



Energy Market Monitoring Report

March 2025



Market Results

SEM
committee

[illegible]

Market Volumes

March 2025

Daily Average Volume	MWh
DAM	123,019
IDA1	25,744
IDA2	2,899
IDA3	773
IDC	69

Total Monthly Volume	MWh
DAM	3,813,593
IDA1	798,079
IDA2	89,855
IDA3	23,956
IDC	1,930
Total	4,727,413

Total Market Value	€
DAM	€ 510,047,110
IDA1	€ 109,955,887
IDA2	€ 12,896,399
IDA3	€ 4,060,526
IDC	€ 287,808
Total	€ 637,247,730

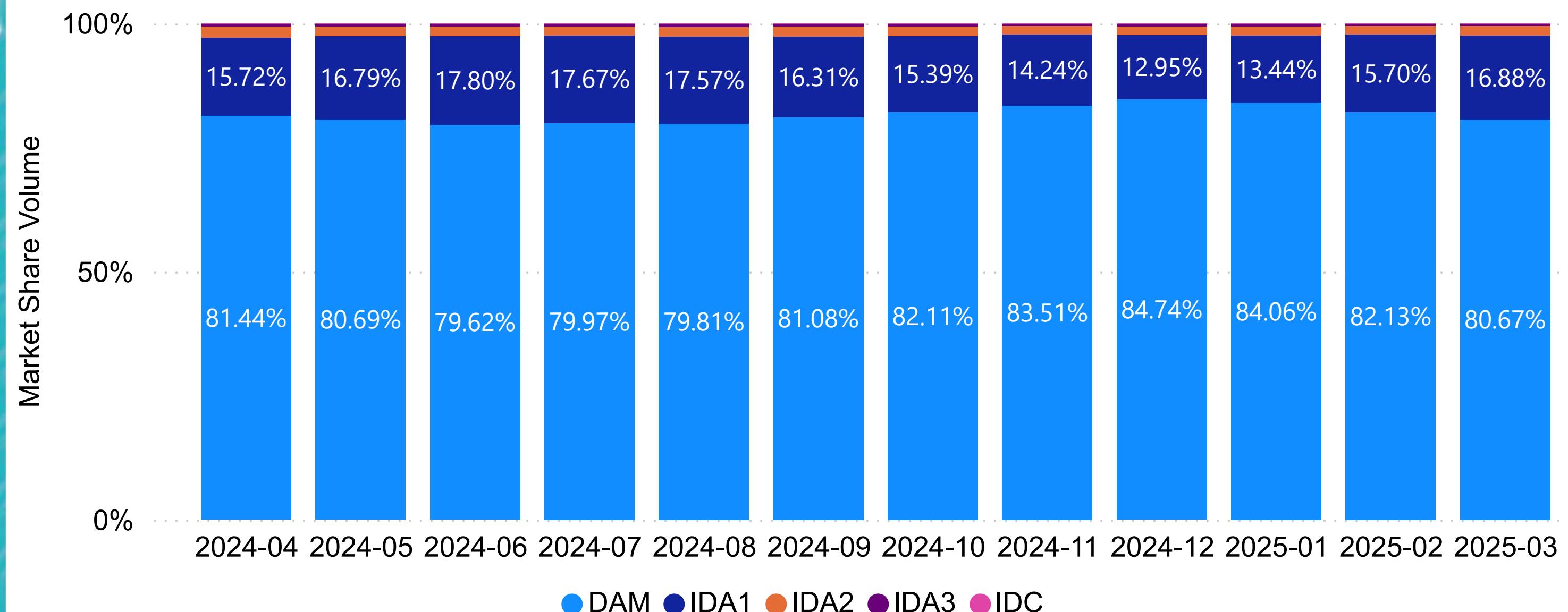
Market Volumes and Values

The Day Ahead Market is, by far, the largest market in the SEM, circa 80-85% of all transactions are cleared in this market. The distribution of volumes across the SEM markets have been broadly constant since the introduction of these trading arrangements in October 2018.

