

SIDC Algorithm monitoring Report

December 2021



List of contents

| | | |
|-----------|---|---------------------|
| 1 | Indicators of the time needed to process an Order Execution | Slides 6 |
| 2 | Indicators to describe the usage of continuous SIDC algorithm products | Slides 7-17 |
| 3 | Indicator to describe the usage of Explicit Capacity Allocation | Slides 18 |
| 4 | Indicators to describe the geographical extension of continuous SIDC | Slide 19-26 |
| 5 | Indicators to describe the Network Constraints | Slides 27 |
| 6 | Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding Total Volume | Slides 28-35 |
| 7 | Indicators on the evolution of the number of Explicit Capacity Allocations | Slides 36 |
| 8 | Indicators on the Prices | Slide 37-39 |
| 9 | Indicators on the Capacities | Slide 40 |
| 10 | Indicators on Net Positions | Slide 41-51 |
| 11 | List of Abbreviations | Slide 52 |

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

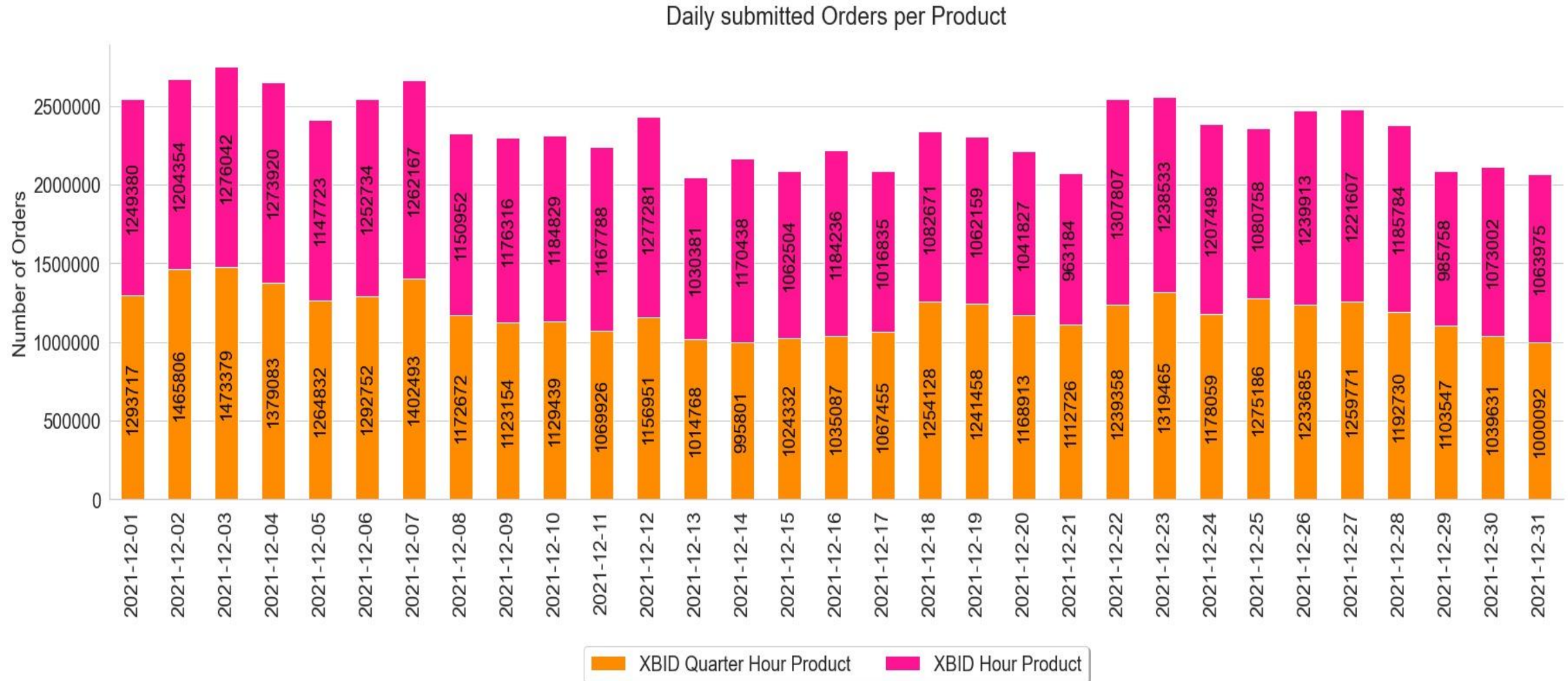
| Performance indicator | | December 2021 | | |
|---|------------------------|---------------|-----------|-----------|
| | | Avg | Min | Max |
| Time for the execution of an Order (milliseconds) | Lower percentile 93% | 14 | 17 | 29 |
| | Upper percentile 96,5% | 19 | 25 | 41 |
| Rate of executed Orders (number per day) | | 2 383 138 | 2 078 481 | 2 778 430 |
| Time for the execution of a Trade * | | - | - | - |
| Rate of executed Trade (number per hour) | | 8 162 | 353 | 17 344 |
| Time for the generation of Post-Coupling files (milliseconds) | | 11 529 | 8 726 | 54 310 |
| Time for processing an Order Book update (milliseconds) | Lower percentile 93% | 37 | 29 | 46 |
| | Upper percentile 96,5% | 53 | 42 | 66 |

* 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.)

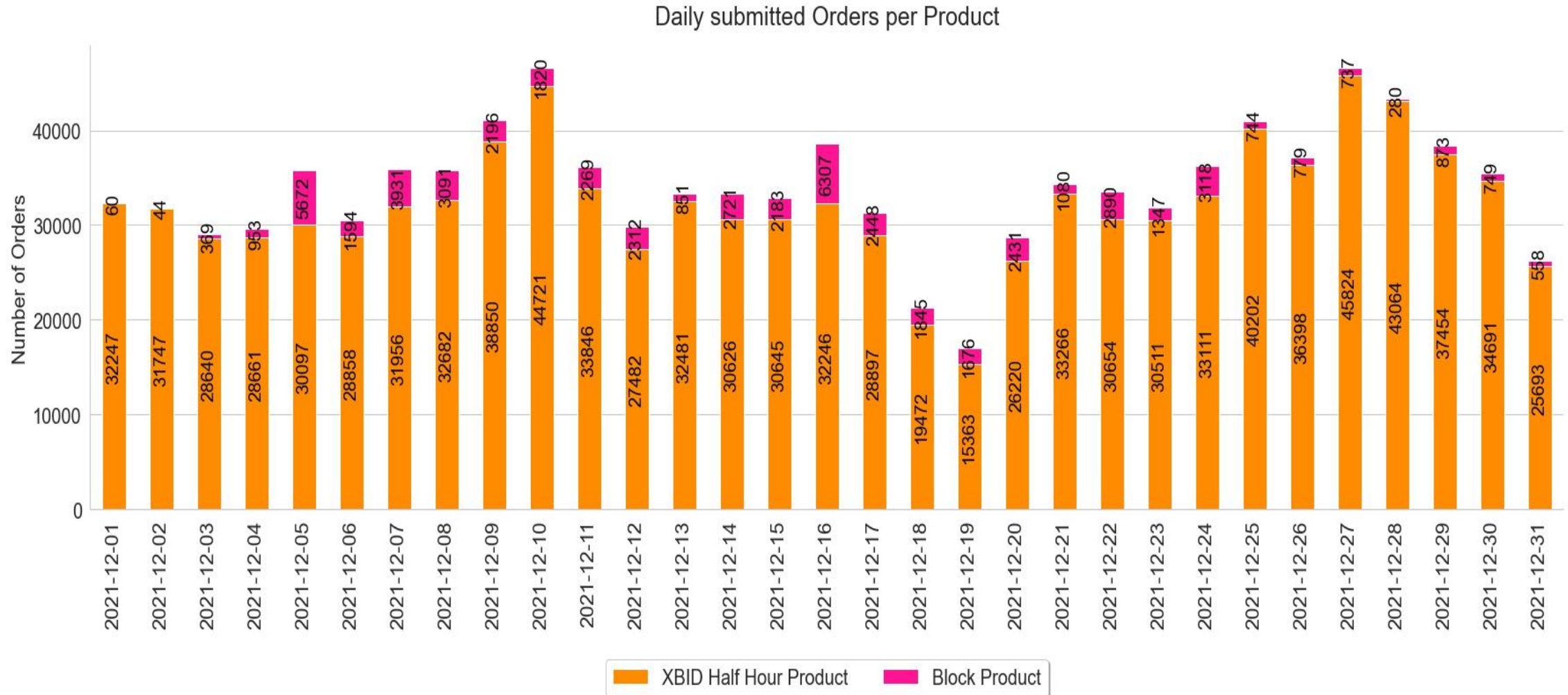
2. Indicators to describe the usage of continuous SIDC algorithm products (1/11)

| 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 |

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



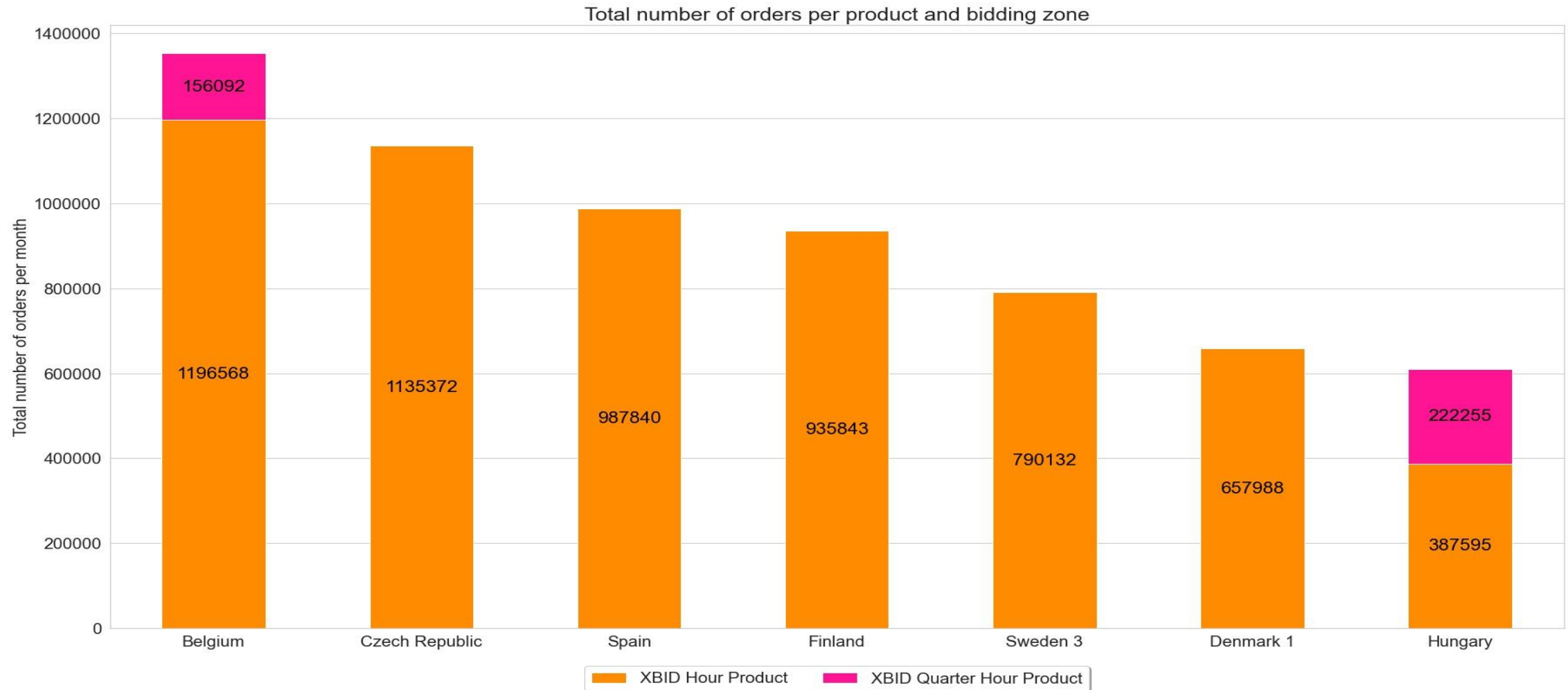
2. Indicators to describe the usage of continuous SIDC algorithm products (3/11)



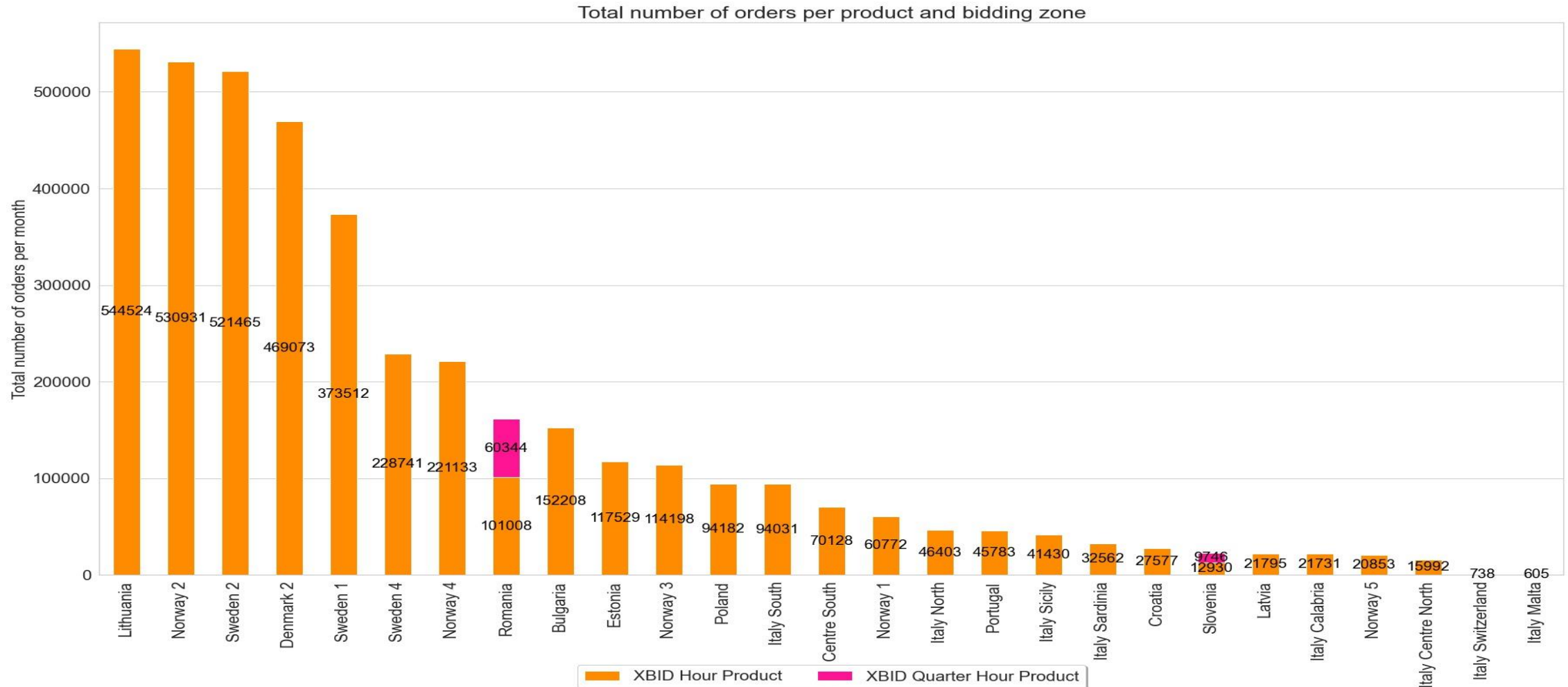
2. Indicators to describe the usage of continuous SIDC algorithm products (4/11)



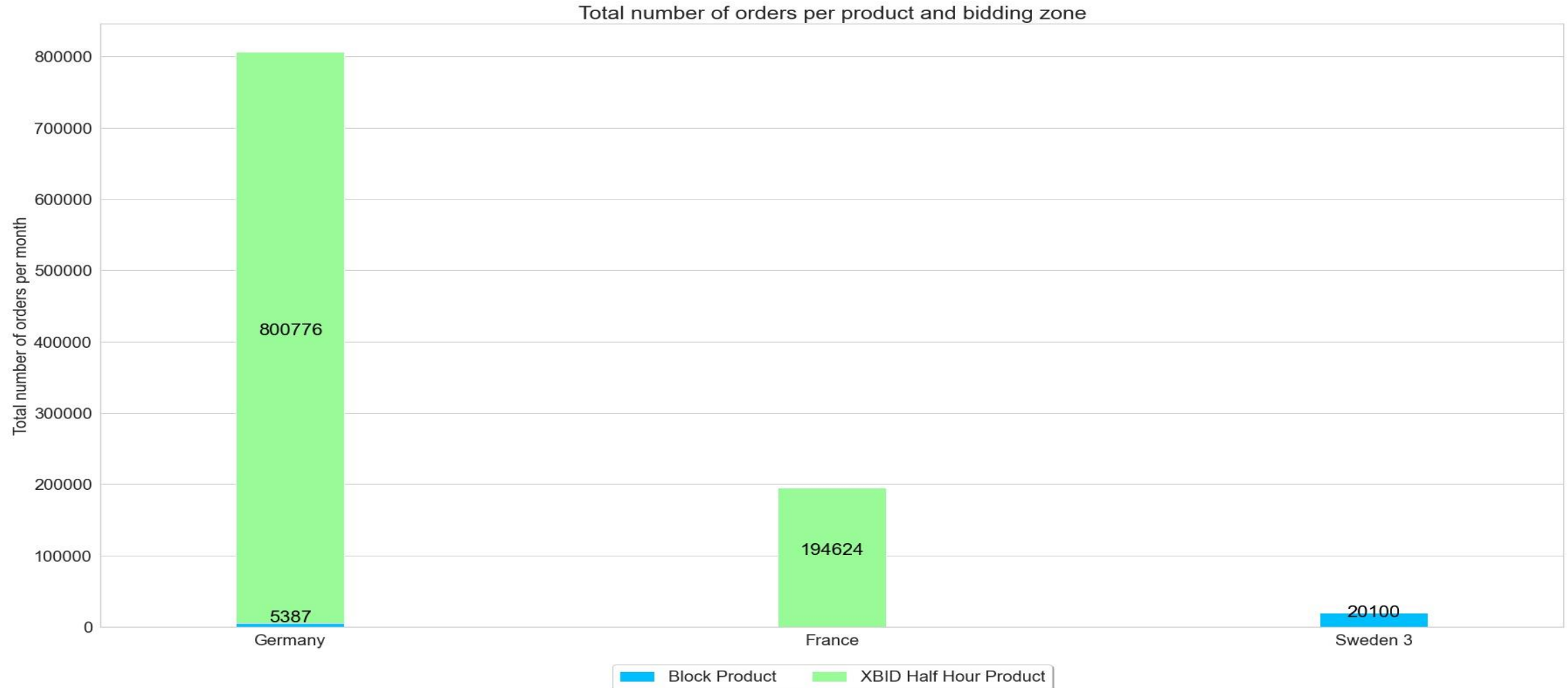
2. Indicators to describe the usage of continuous SIDC algorithm products (5/11)



