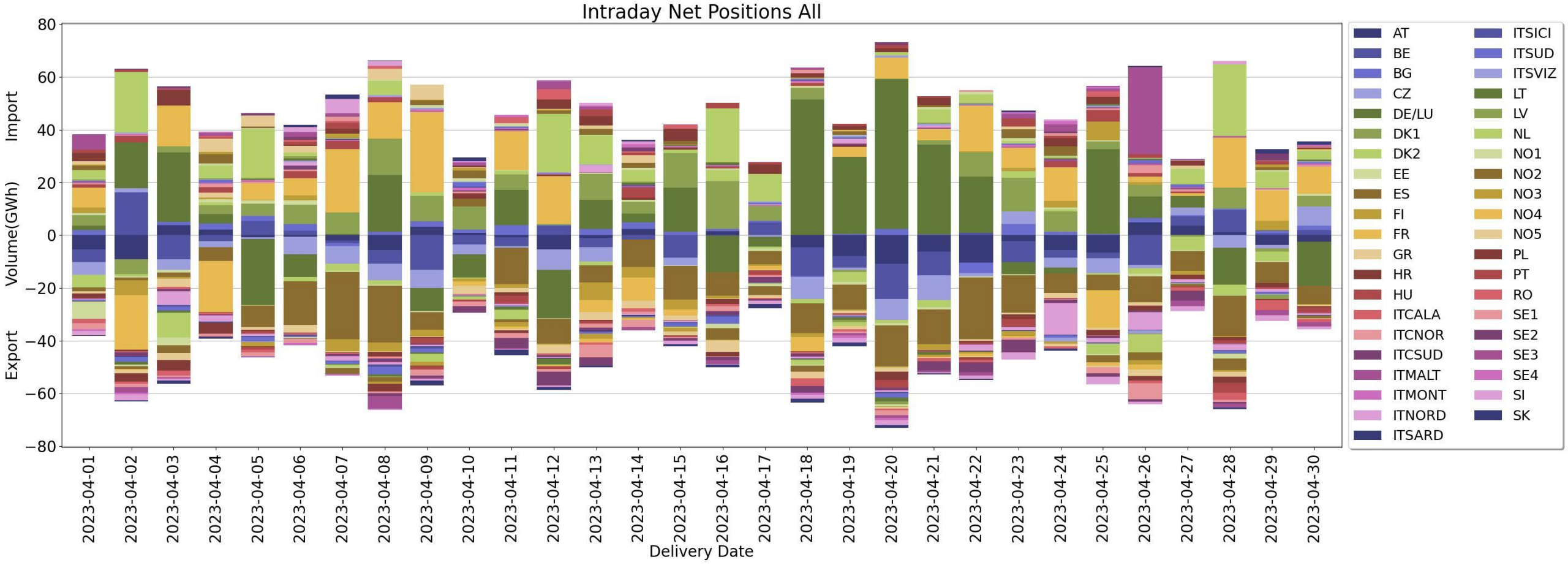
8. Indicators on the prices (3/3)

Indicator		H2 2022		
		Avg	Min	Max
Volume-Weighted Average Intraday Prices – last trading hour (€/MWh)	Hour Product	254,60	- 423,13	3 066,95
	Half-hour Product	302,87	- 71,93	1 200,00
	¼ Hour Product	291,46	- 599,95	1 462,27
	Block Product	143,87	0,00	800,00
Bid-Ask Spread (€/MWh)	Hour Product	139,16	0,01	8 884,44
	Half-hour Product	216,17	0,50	10 057,01
	¼ Hour Product	265,83	0,02	15 999,98
	Block Product	200,62	-61,28	4 722,00