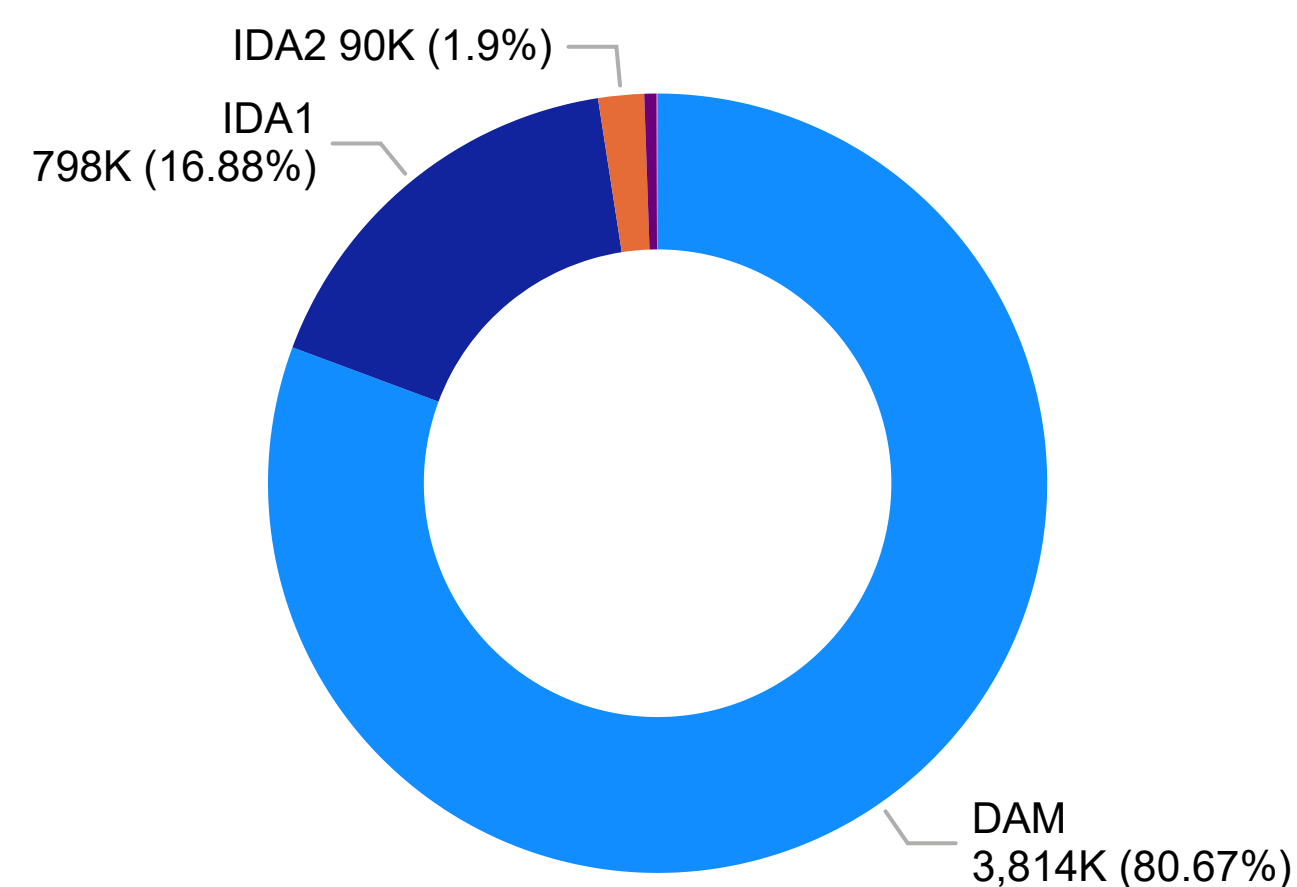
Generally, in power markets, market participants will prefer to lock their positions well ahead of delivery time given the increased volatility in prices closer to real time.

Another important factor is associated with the TSO dispatch arrangements. The vast majority of wind generation in the SEM is cleared at the Day Ahead stage. That might also explain to some extent the additional volumes cleared in this market.