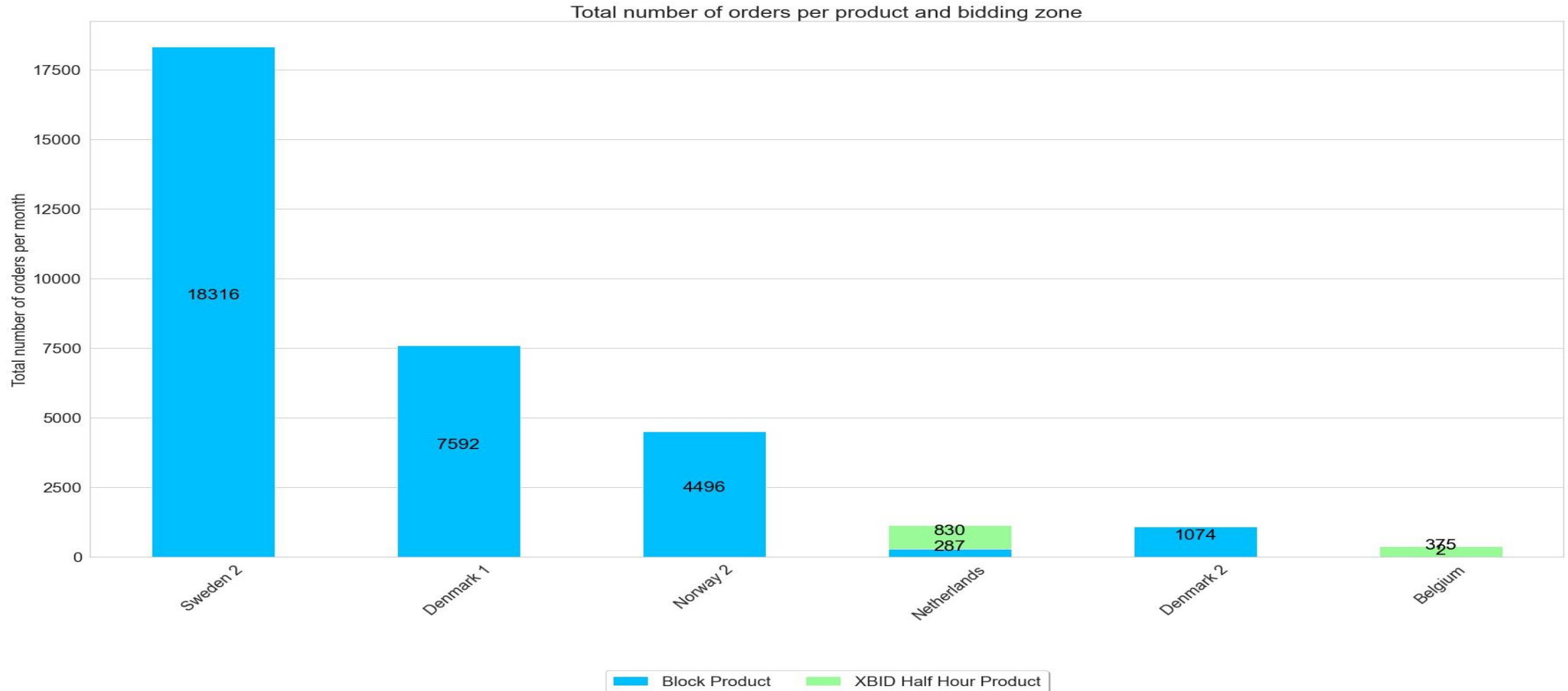
2. Indicators to describe the usage of continuous SIDC algorithm products (6/11)



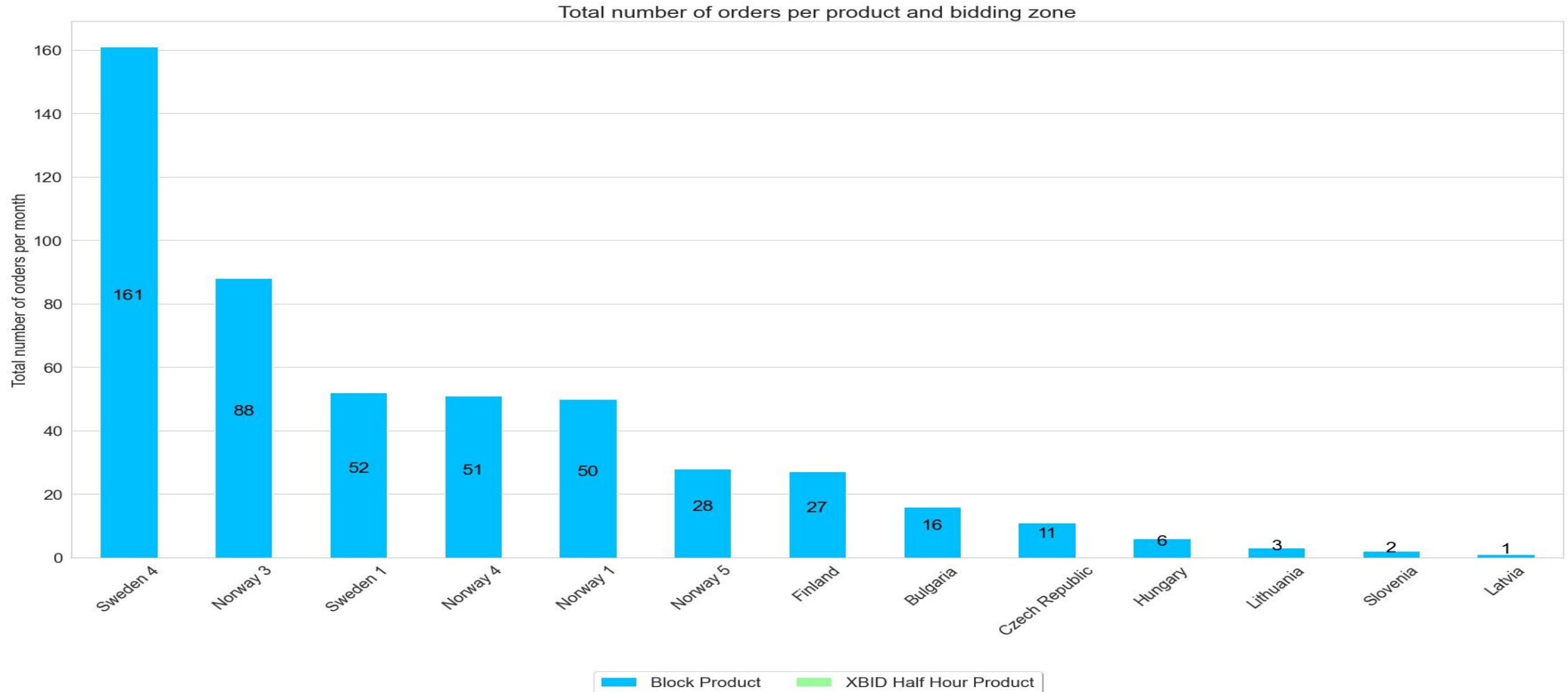
2. Indicators to describe the usage of continuous SIDC algorithm products (7/11)



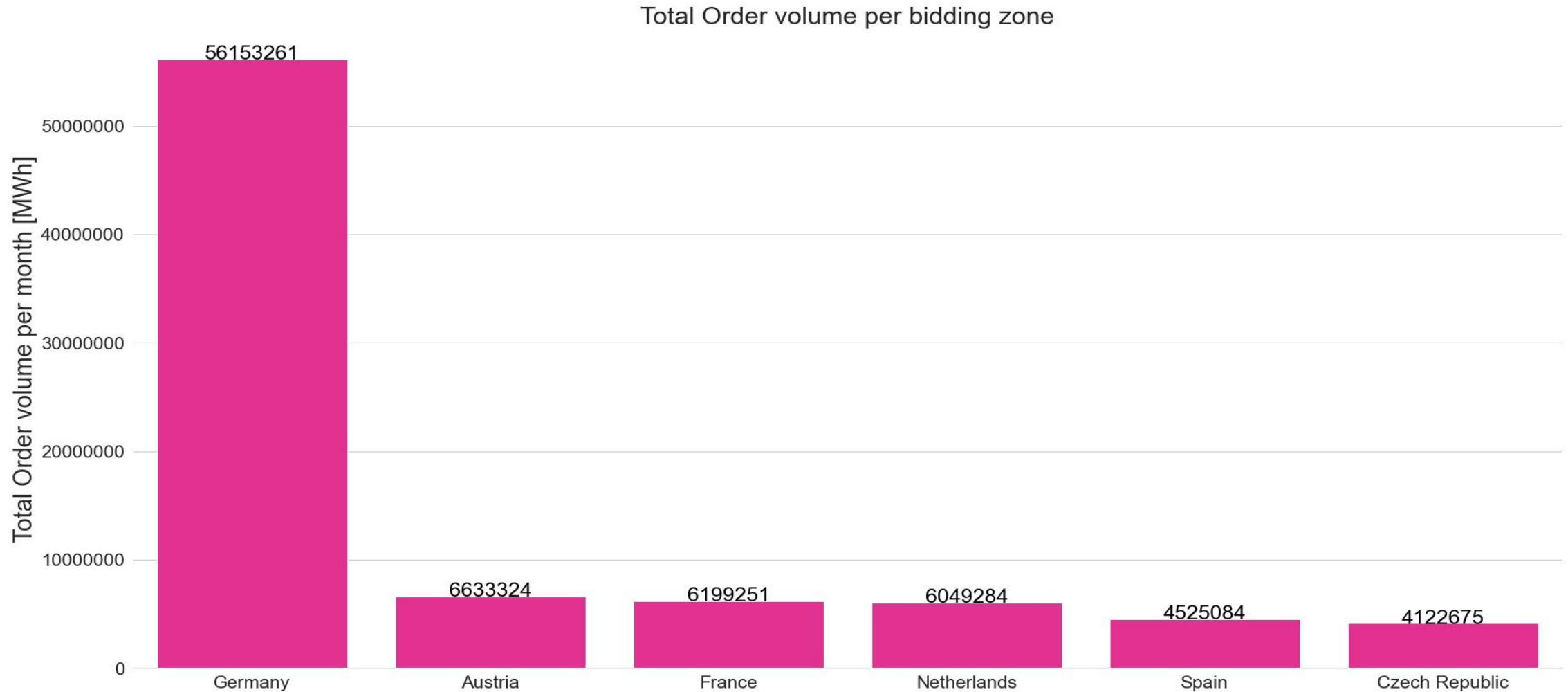
2. Indicators to describe the usage of continuous SIDC algorithm products (8/11)