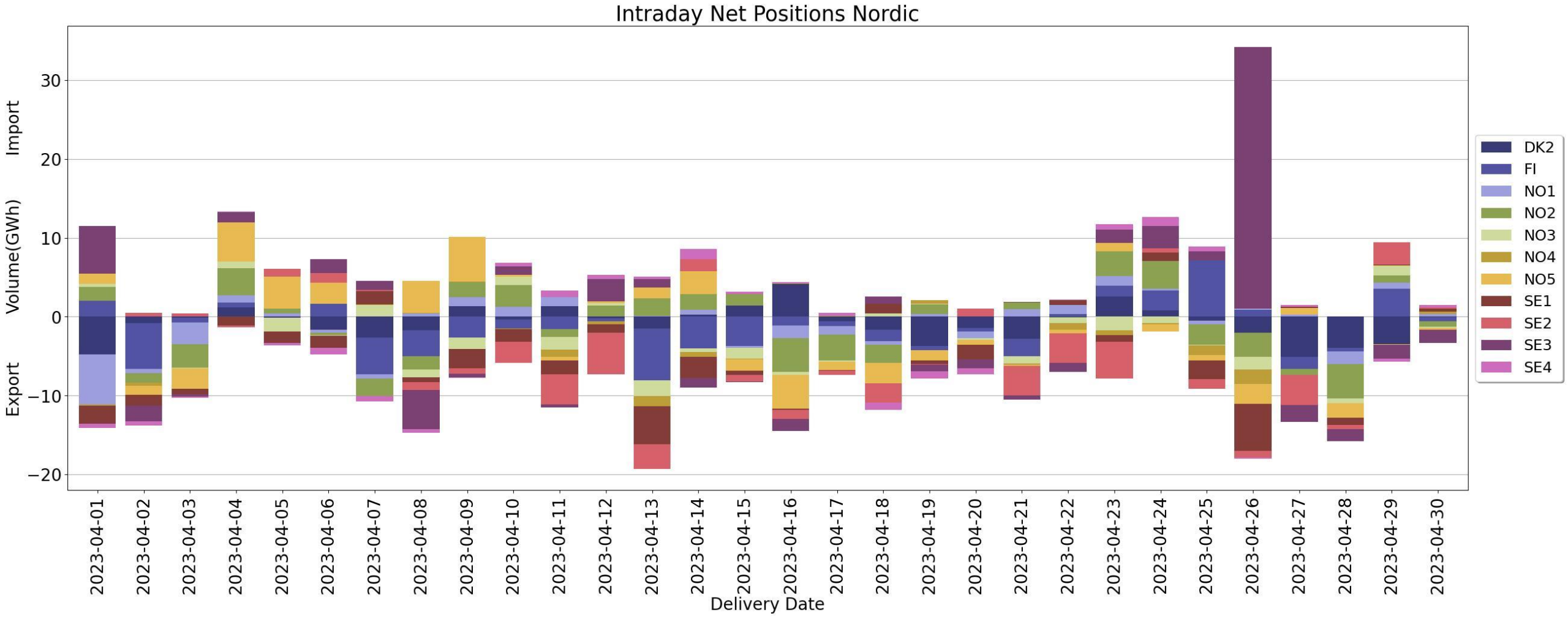
9. Indicators on the capacities



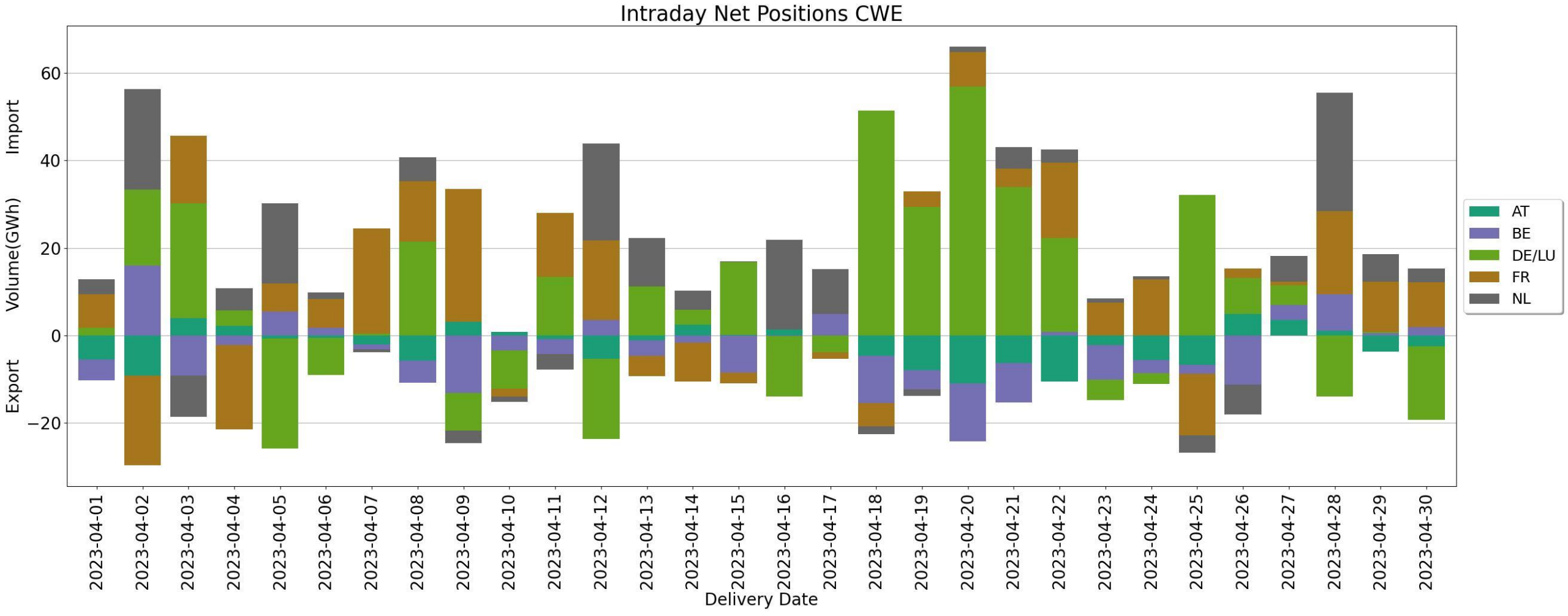
10. Indicators on Net Positions (1/11)