Ex-Ante Monthly Volume by Market

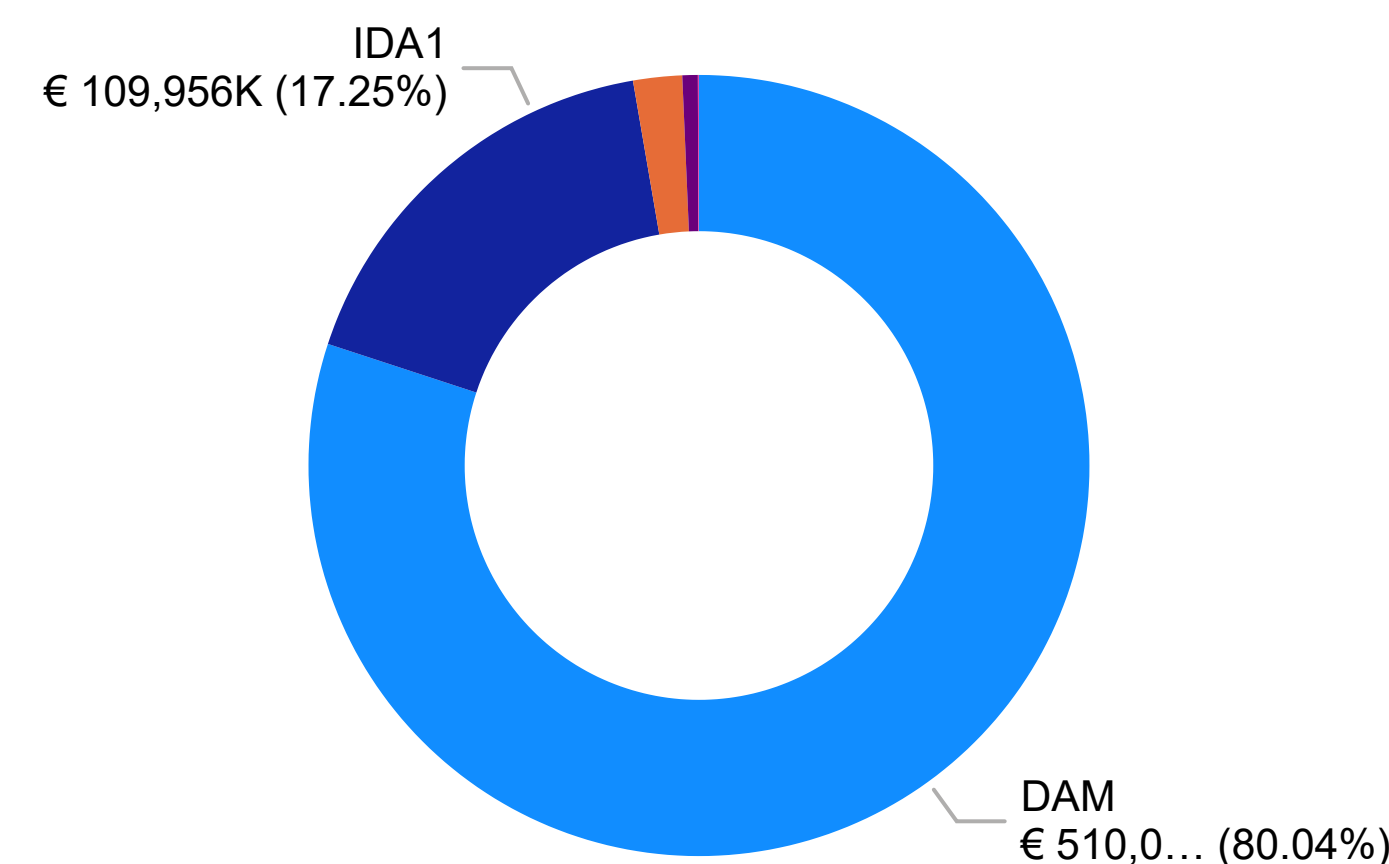


Ex-Ante Volumes (MWh)



● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

Ex-Ante Values (€)