2. Indicators to describe the usage of continuous SIDC algorithm products (9/11)

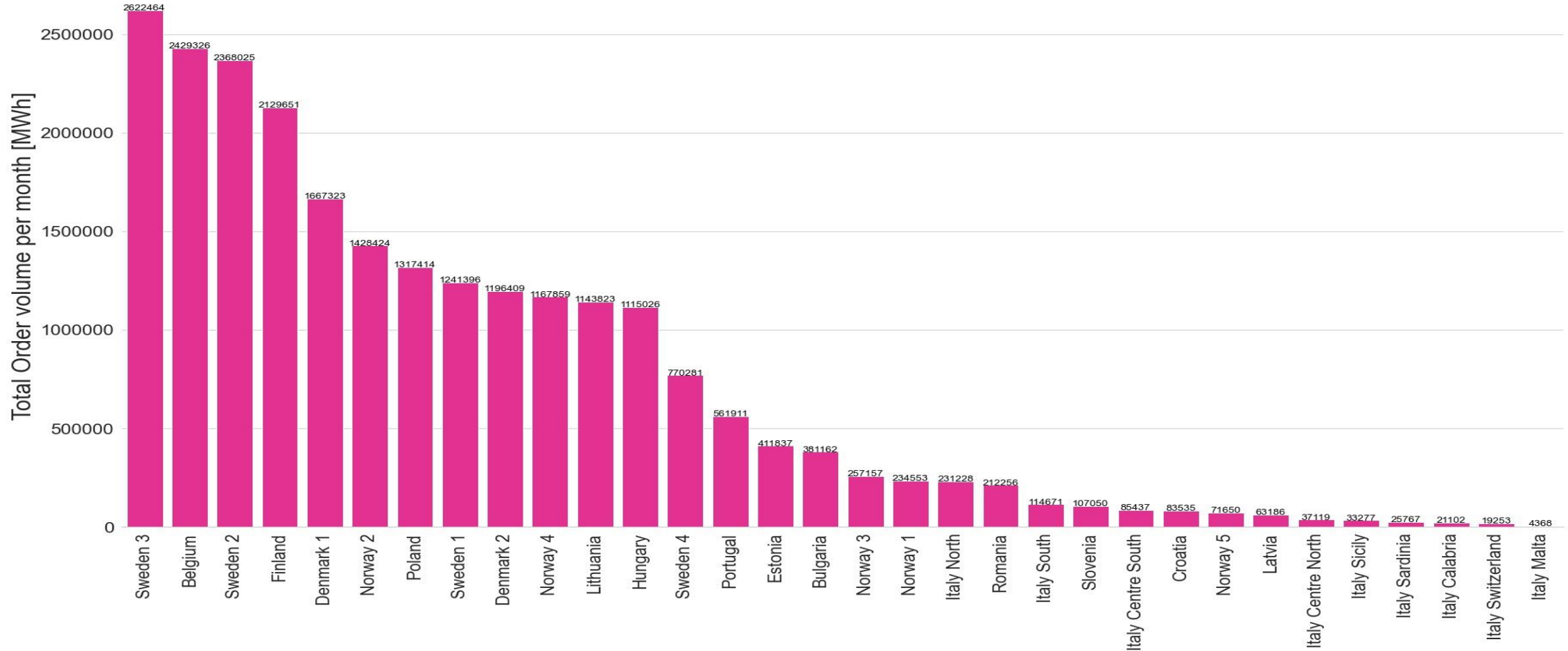


2. Indicators to describe the usage of continuous SIDC algorithm products (10/11)

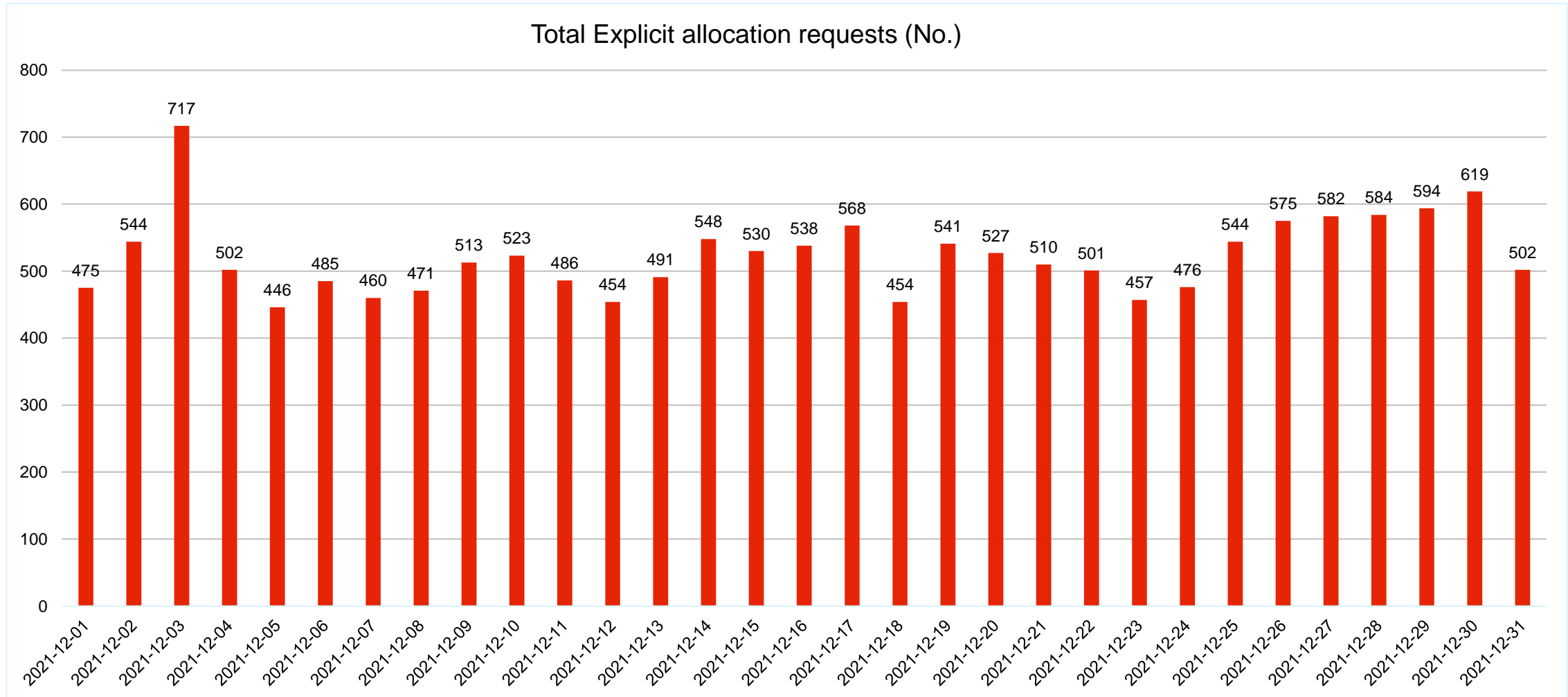


2. Indicators to describe the usage of continuous SIDC algorithm products (11/11)

Total Order volume per bidding zone

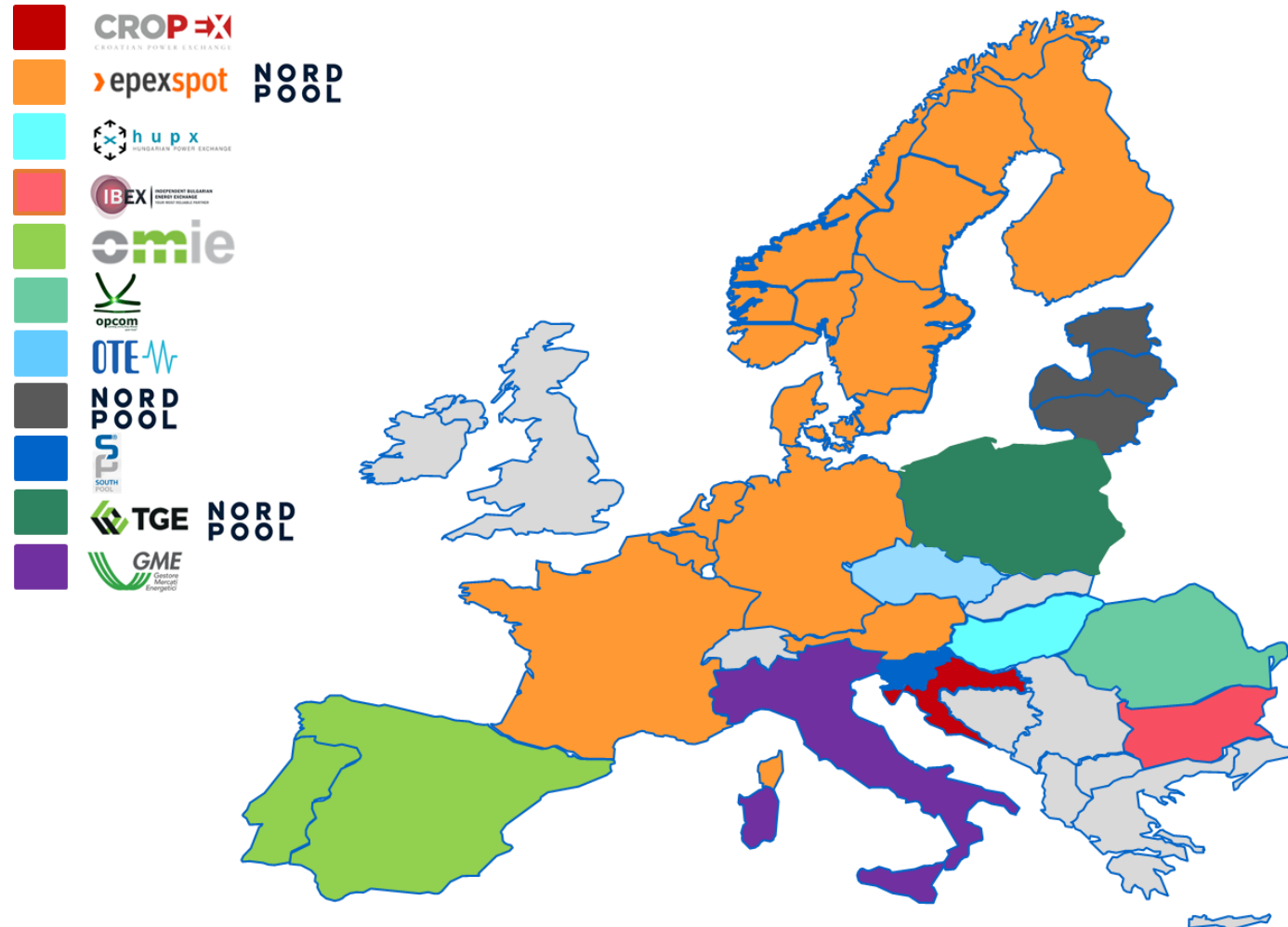


3. Indicator to describe the usage of Explicit Capacity Allocation



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

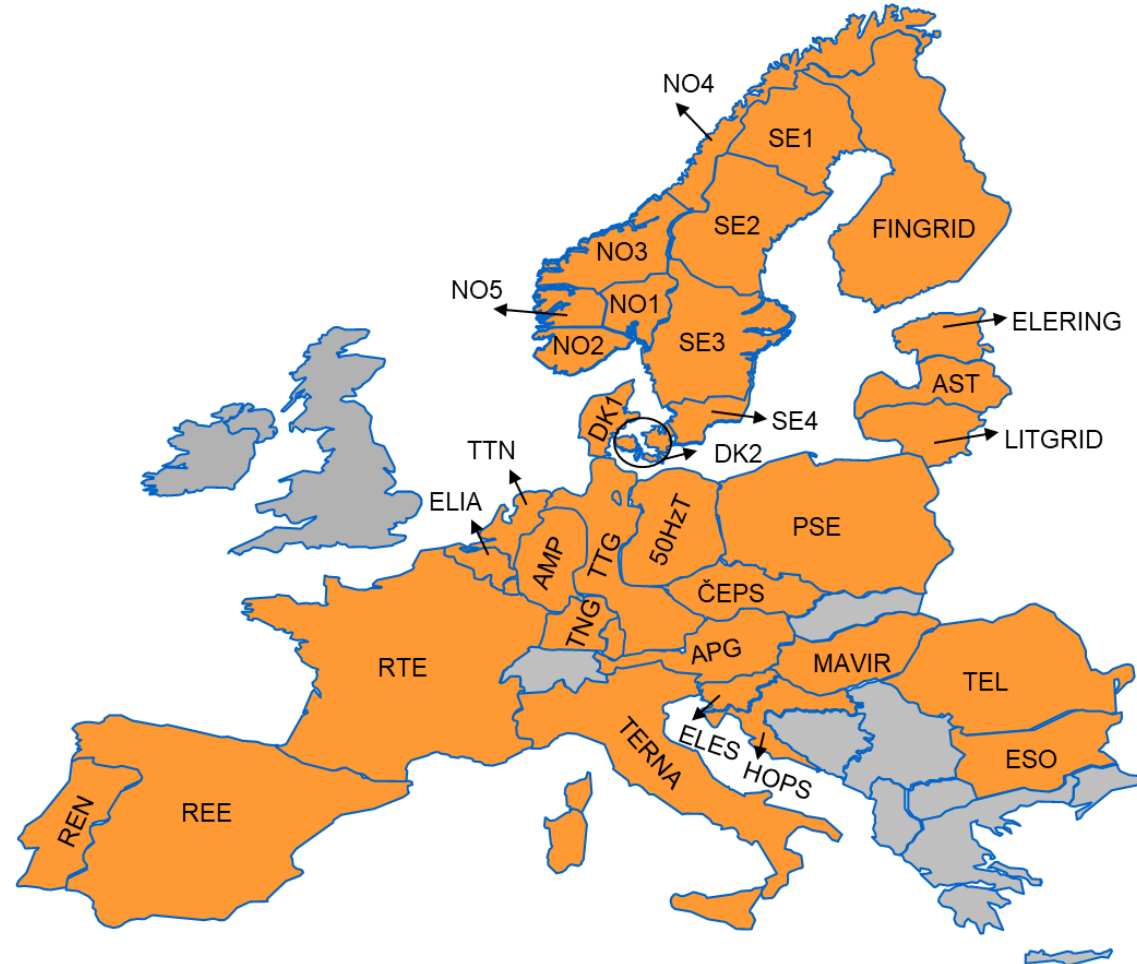
SIDC NEMOs



There are 10 NEMOs in SIDC. Some areas have more than one NEMO (MNA - Multi NEMO Area)

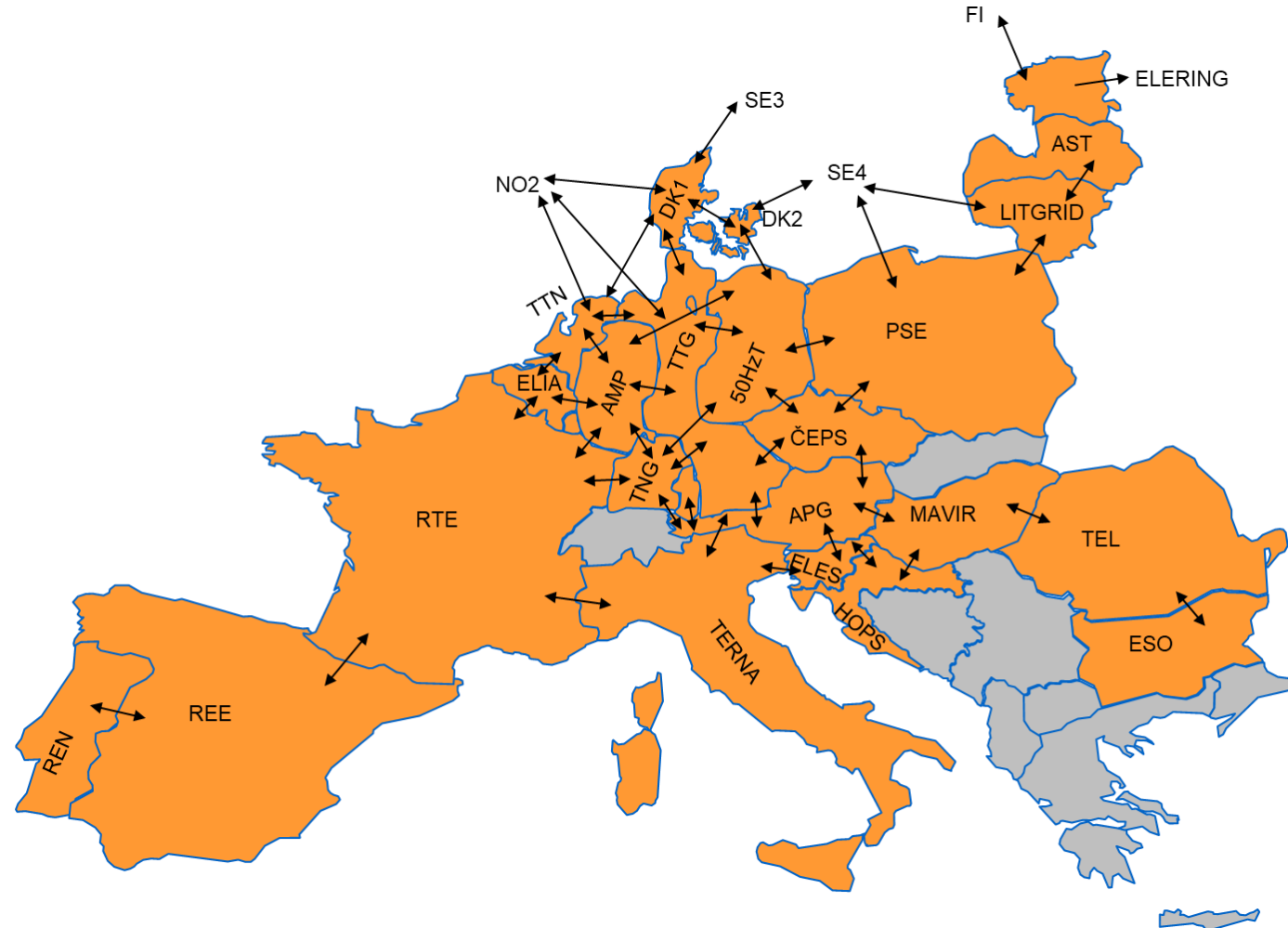
4. Indicators to describe the geographical extension of continuous SIDC (2/8)

SIDC Delivery areas



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

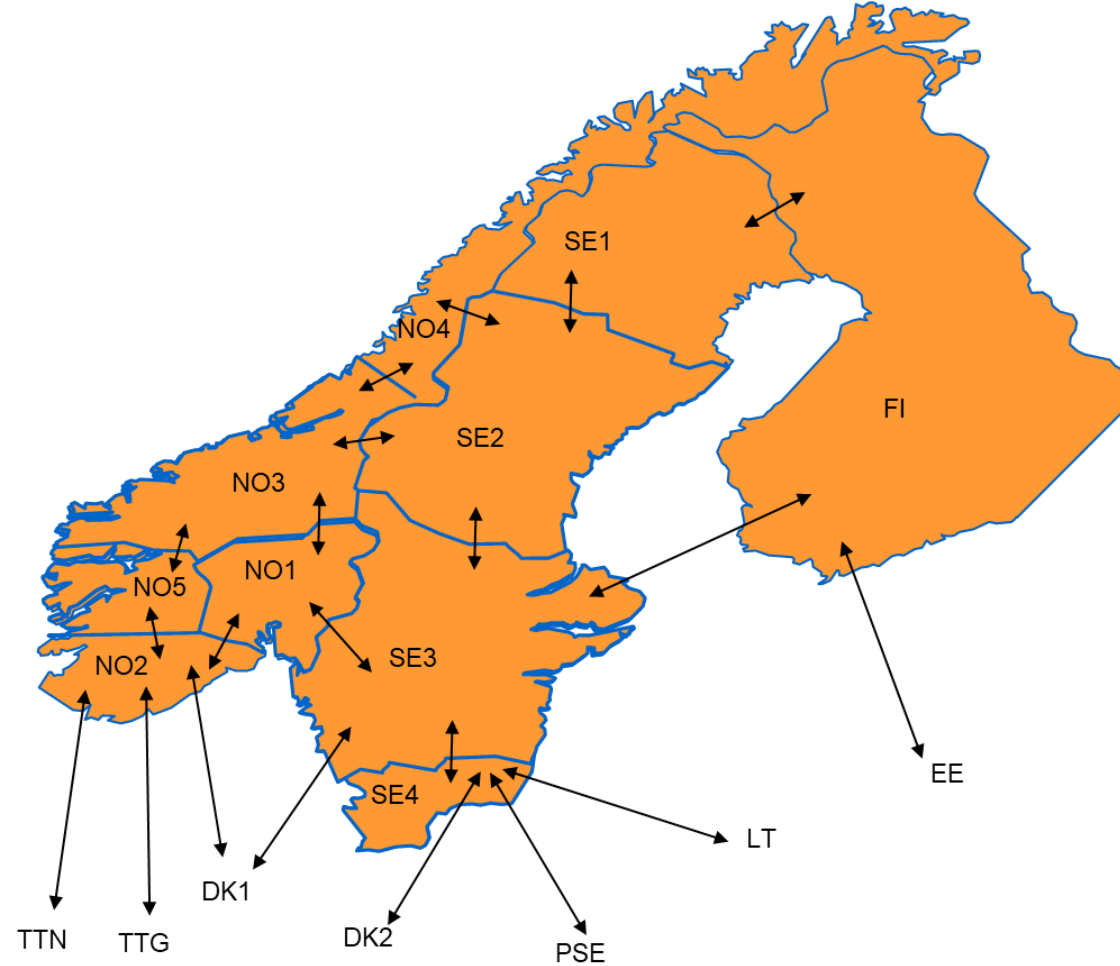
4. Indicators to describe the geographical extension of continuous SIDC (3/8) SIDC Interconnectors – Continental Europe



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

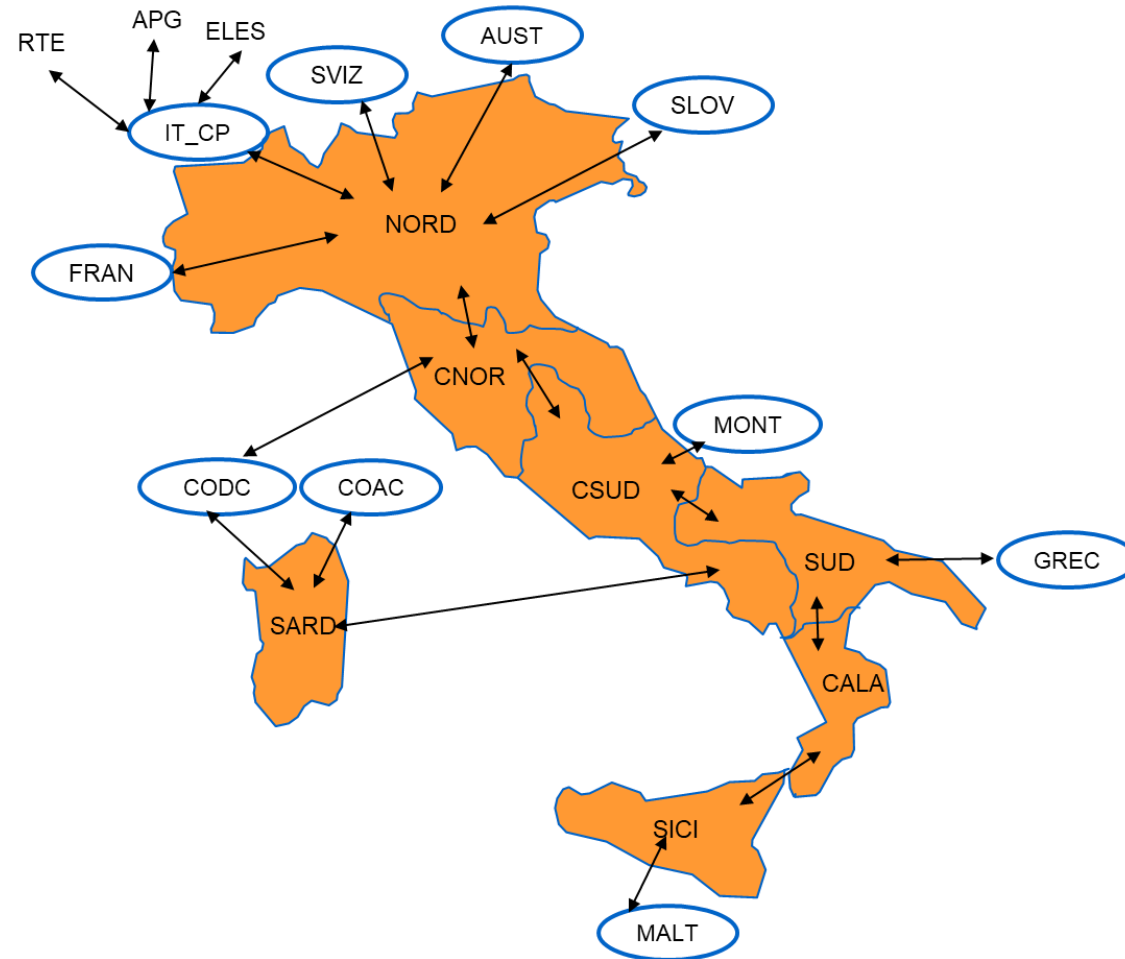
4. Indicators to describe the geographical extension of continuous SIDC (4/8)