10. Indicators on Net Positions (2/11)



10. Indicators on Net Positions (3/11)



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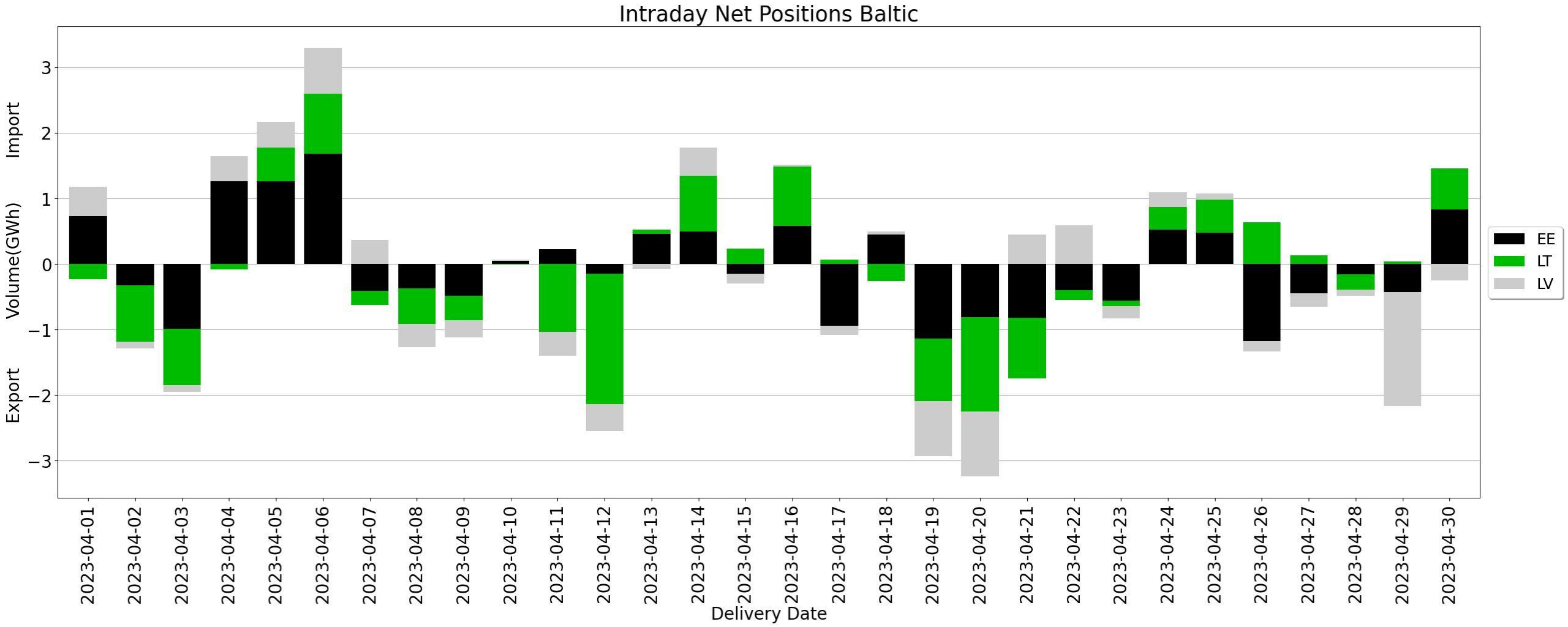
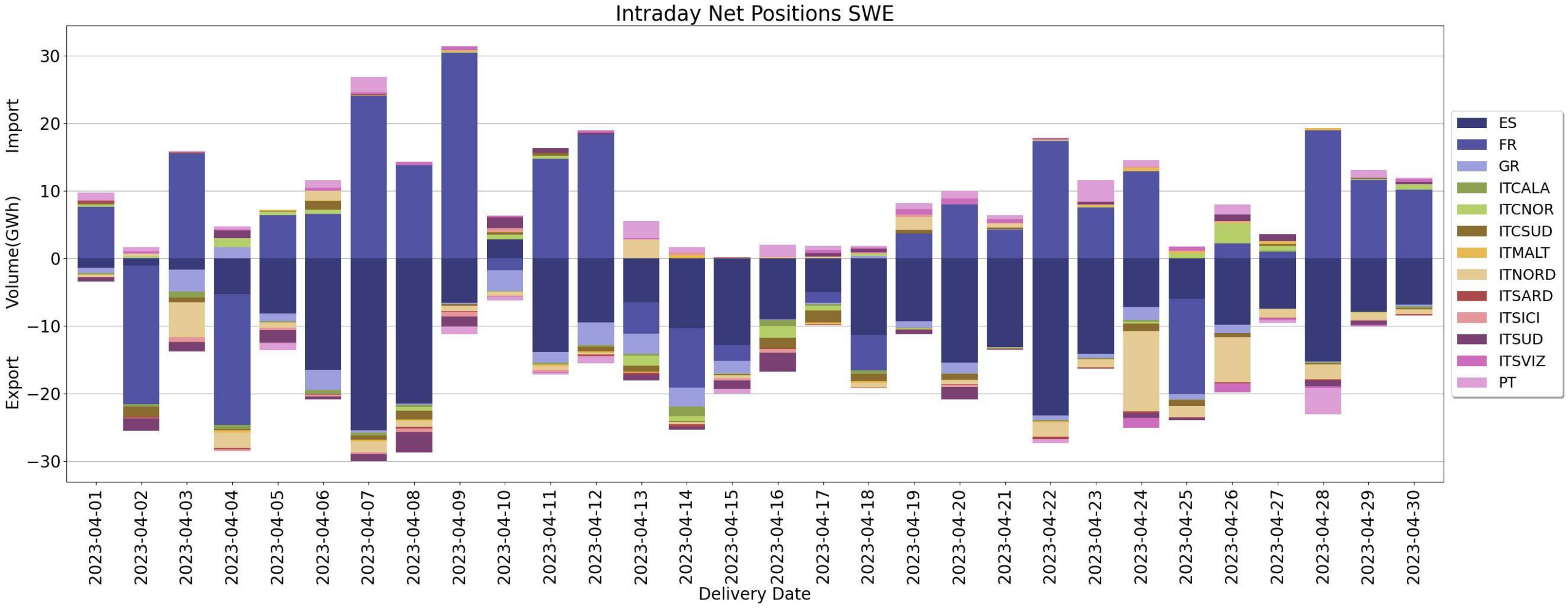
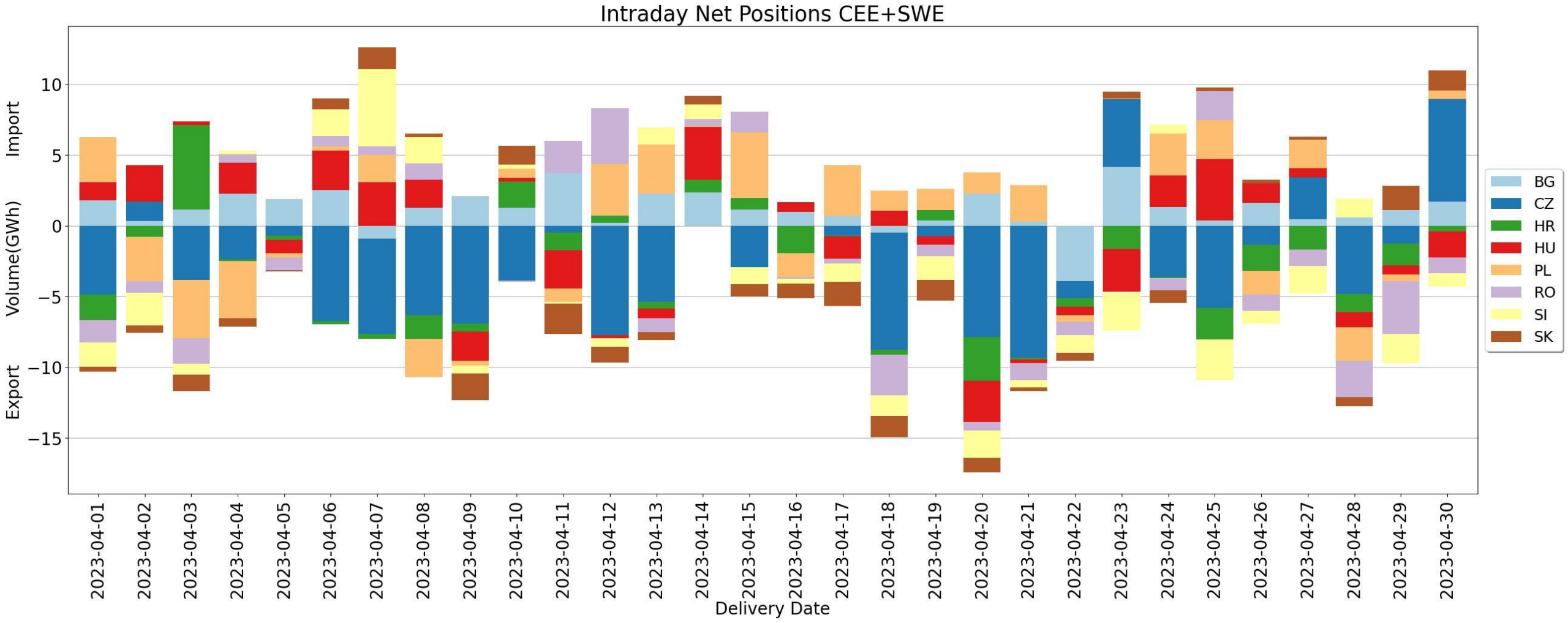