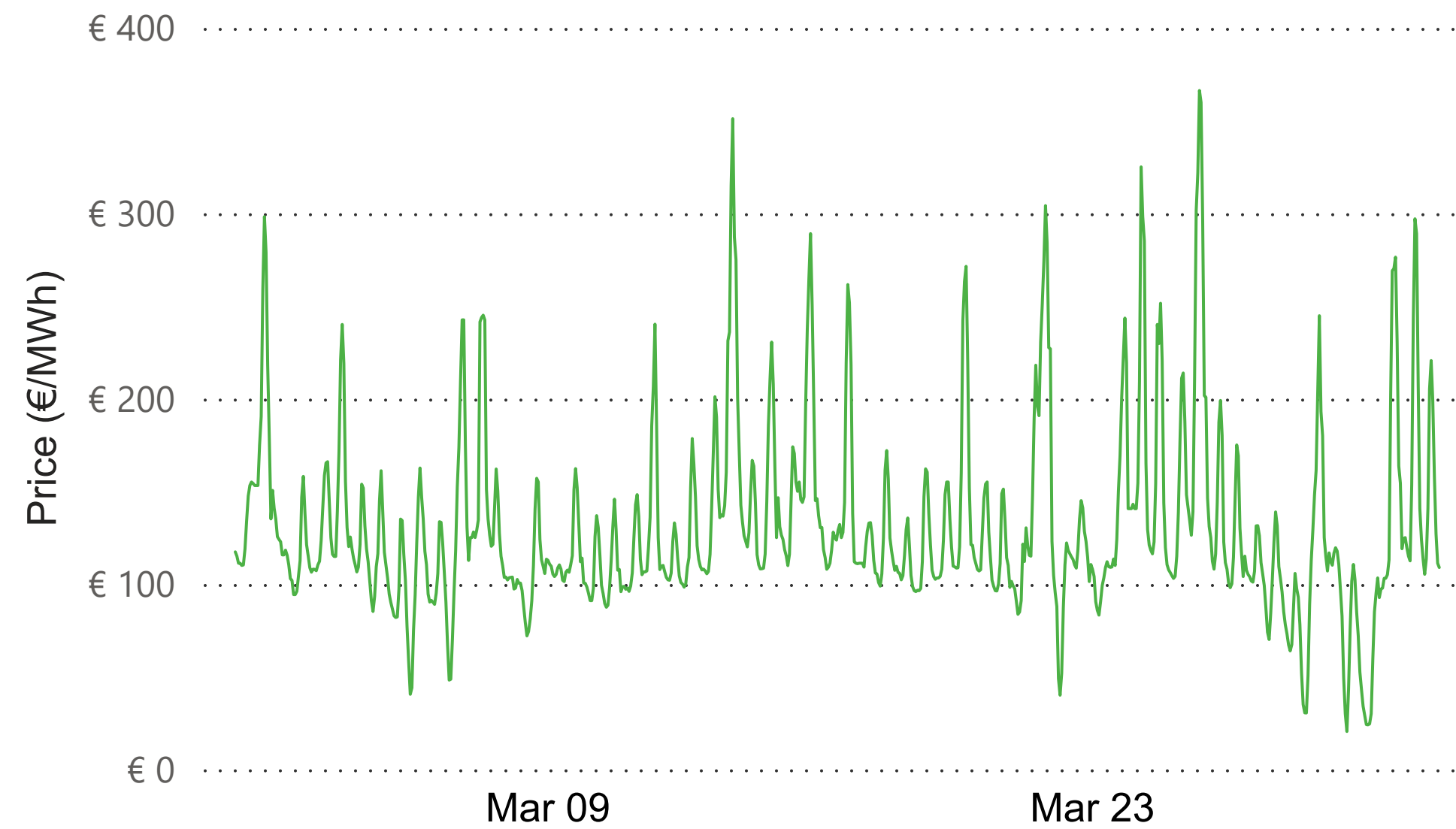
● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