SIDC Interconnectors - Nordics area



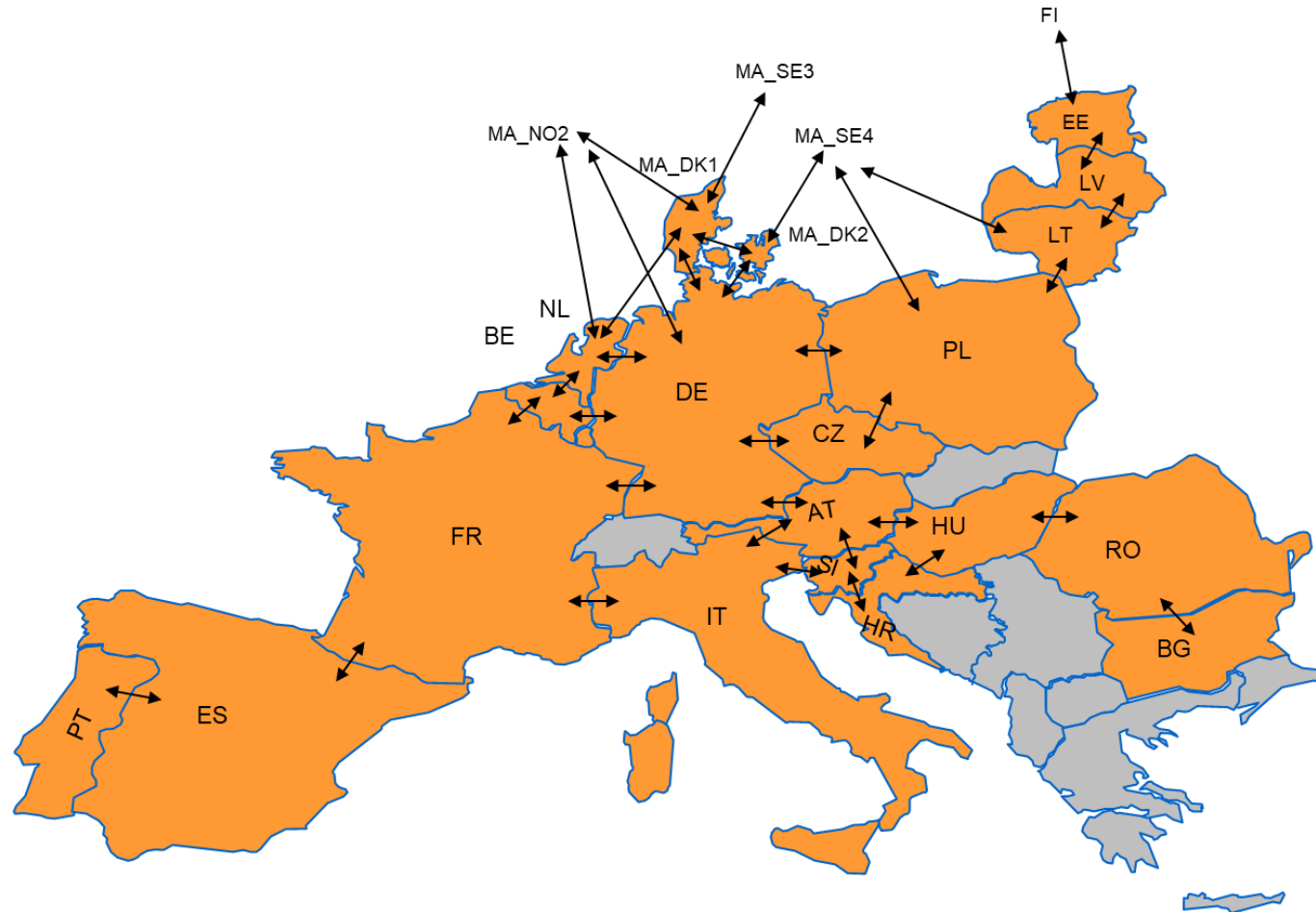
4. Indicators to describe the geographical extension of continuous SIDC (5/8)

SIDC Interconnectors - Italy



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

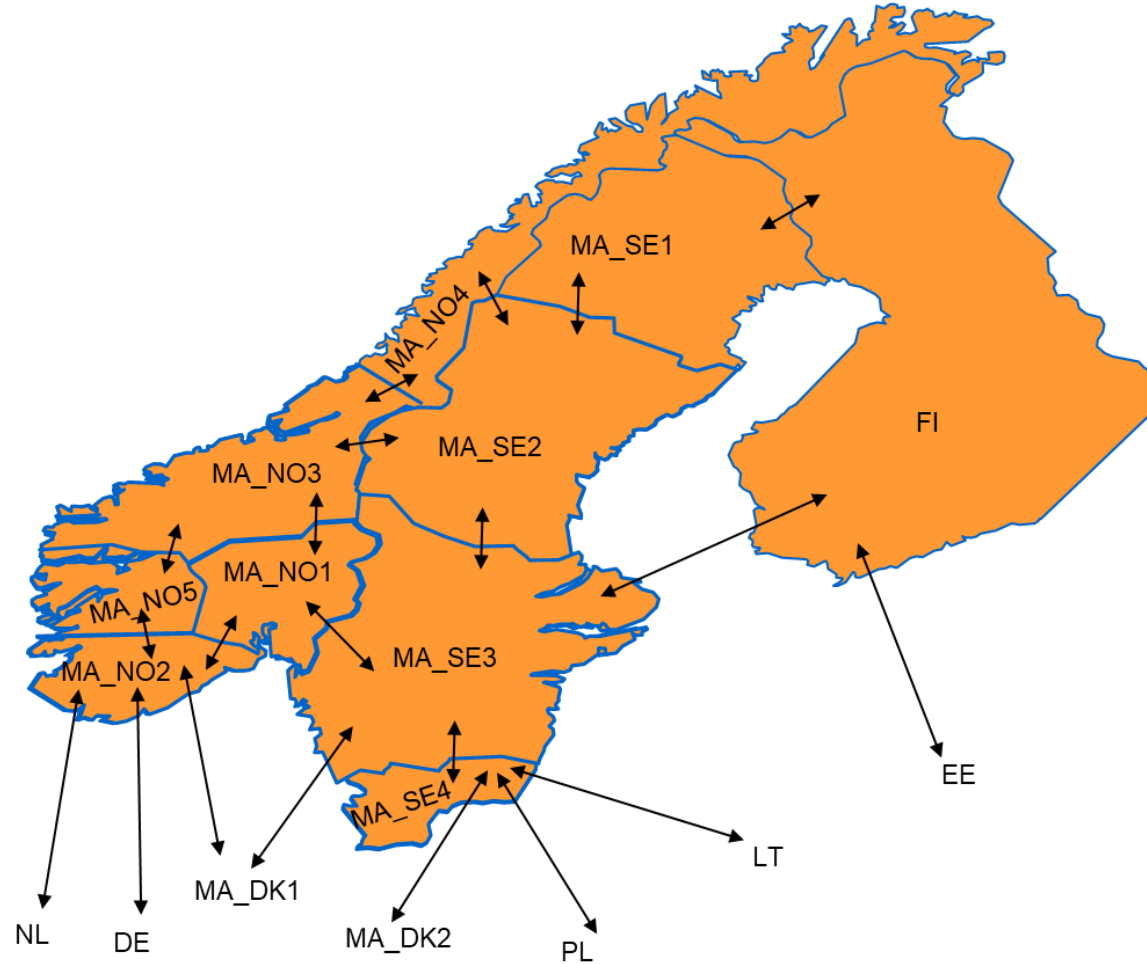
SIDC Market areas and its borders – Continental Europe



There are 30 Market areas and 51 Borders in SIDC.

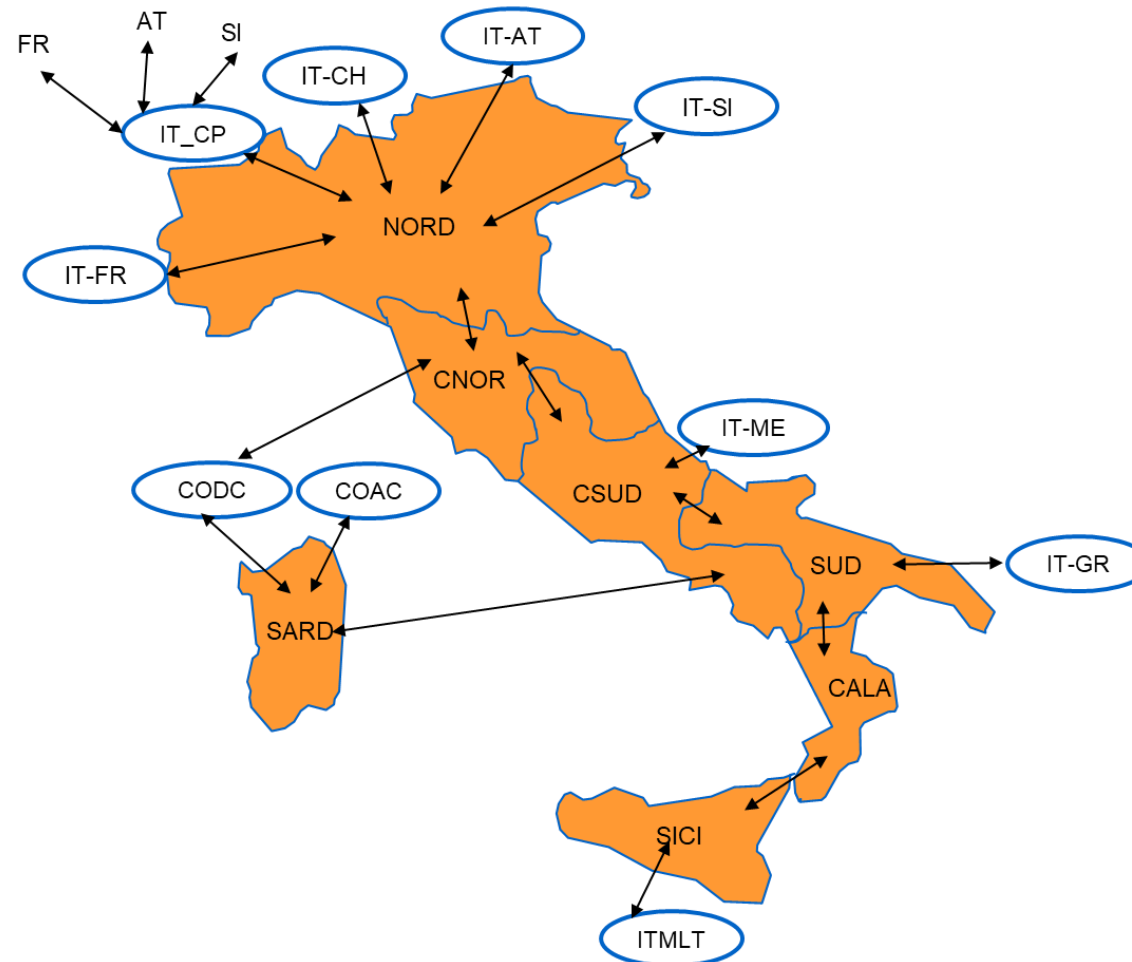
4. Indicators to describe the geographical extension of continuous SIDC (7/8)

SIDC Market areas and its borders – Nordics area

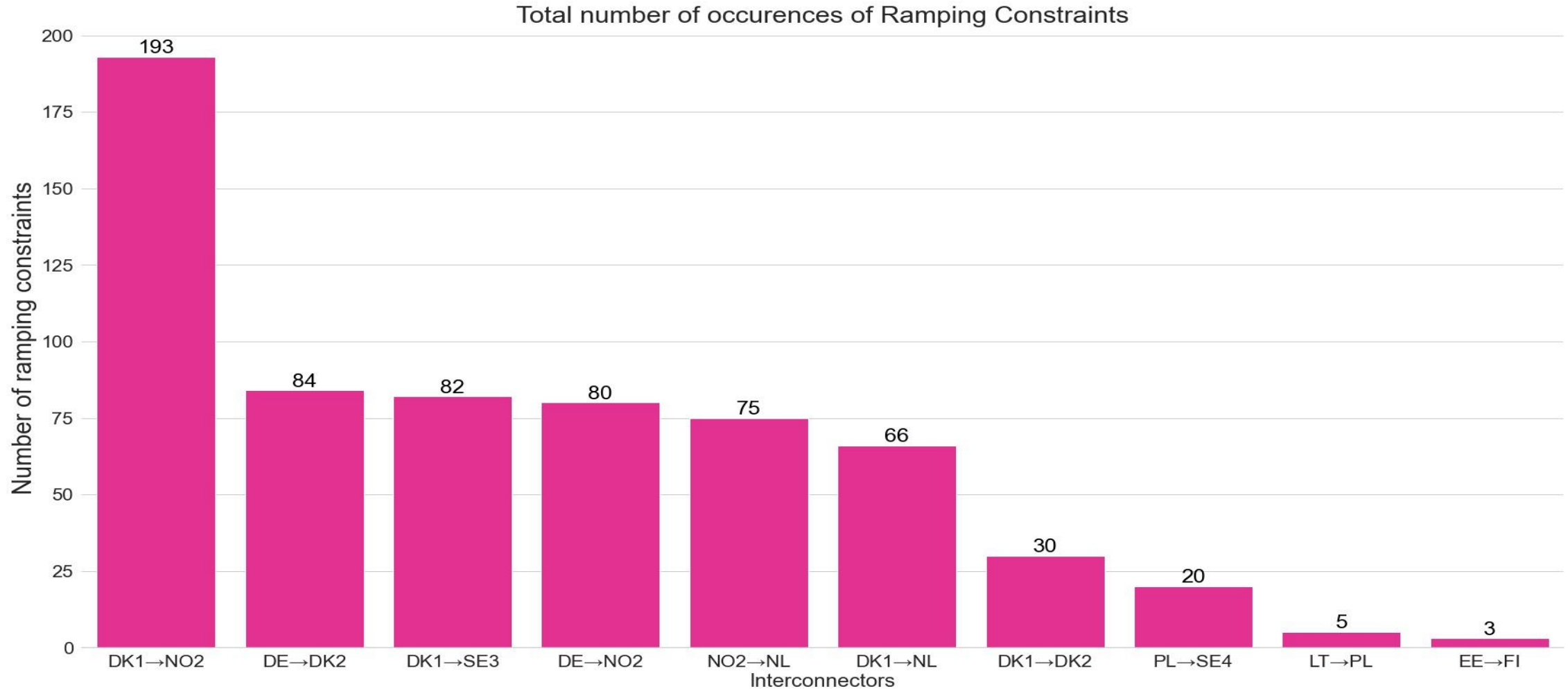


4. Indicators to describe the geographical extension of continuous SIDC (8/8)

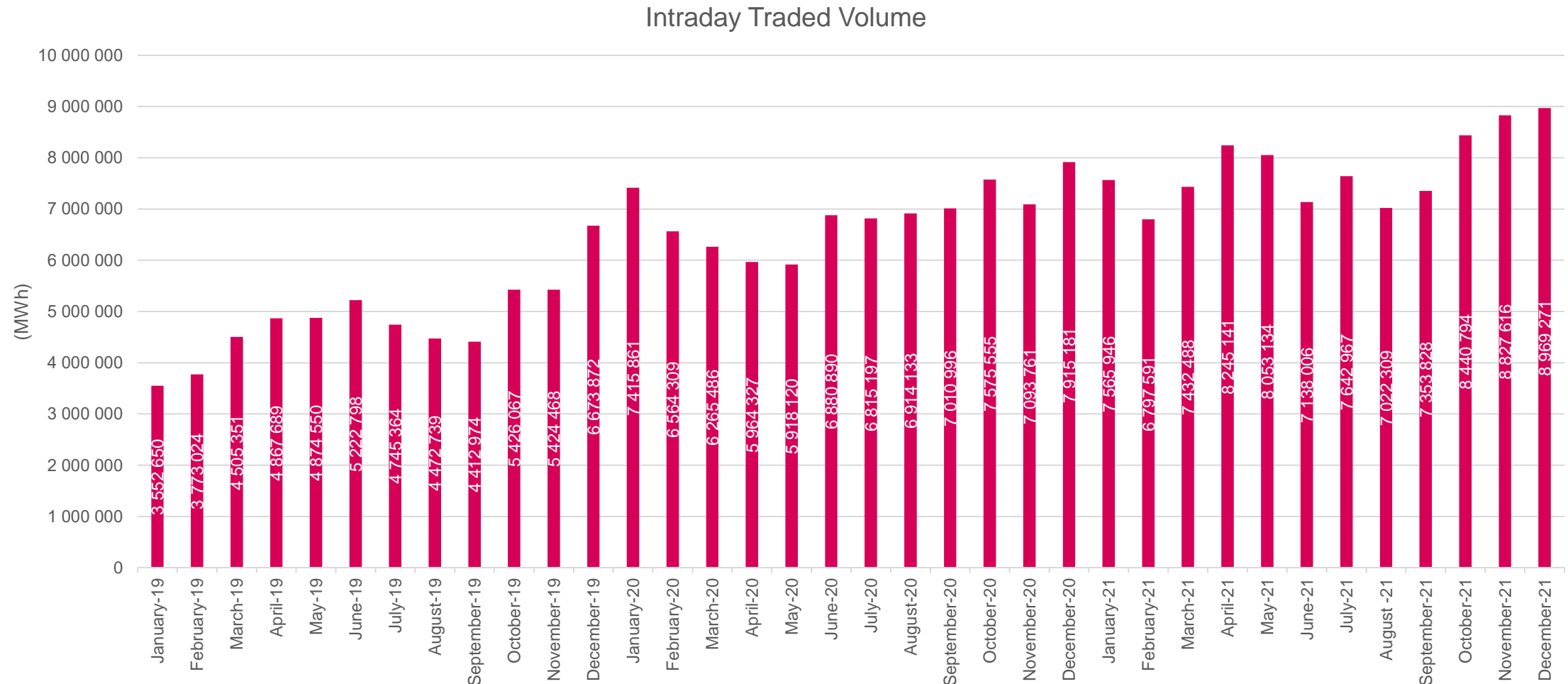
SIDC Market areas and its borders – Italy