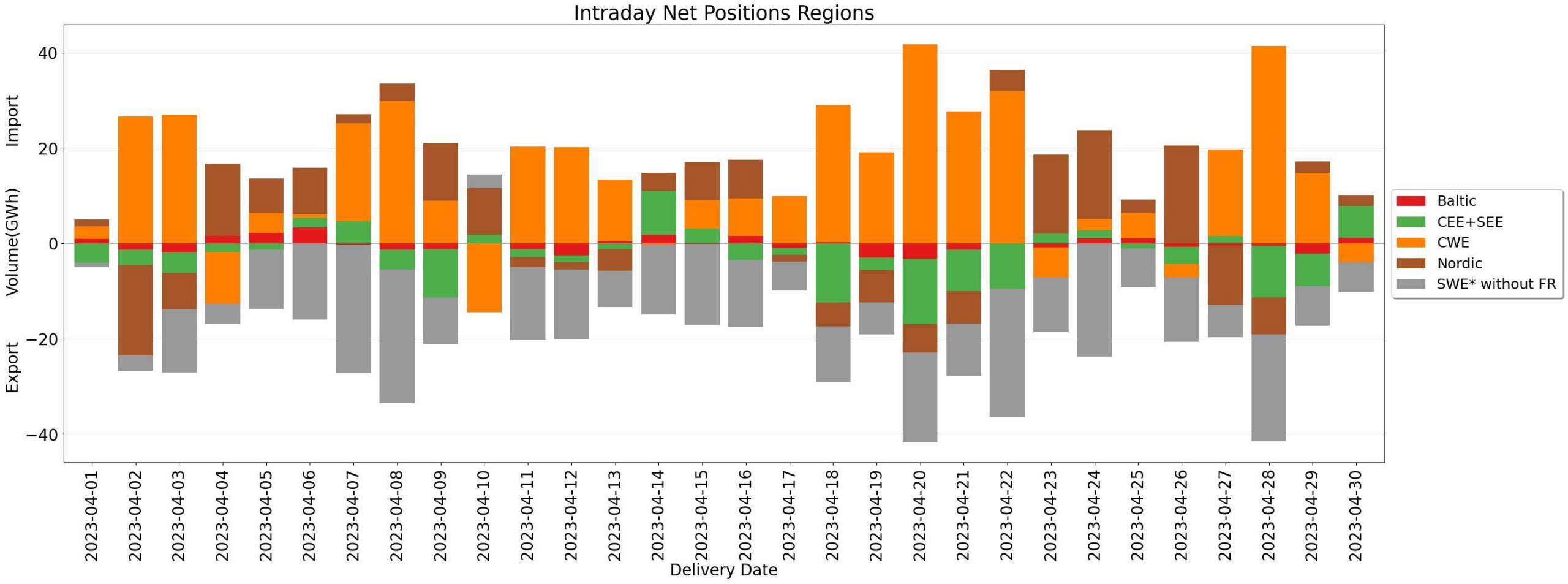
10. Indicators on Net Positions (5/11)