Day Ahead Market March 2025

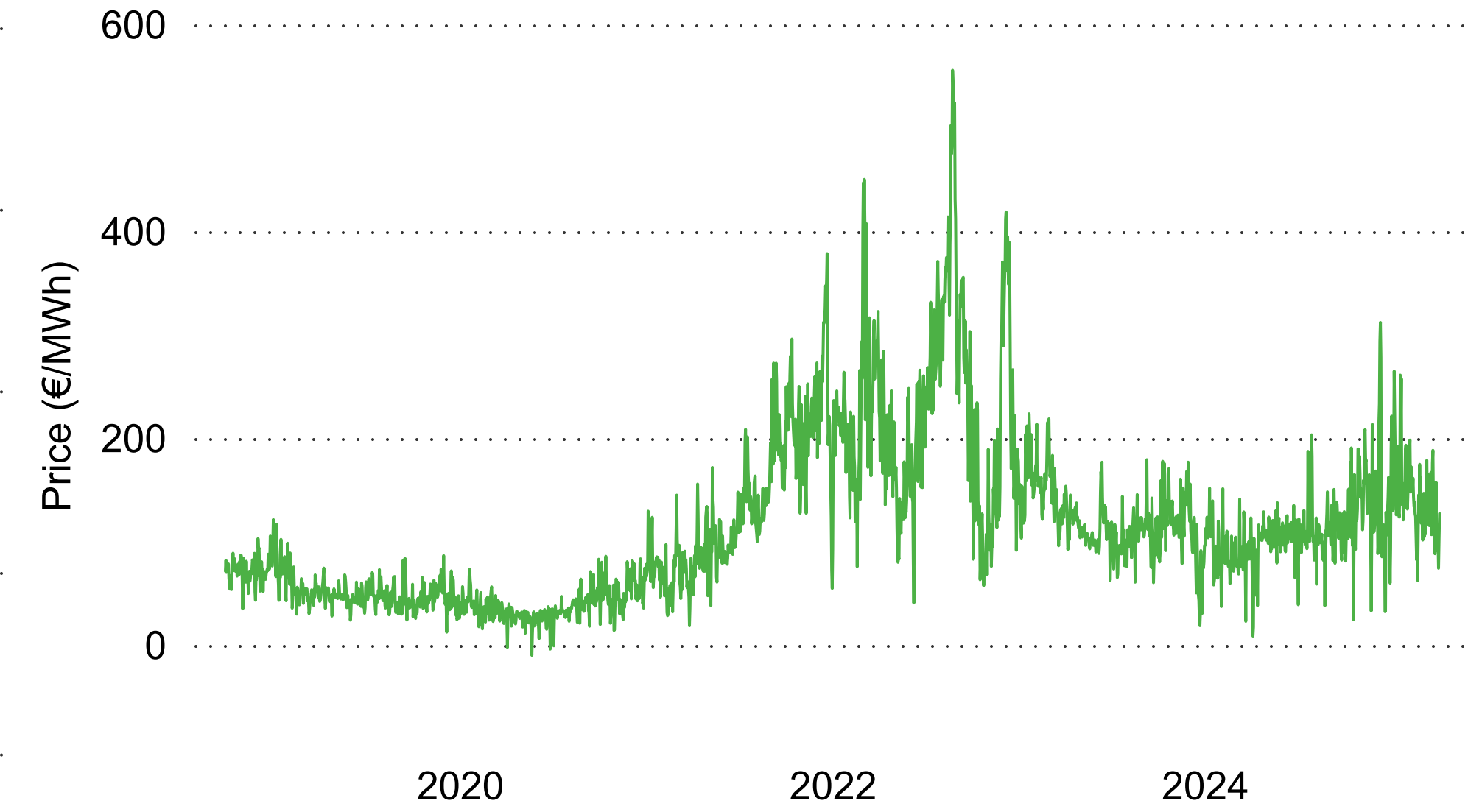
€ 131.80
Average DAM Price
€ 20.42
Min DAM Price
€ 366.21
Max DAM Price

The most frequent price range for January was between €100 and €150.