5. Indicators to describe the network constraints

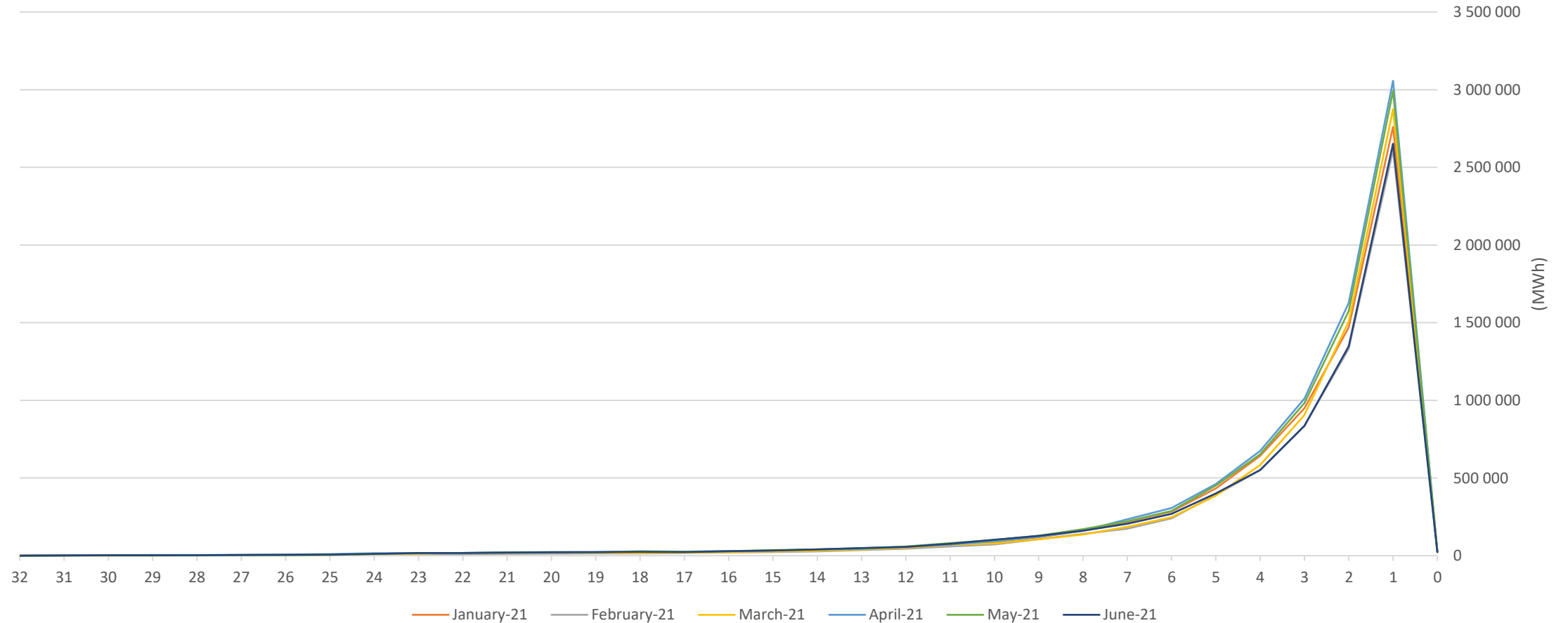


6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (1/8)



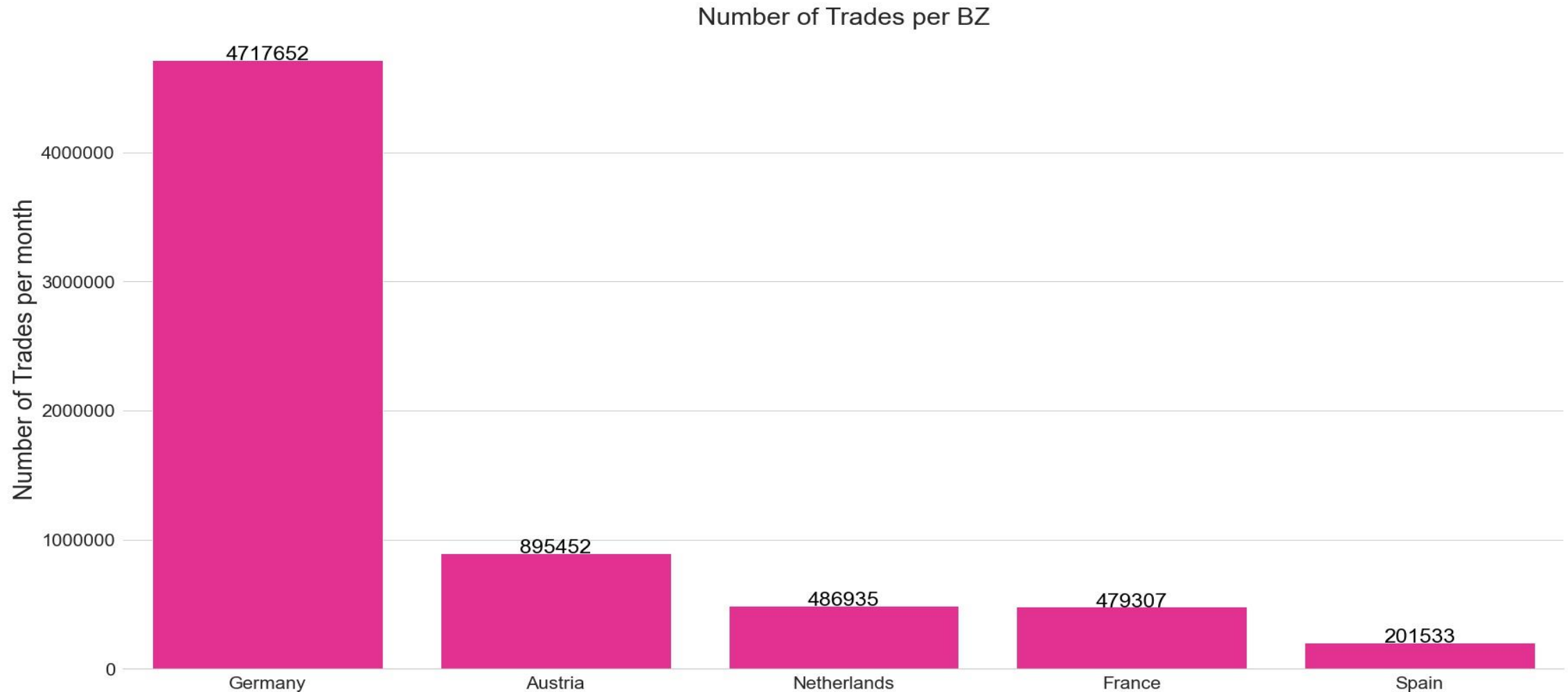
6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (2/8)

Total volume matched within hours before delivery

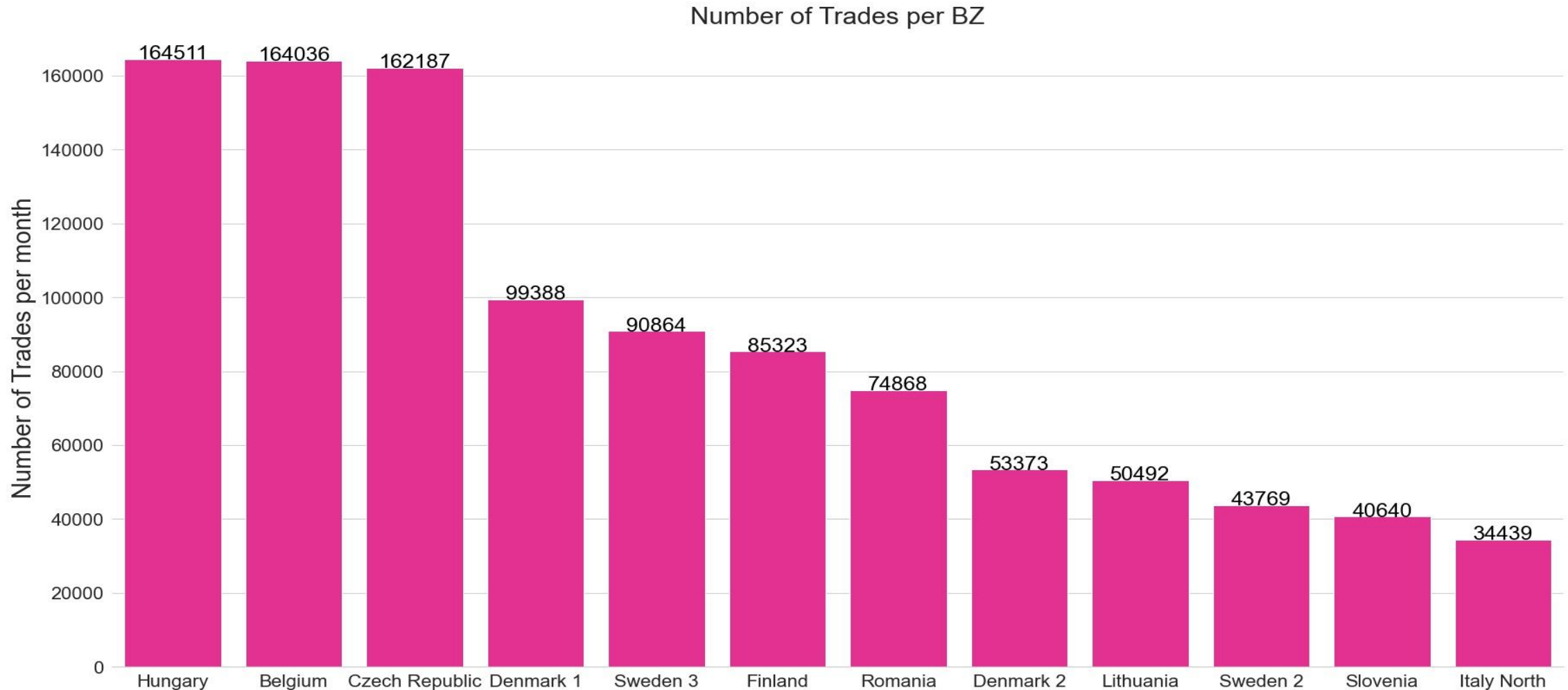


Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the volume matched between 1 hour to 30 minutes is substantially lower (in thousands of MWh) and there is no volume matched between 30 minutes to 0.

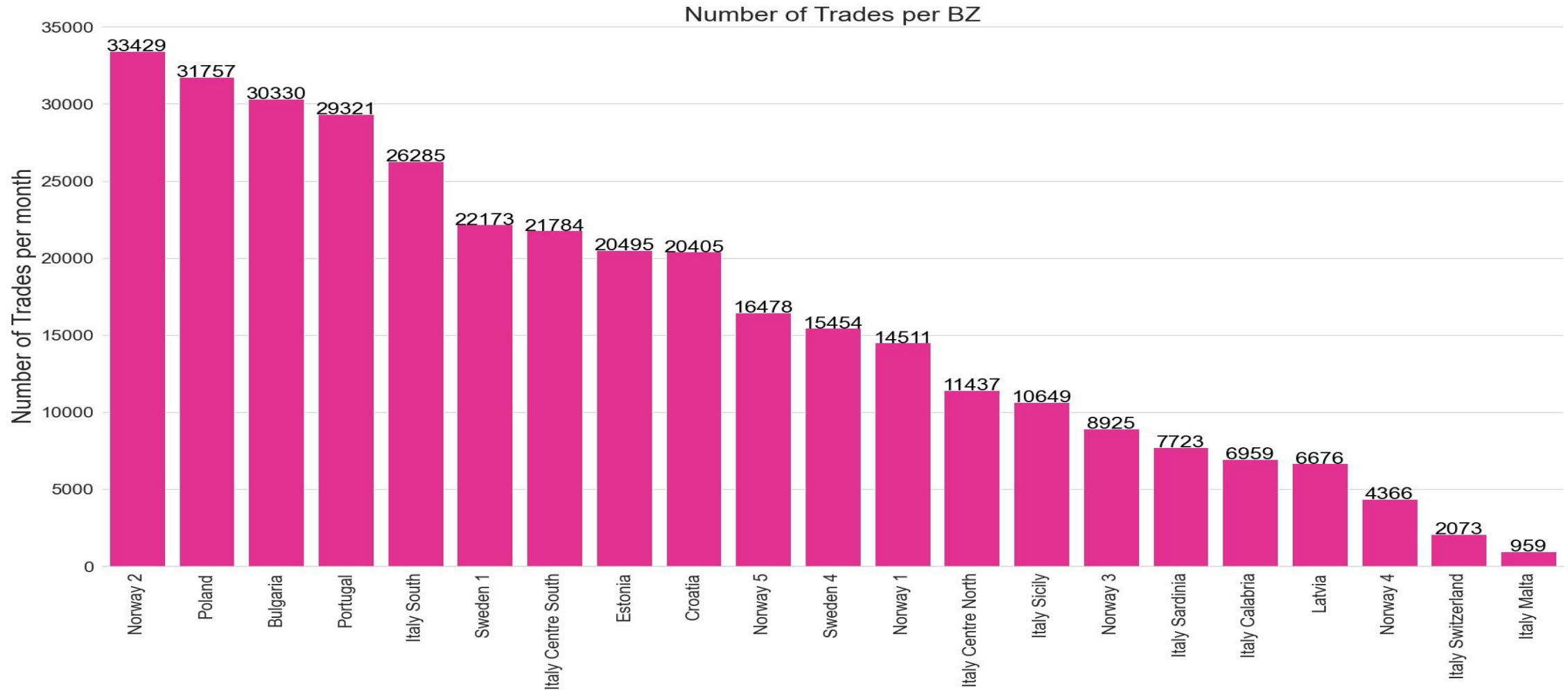
6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (3/8)



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)

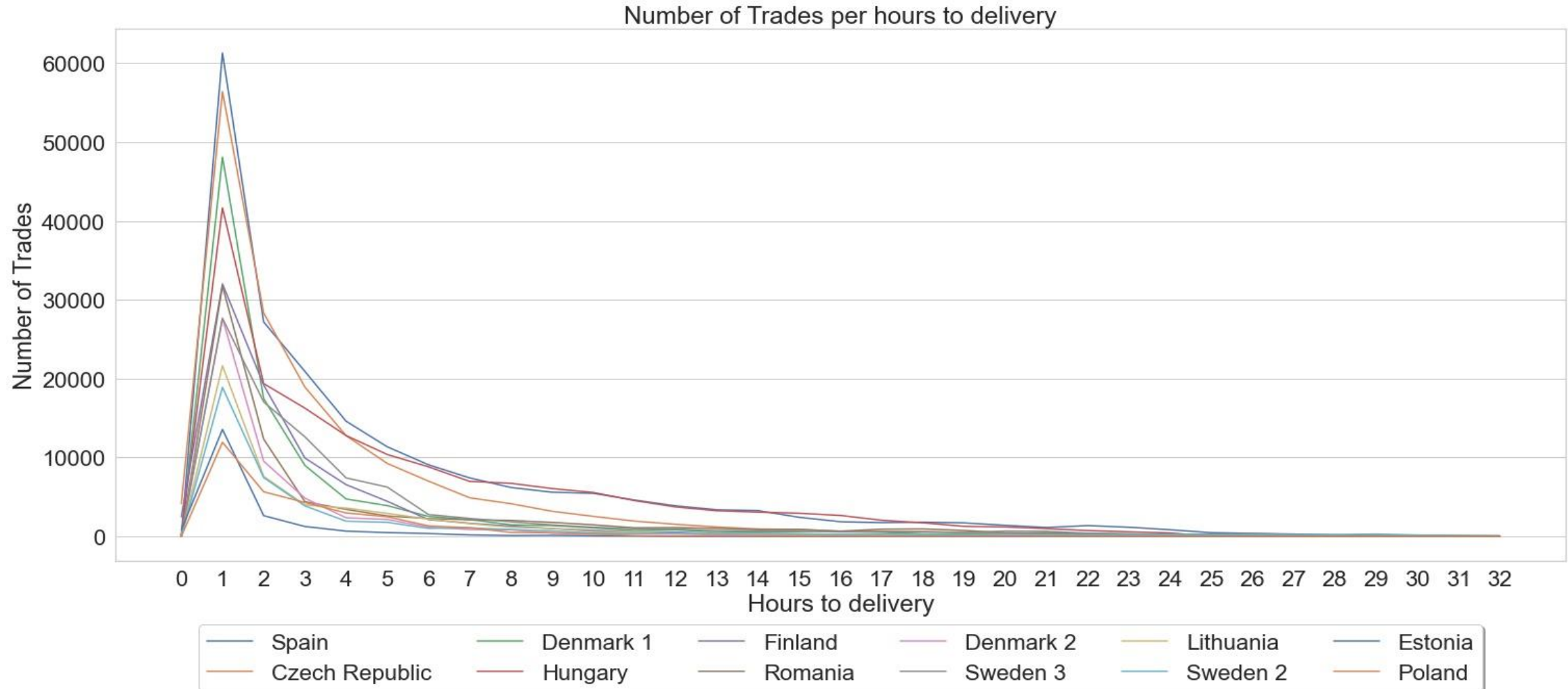


6. Indicators on the evolution of the number of Matched Orders of each contract, and the corresponding total volume (6/8)