10. Indicators on Net Positions (6/11)



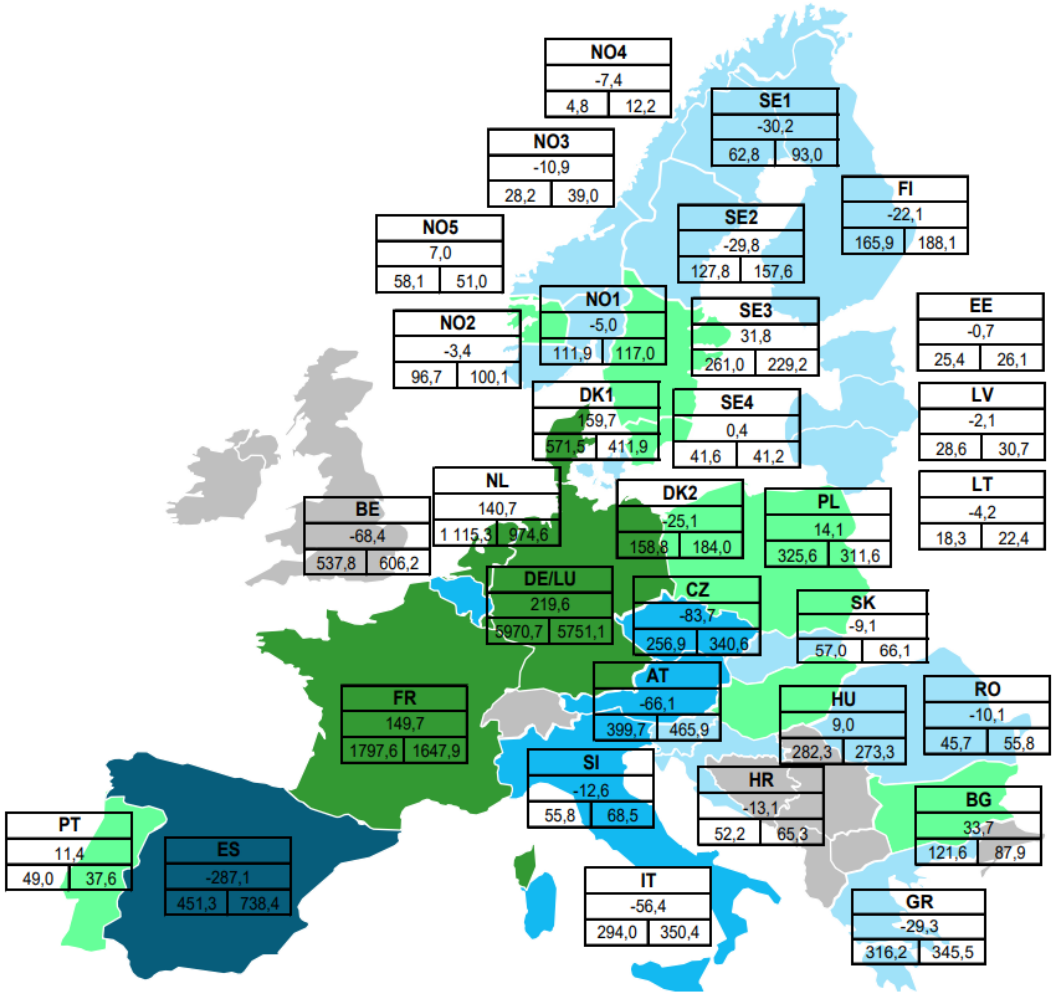
10. Indicators on Net Positions (7/11)