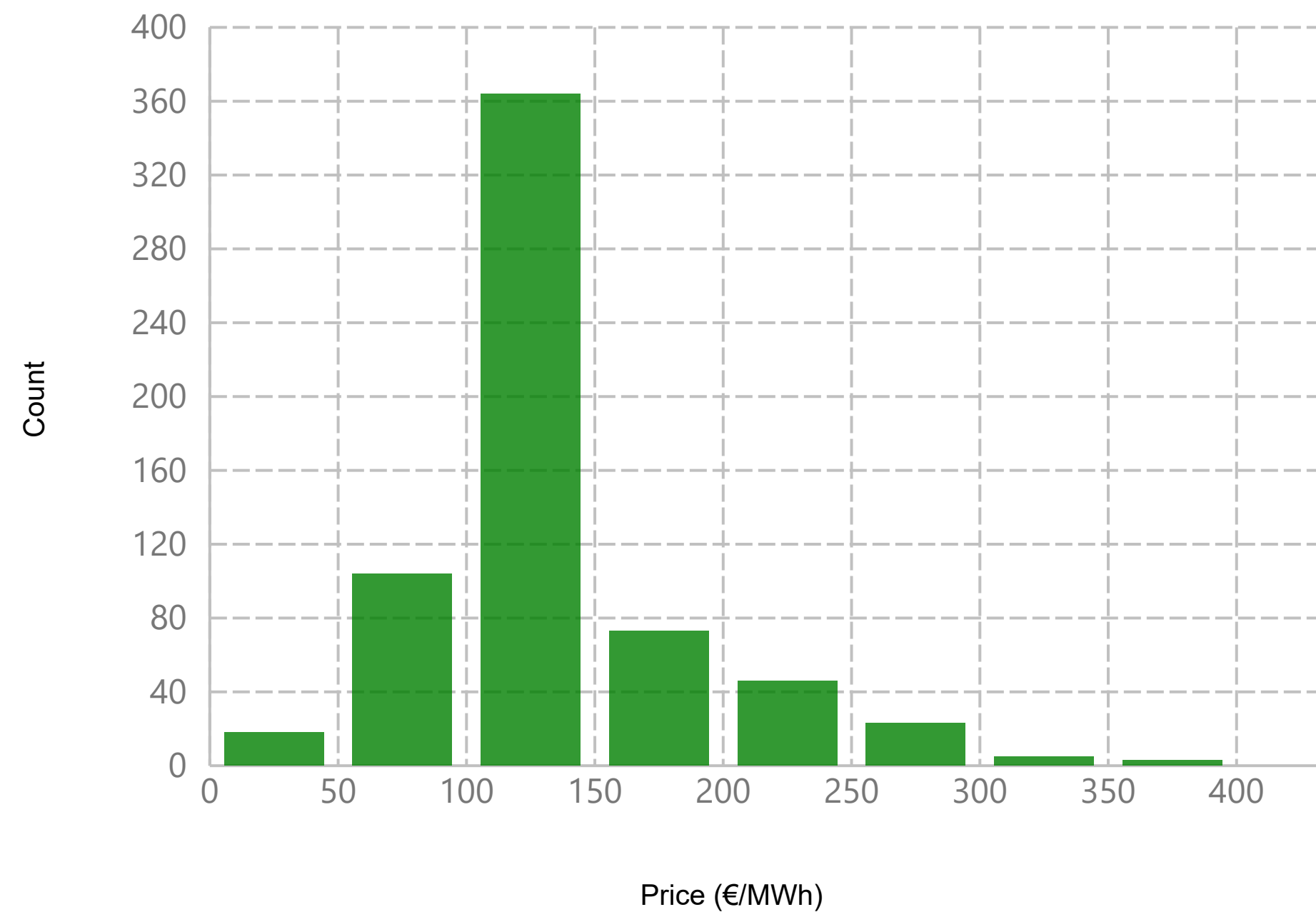
DAM Prices



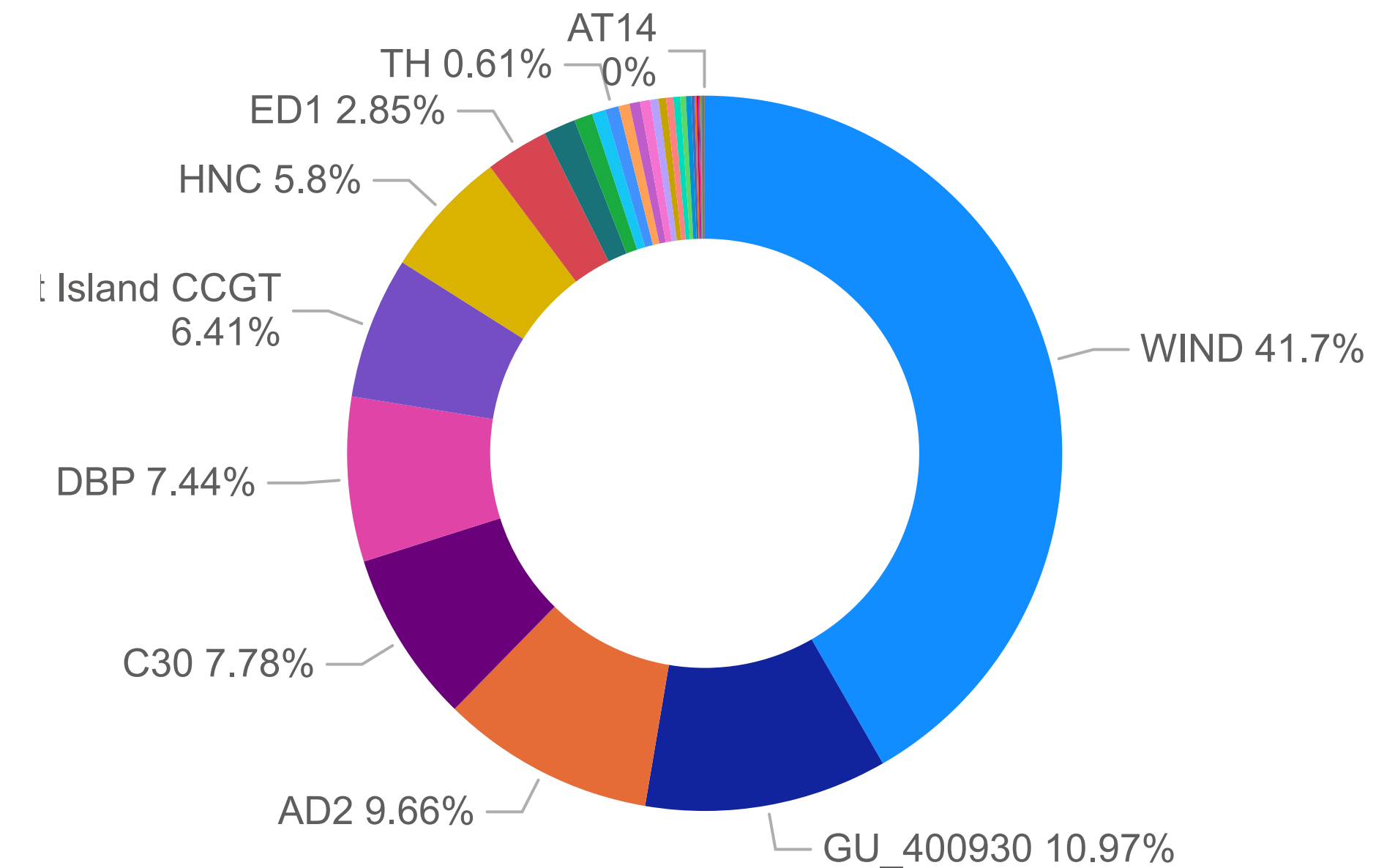
Historic Daily Average DAM Prices