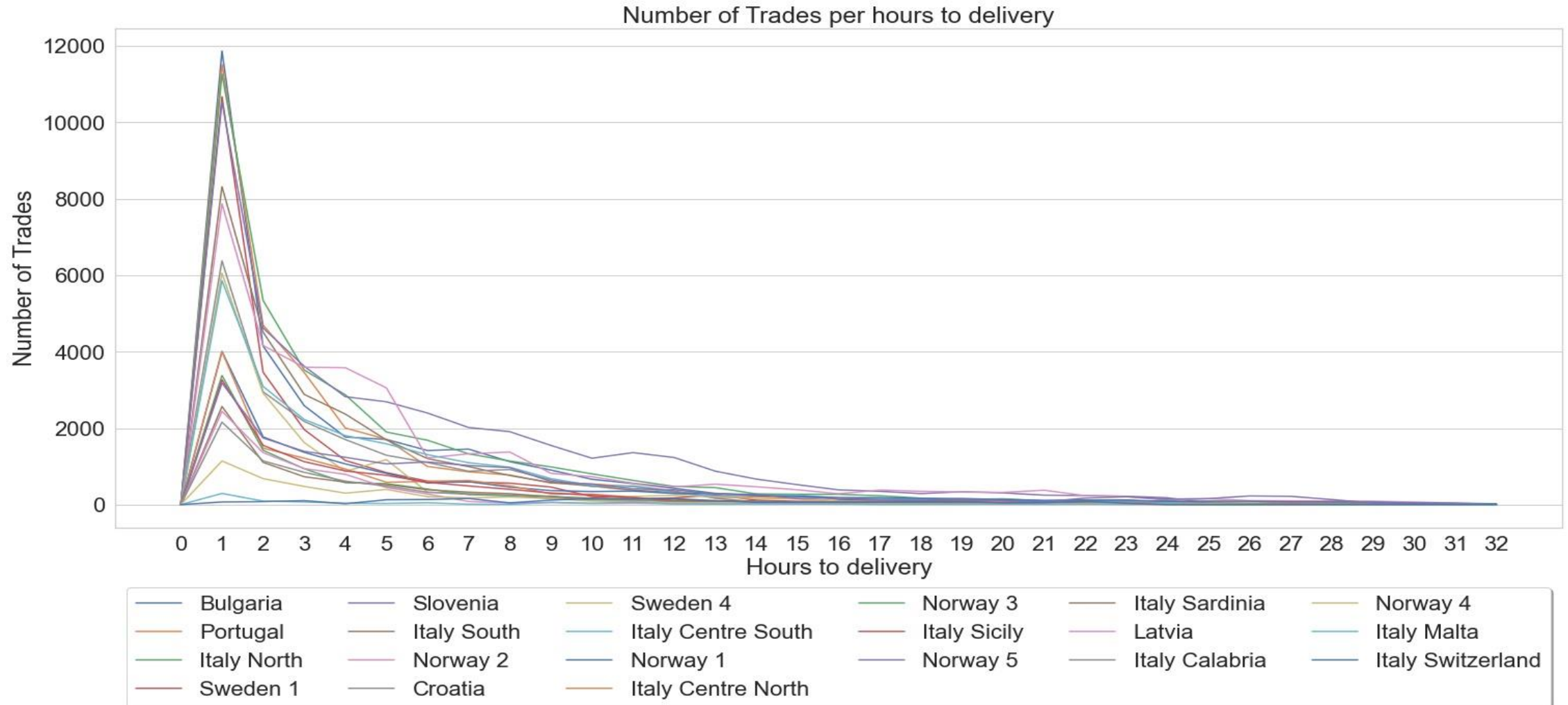
Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the number of trades between 1 hour to 30 minutes is substantially lower (in thousands) and there is no volume matched between 30 minutes to 0.

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



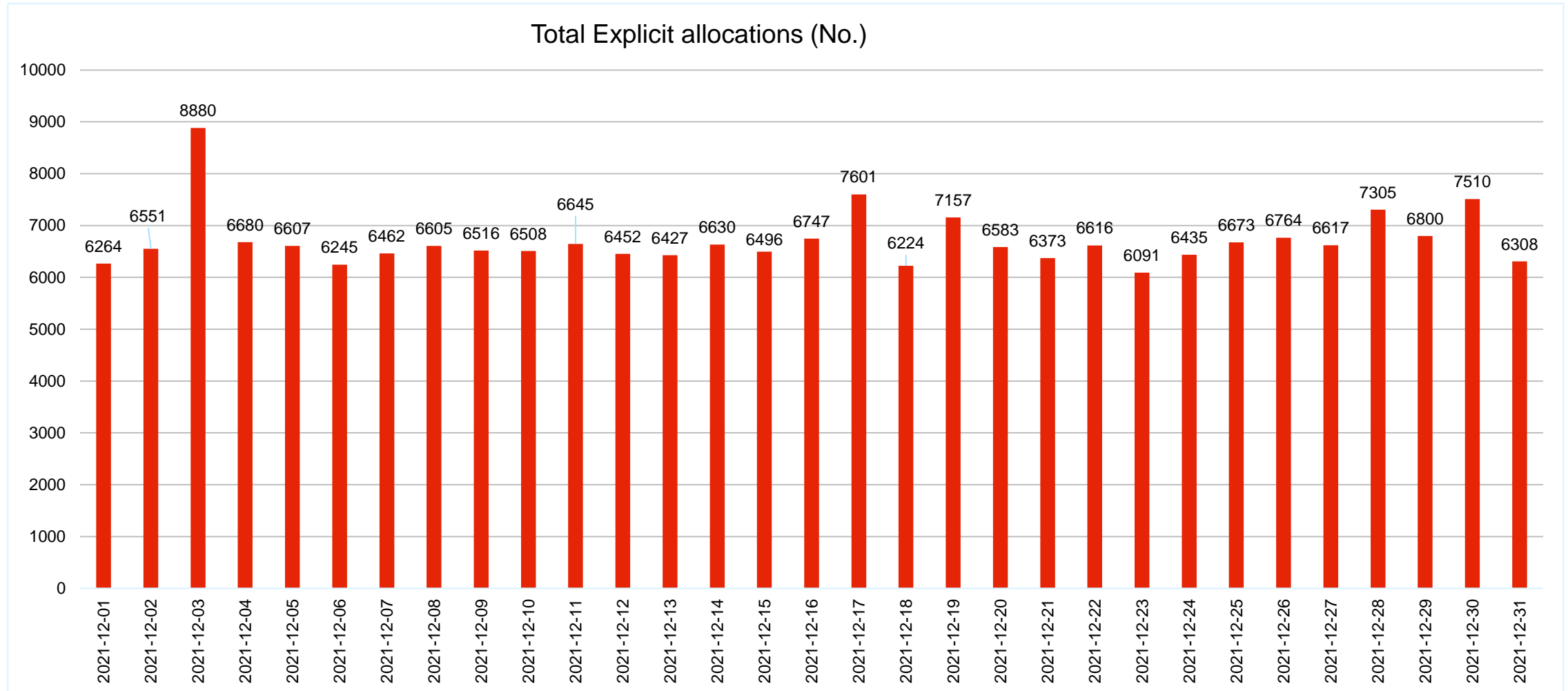
Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the number of trades between 1 hour to 30 minutes is substantially lower (in thousands) and there is no volume matched between 30 minutes to 0.

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



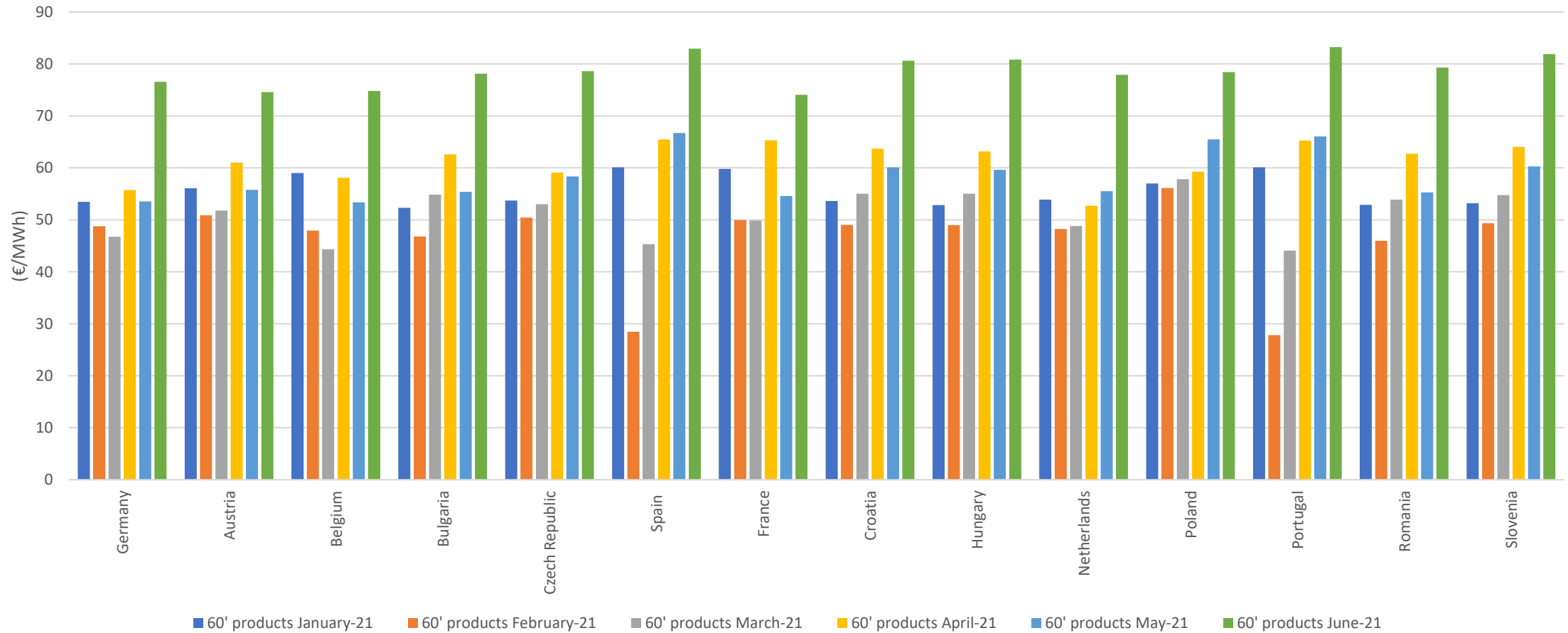
Please avoid misinterpretation of the line(s) between "1" and "0" being aware that the number of trades between 1 hour to 30 minutes is substantially lower (in hundreds) and there is no volume matched between 30 minutes to 0.

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



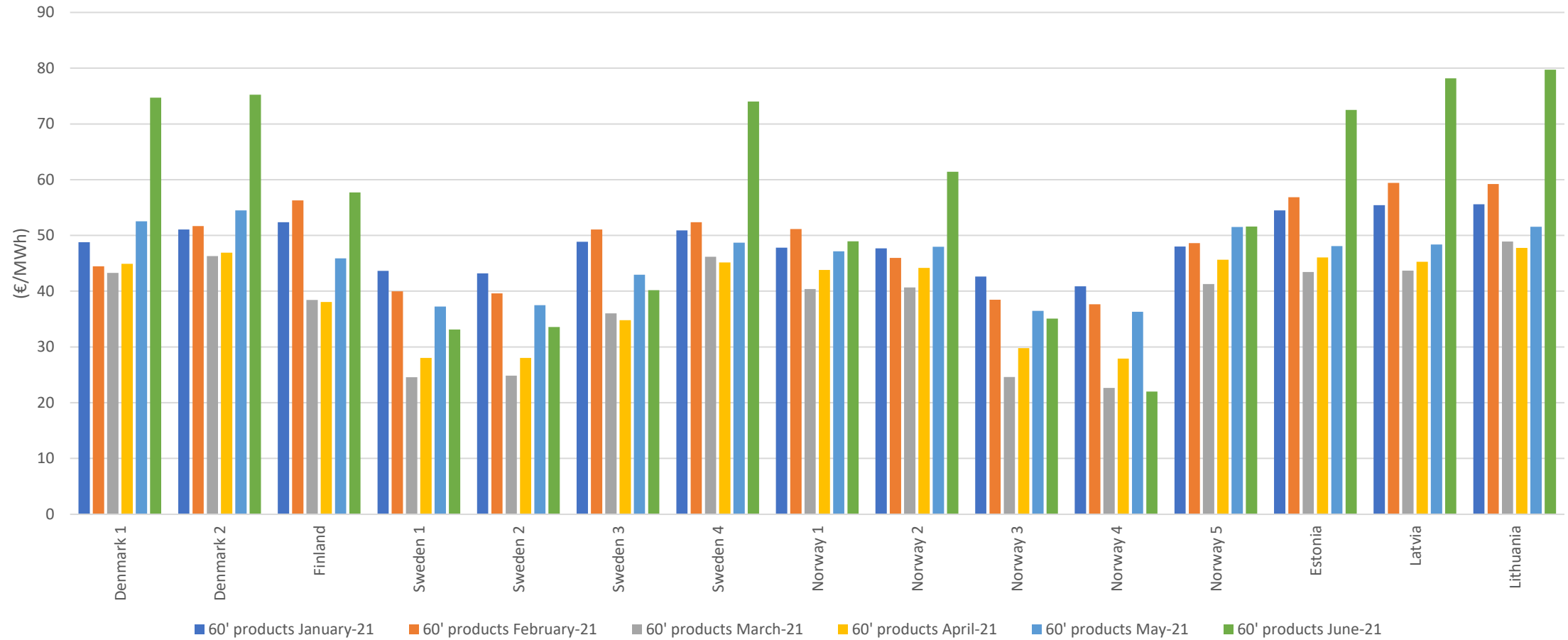
8. Indicators on the prices (1/3)

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



8. Indicators on the prices (2/3)

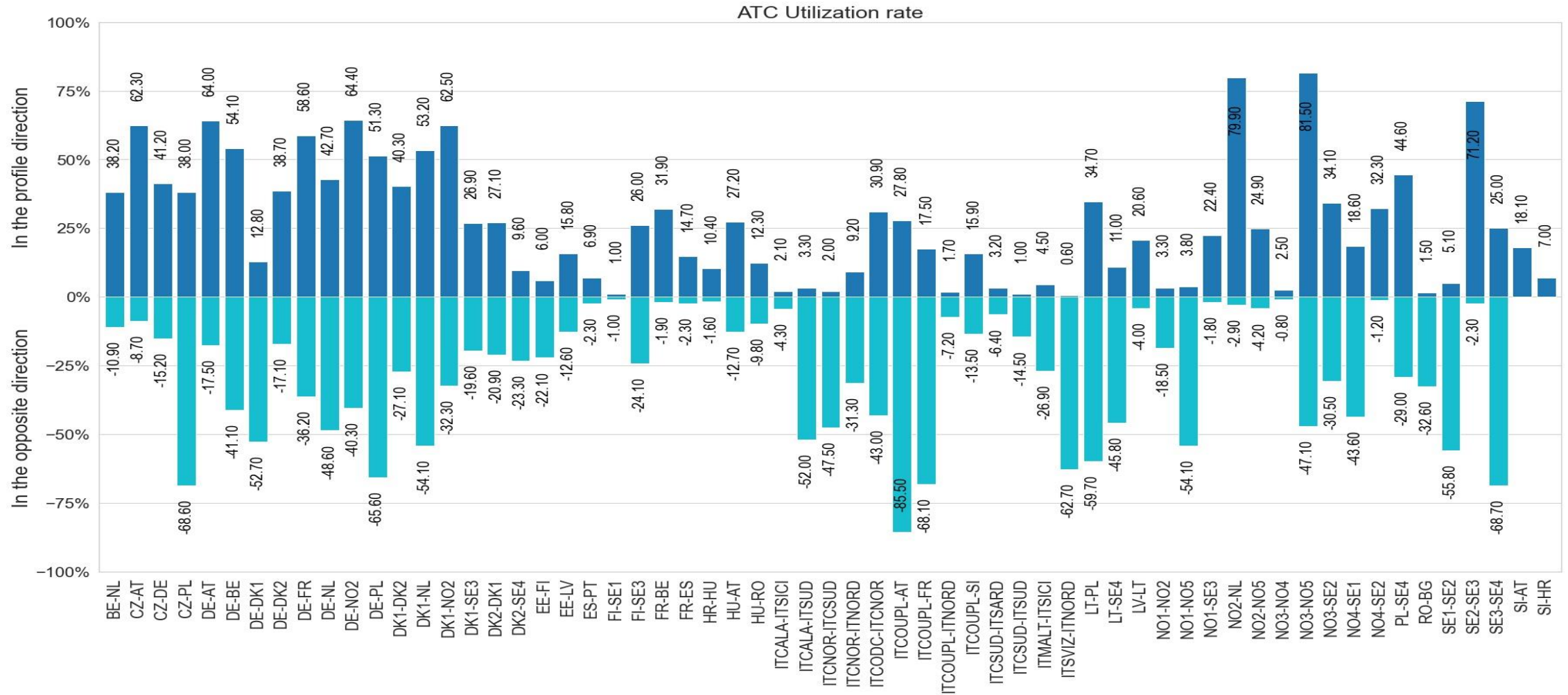
Weighted Average prices per MTU per BZ (Nordic + Baltic, 60' products)