10. Indicators on Net Positions (8/11)

> 100 GWh
50 to 100 GWh
0 to 50 GWh
-50 to 0 GWh
-100 to -50 GWh
<-100 GWh

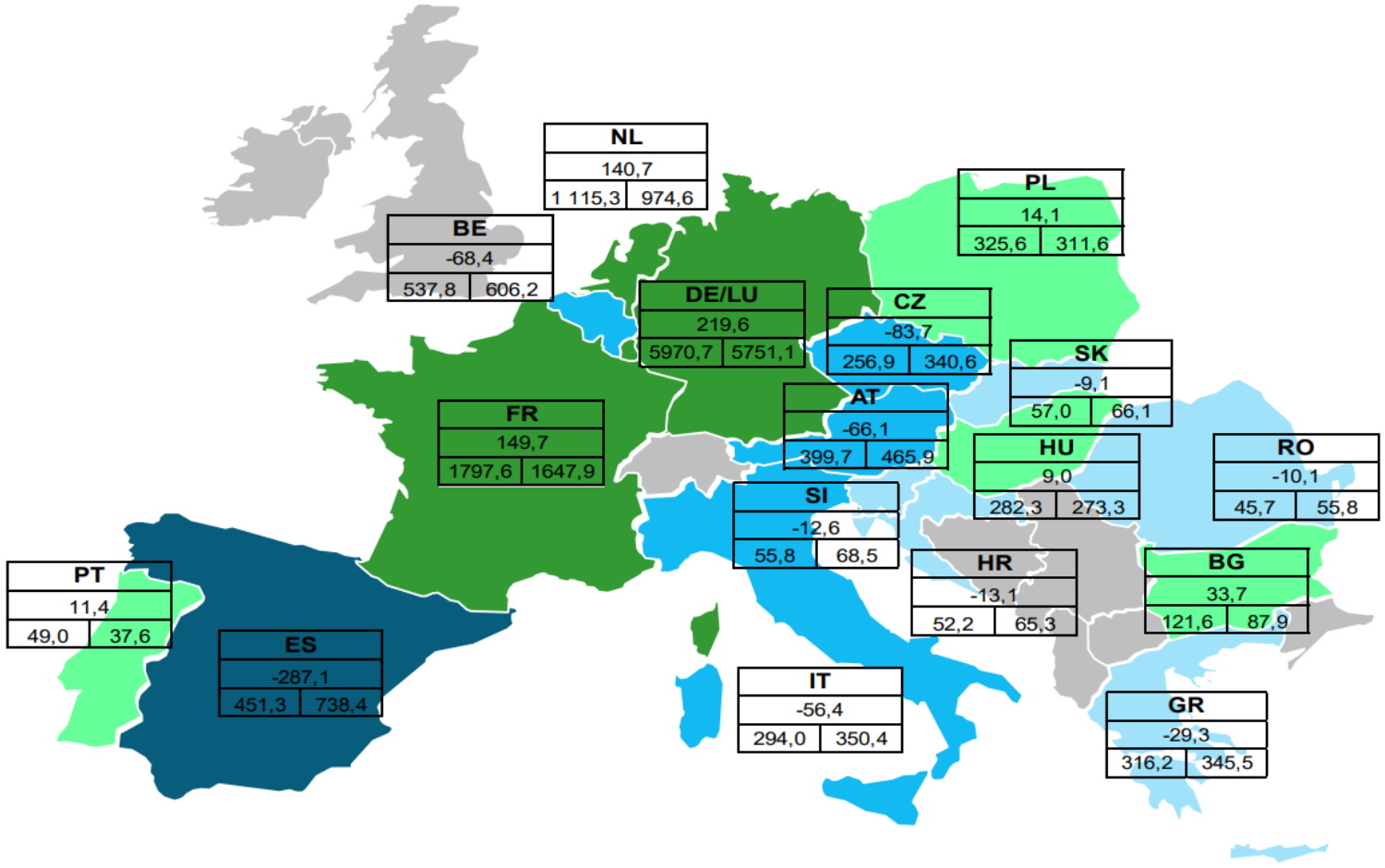
Net position (GWh)	
Import (GWh)	Export (GWh)



10. Indicators on Net Positions (9/11)

> 100 GWh
50 to 100 GWh
0 to 50 GWh
-50 to 0 GWh
-100 to -50 GWh
<-100 GWh

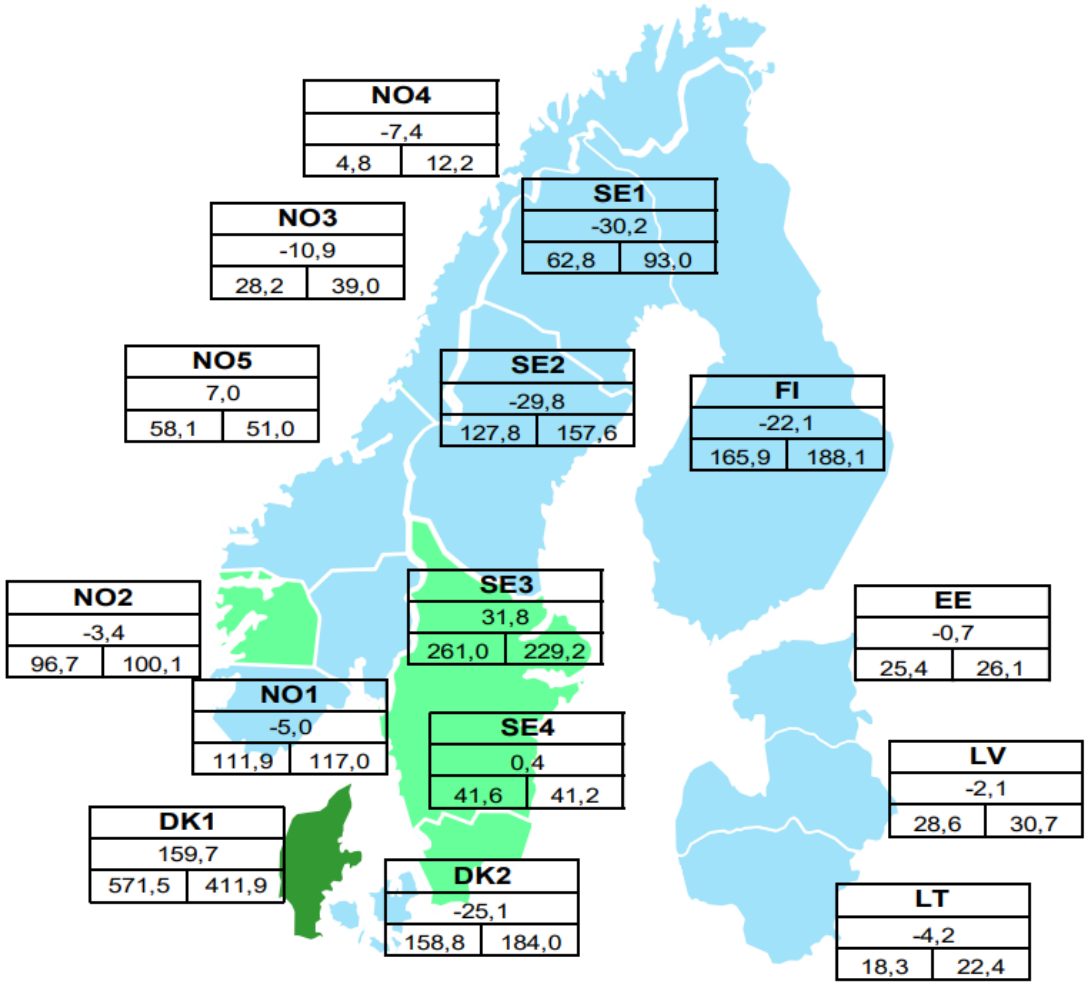
Net position (GWh)	
Import (GWh)	Export (GWh)