Histogram of DAM Prices



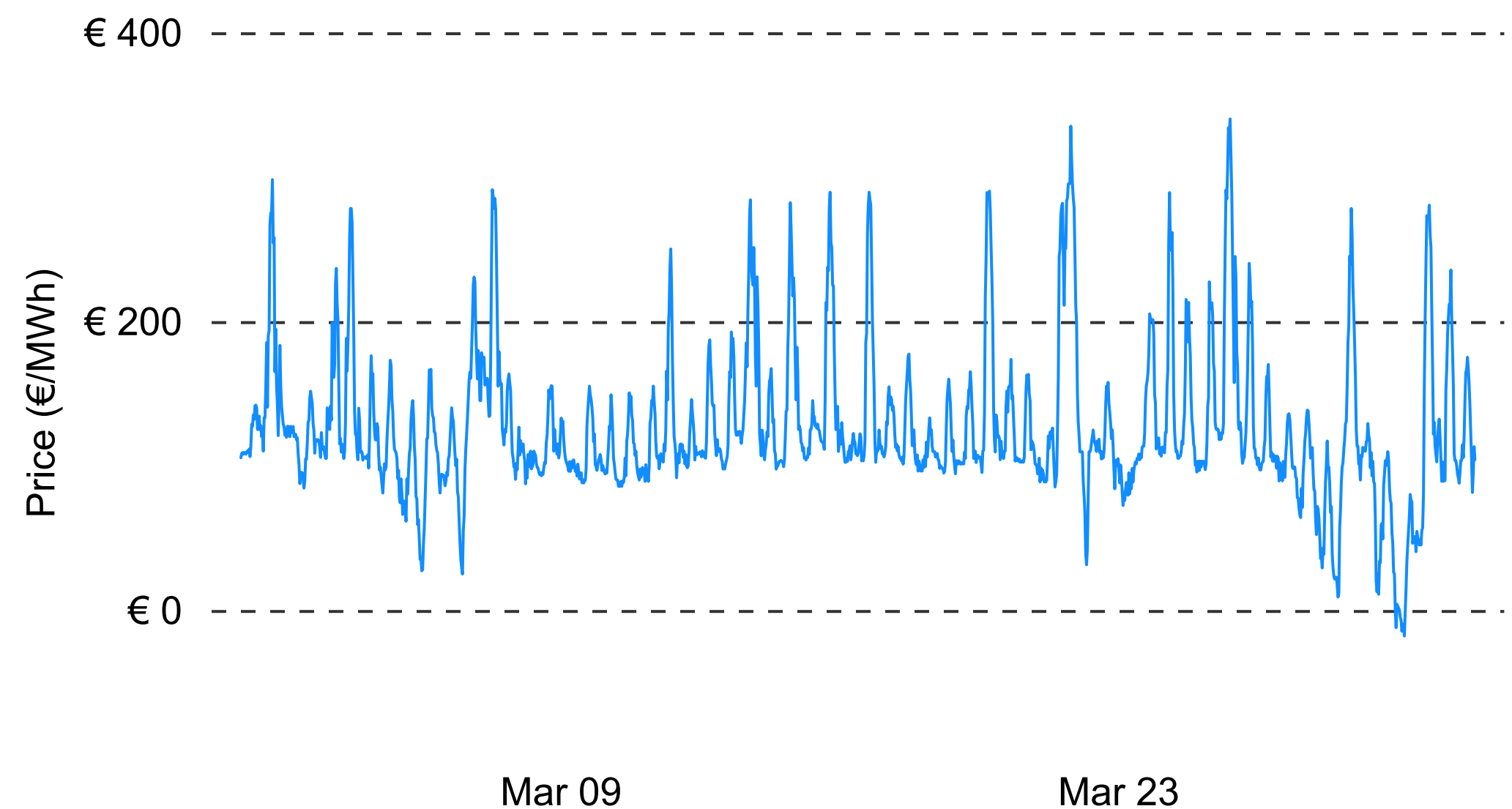
DAM Sell Side Generator Order Results