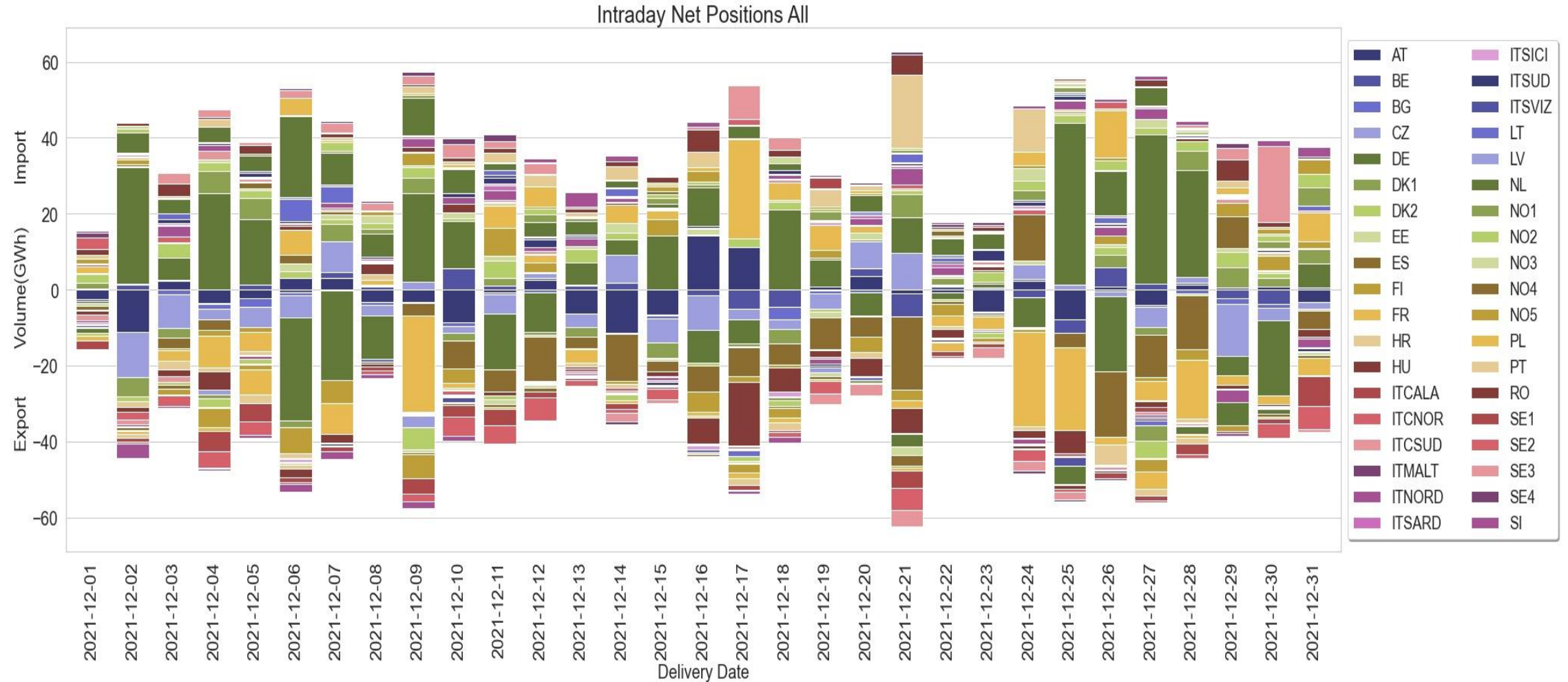
8. Indicators on the prices (3/3)

| Indicator | | H1 2021 | | |
|---|-------------------|---------|--------|-----------|
| | | Avg | Min | Max |
| Volume-Weighted Average Intraday Prices – last trading hour (€/MWh) | Hour Product | 54,14 | -184,2 | 489,04 |
| | Half-hour Product | 62,69 | -53,73 | 175,70 |
| | ¼ Hour Product | 57,59 | -109,7 | 501,80 |
| | Block Product | 45,85 | 2,00 | 198,00 |
| Bid-Ask Spread (€/MWh) | Hour Product | 73,57 | 0,01 | 8 843,09 |
| | Half-hour Product | 114,05 | 0,99 | 9 957,4 |
| | ¼ Hour Product | 88,02 | 0,01 | 3705,00 |
| | Block Product | 873,52 | 0,96 | 10 198,00 |

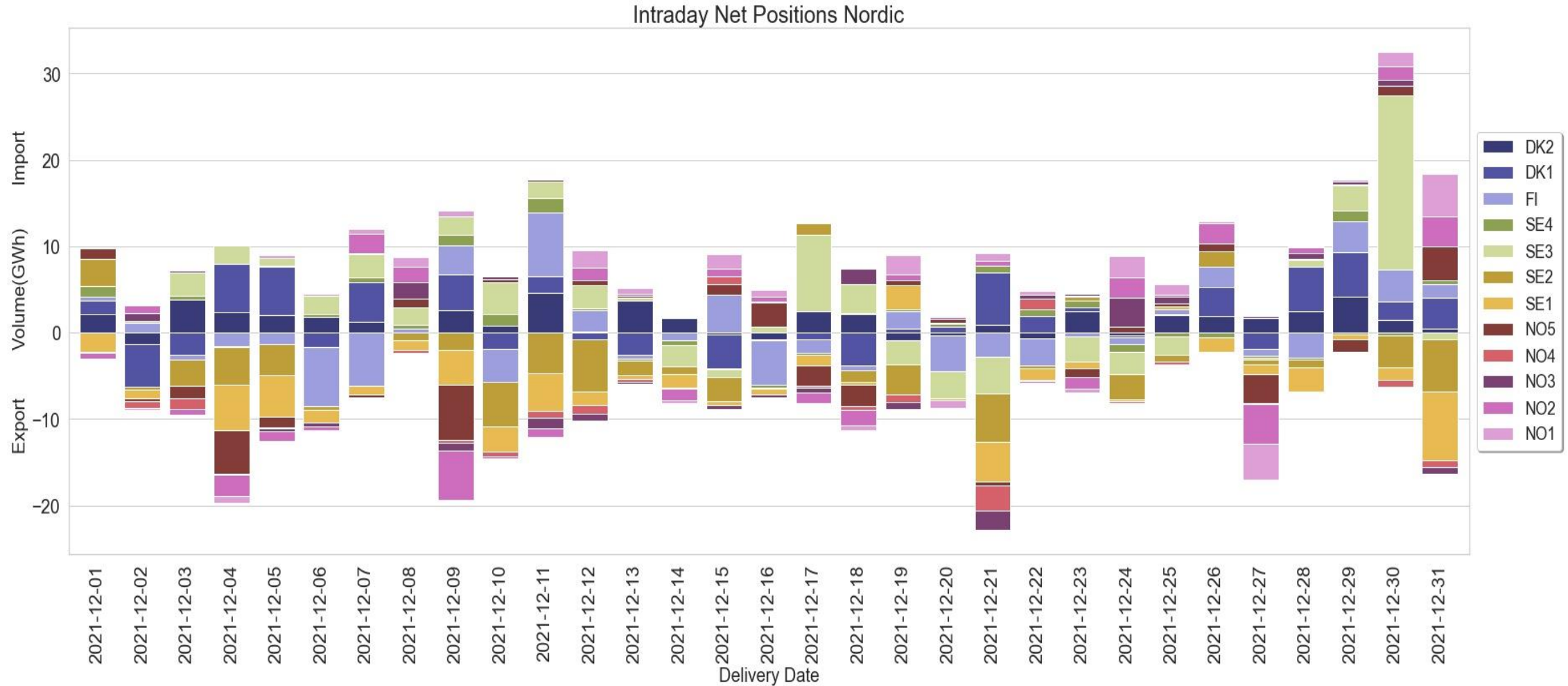
9. Indicators on the capacities



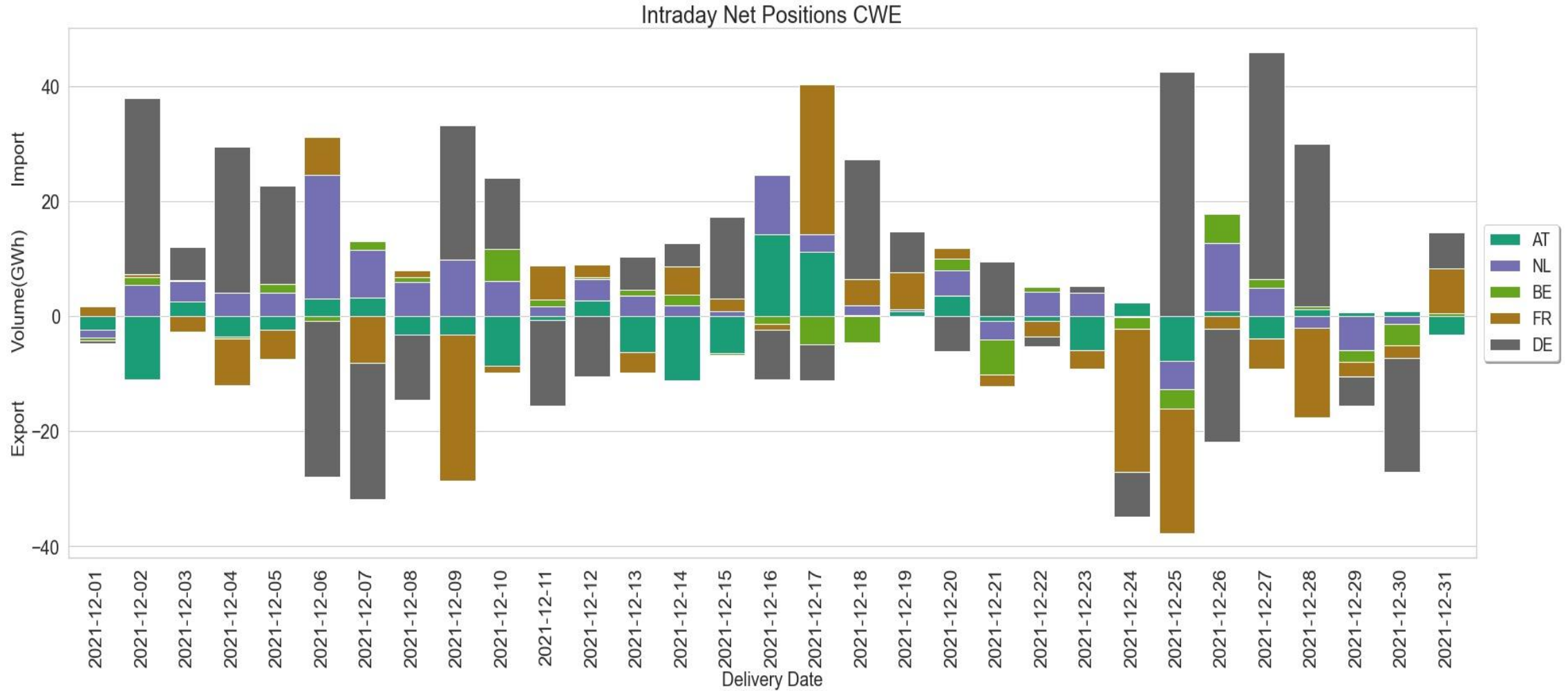
10. Indicators on Net Positions (1/11)



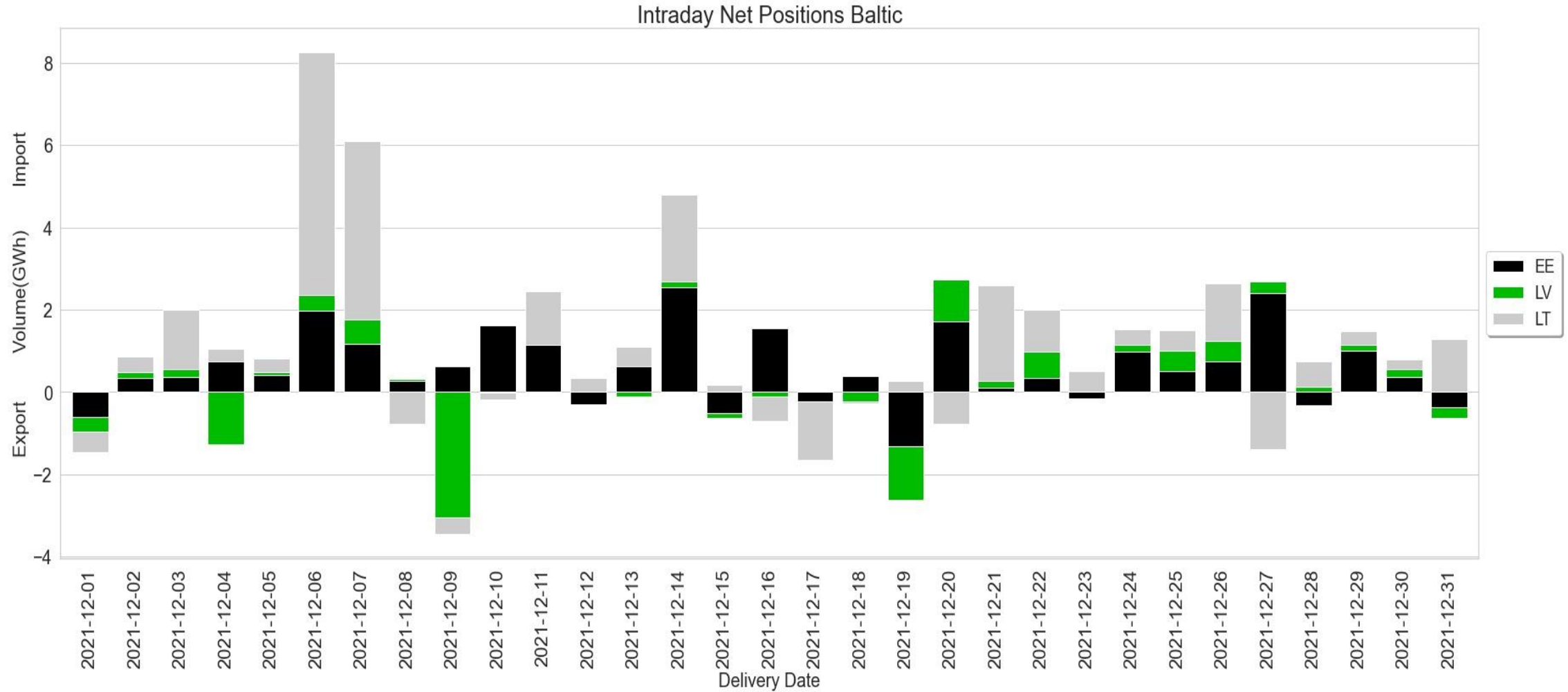
10. Indicators on Net Positions (2/11)



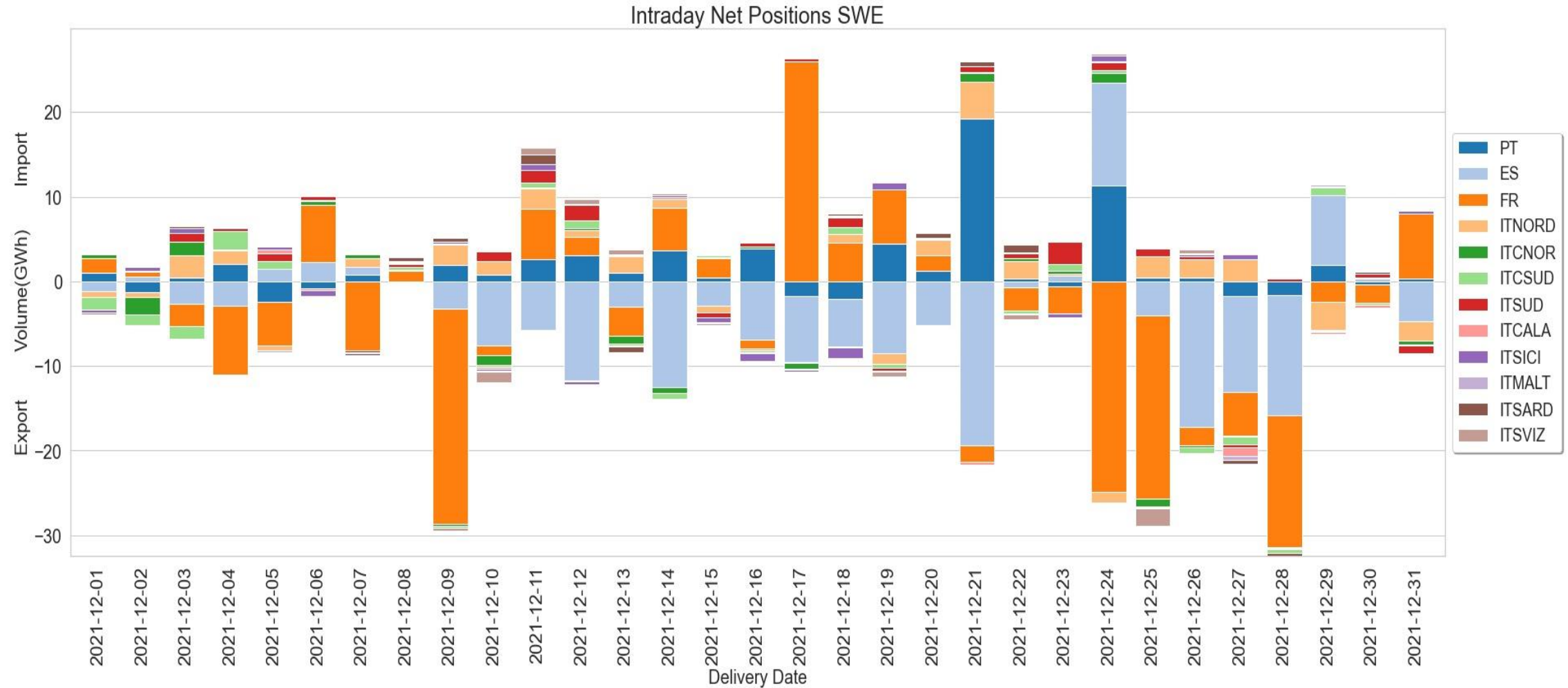
10. Indicators on Net Positions (3/11)



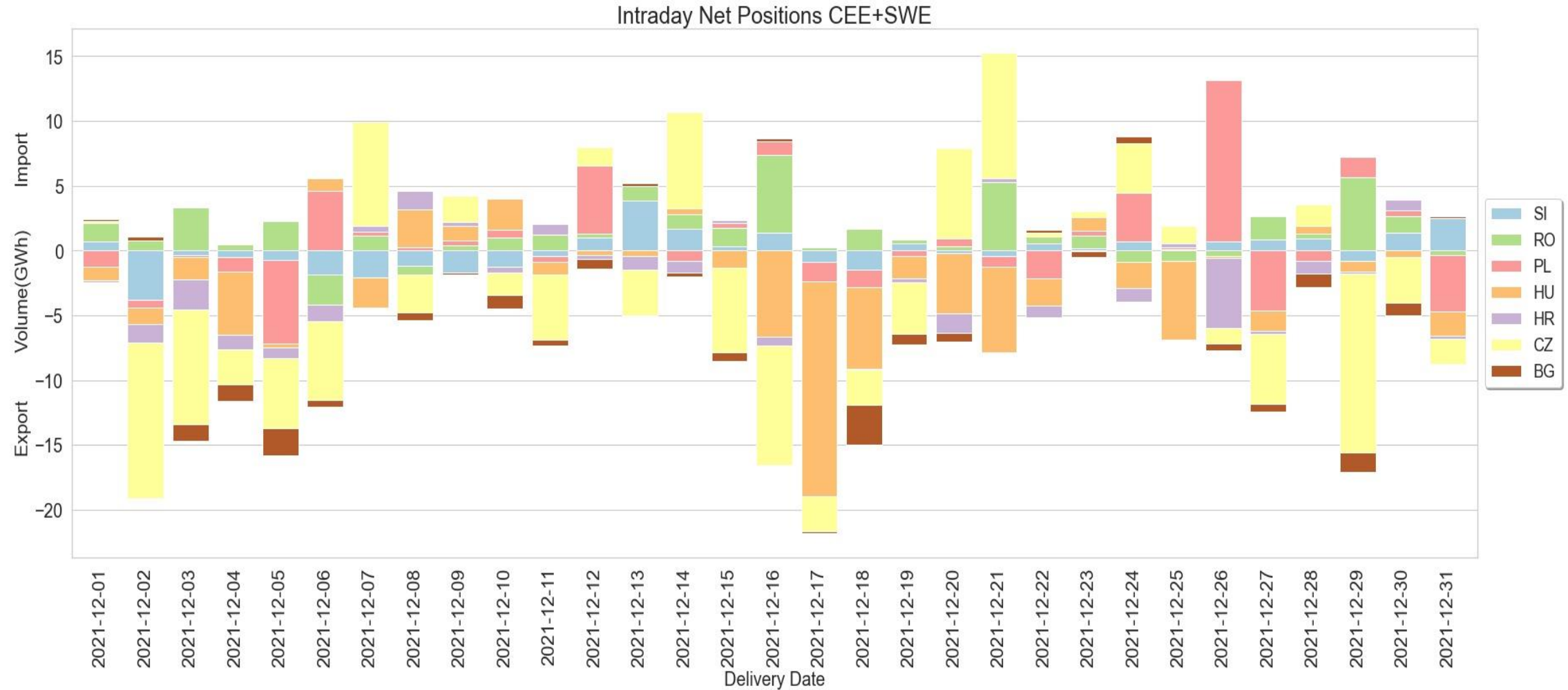
10. Indicators on Net Positions (4/11)