10. Indicators on Net Positions (10/11)

> 100 GWh
50 to 100 GWh
0 to 50 GWh
-50 to 0 GWh
-100 to -50 GWh
<-100 GWh

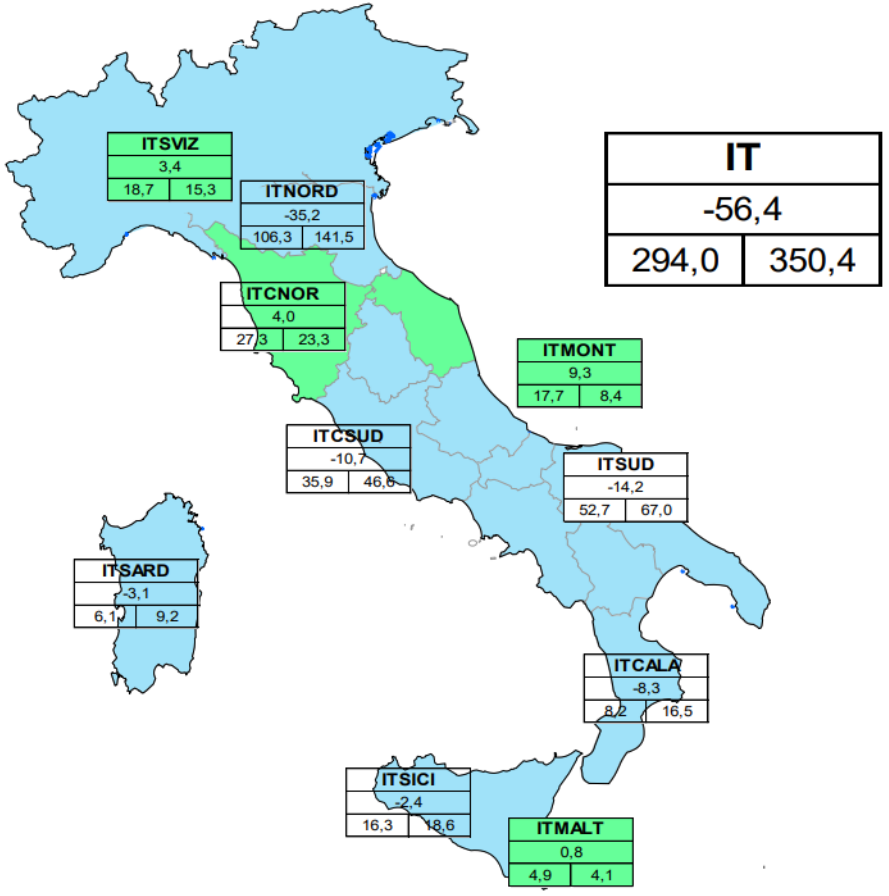
Net position (GWh)	
Import (GWh)	Export (GWh)



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