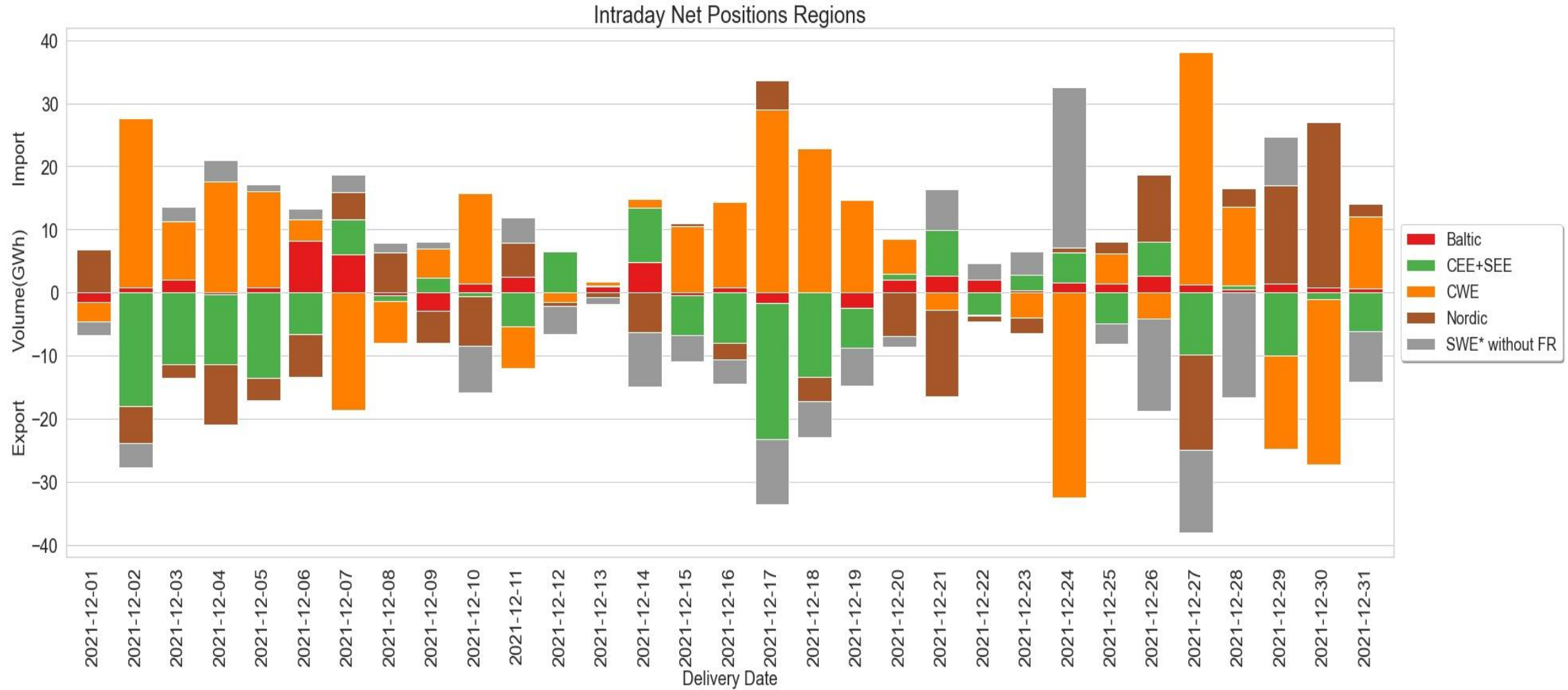
10. Indicators on Net Positions (5/11)



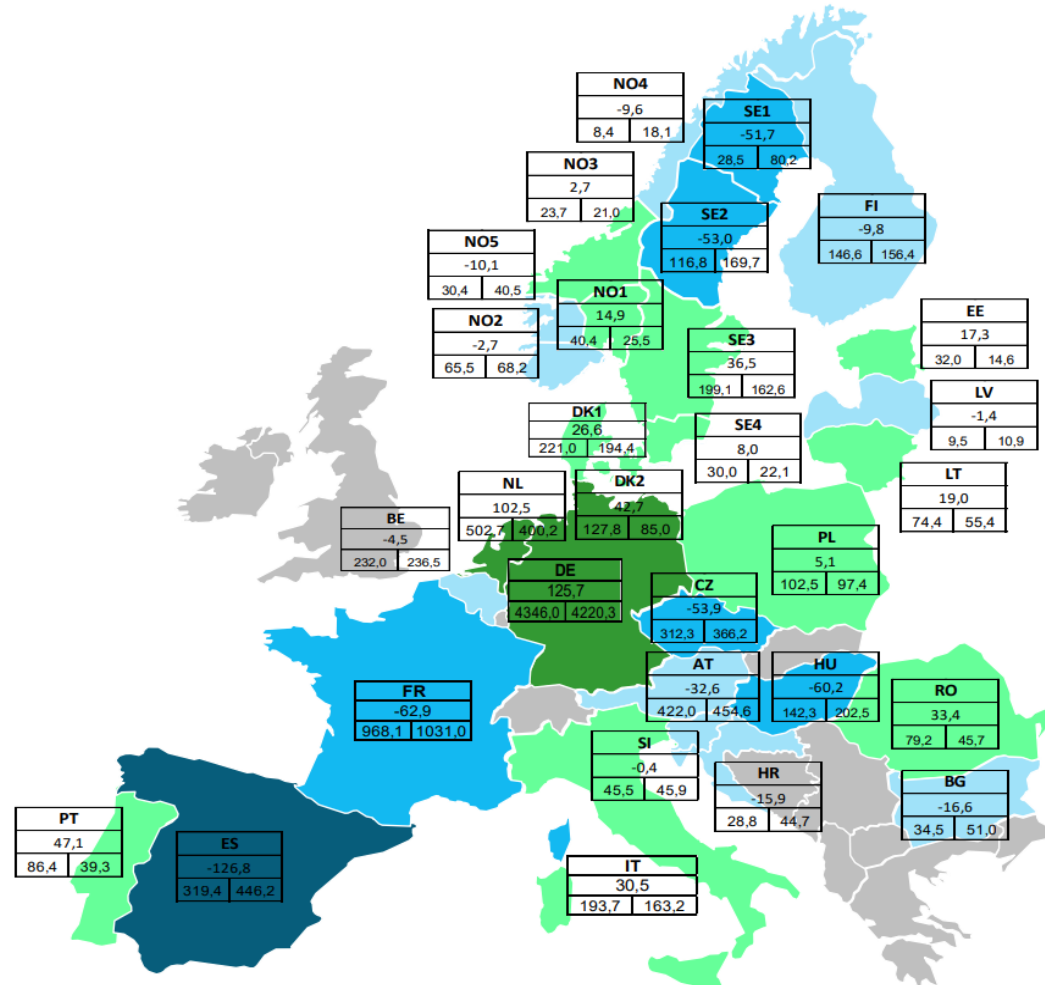
10. Indicators on Net Positions (6/11)



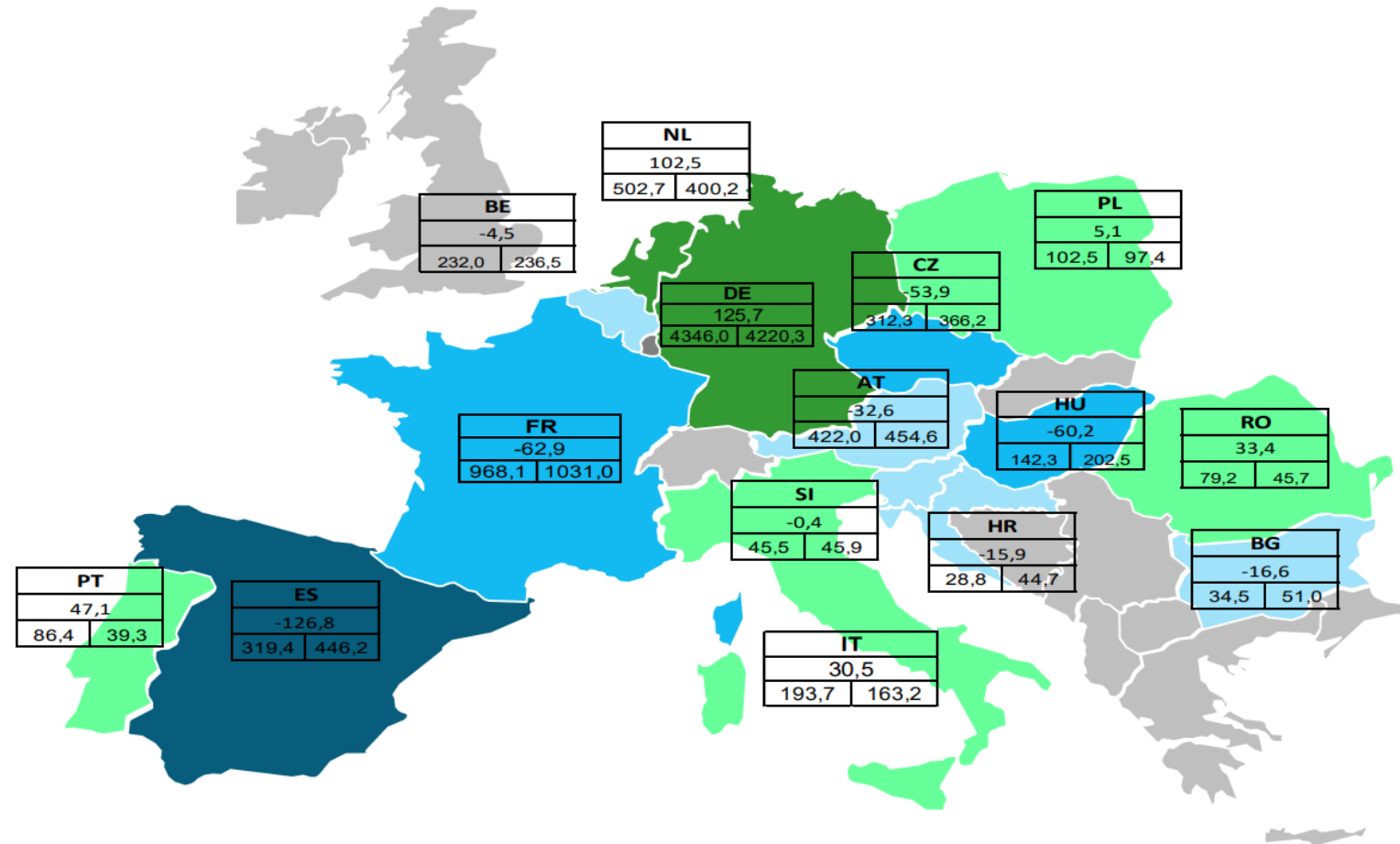
10. Indicators on Net Positions (7/11)



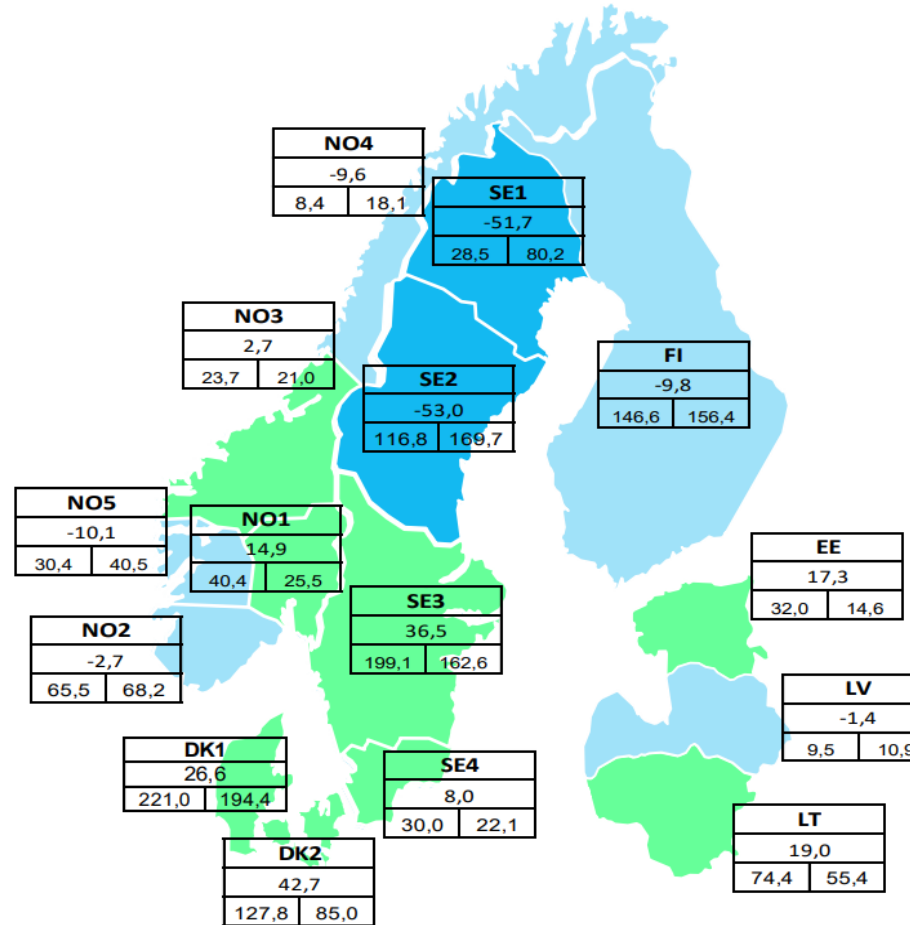
10. Indicators on Net Positions (8/11)



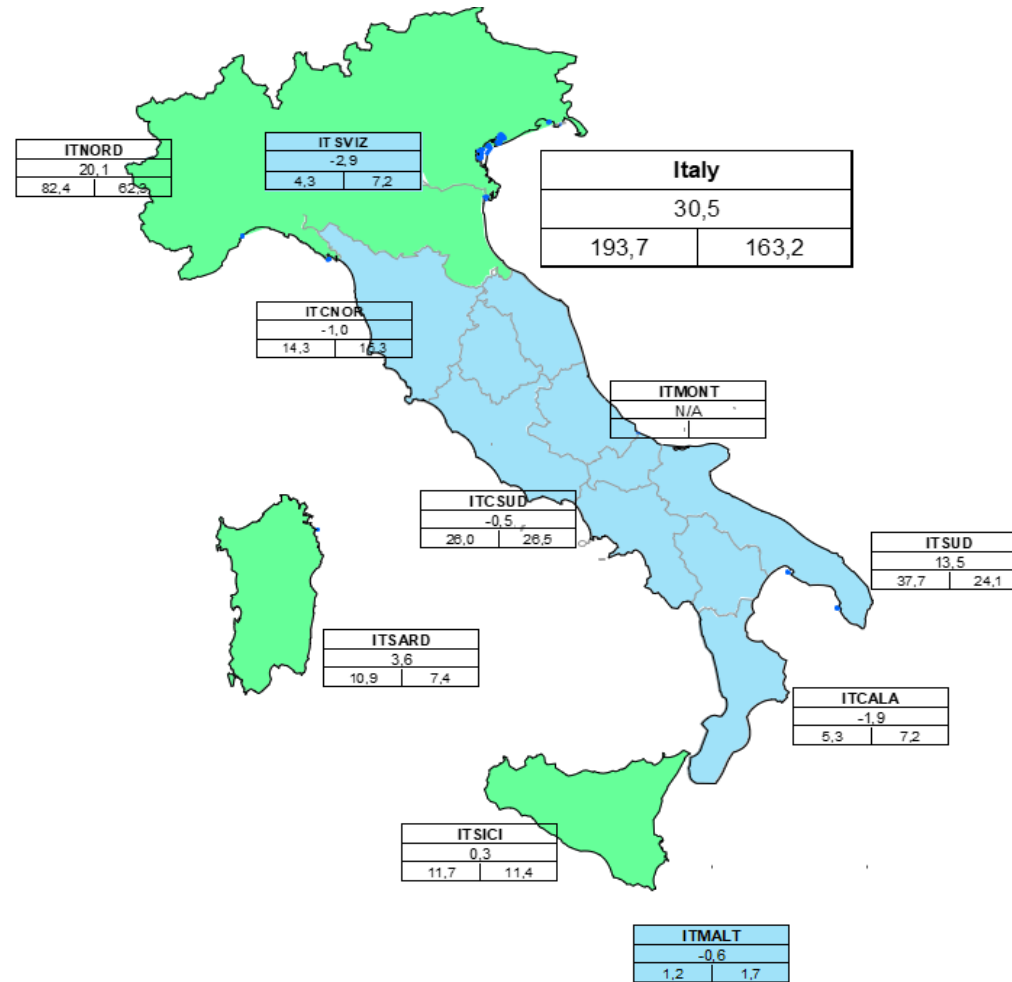
10. Indicators on Net Positions (9/11)



10. Indicators on Net Positions (10/11)



10. Indicators on Net Positions (11/11)



List of Abbreviations

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