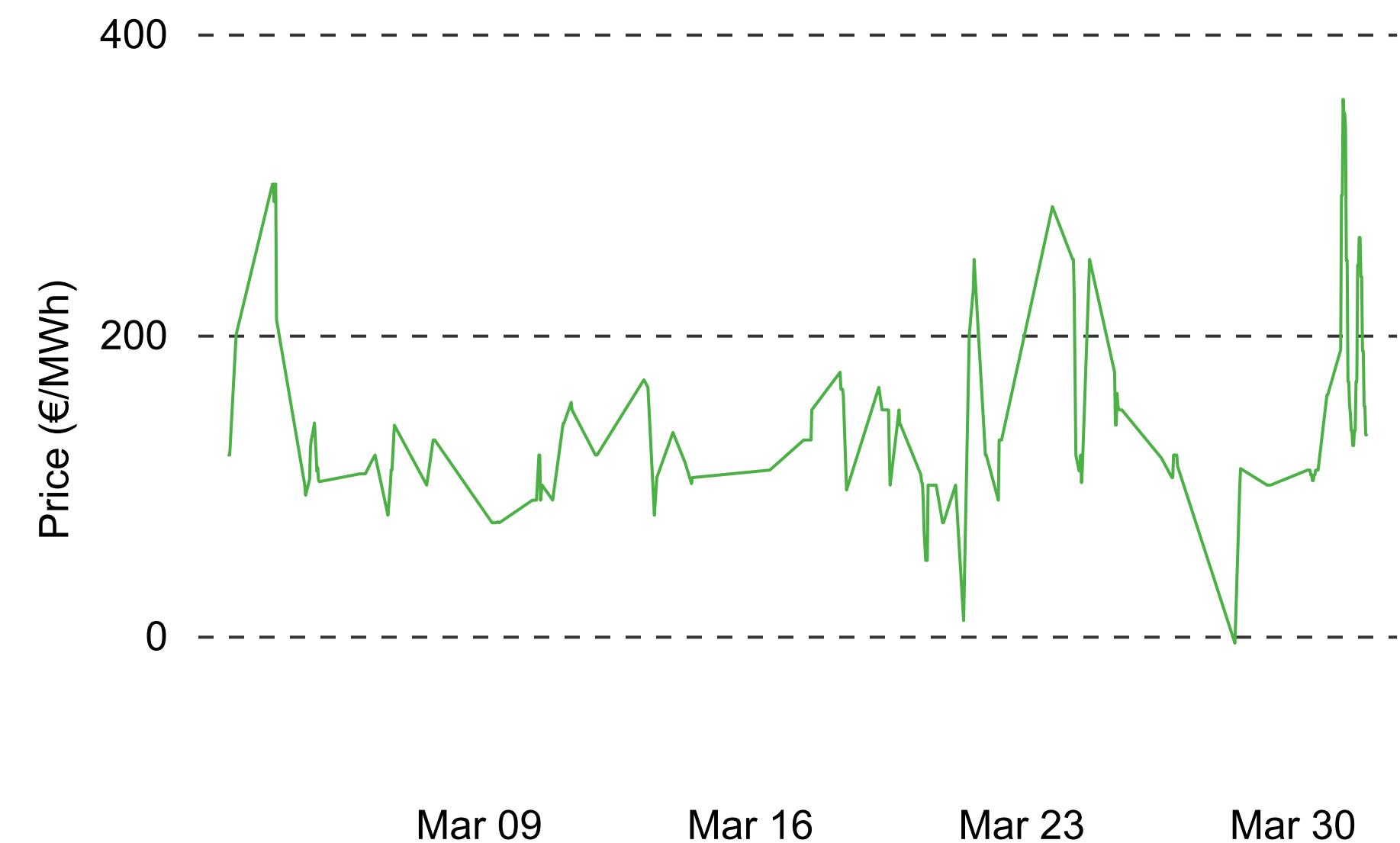
Intraday Market March 2025

€ 127.47
Average IDA1 Price
-€ 18.00
Min IDA1 Price
€ 340.00
Max IDA1 Price

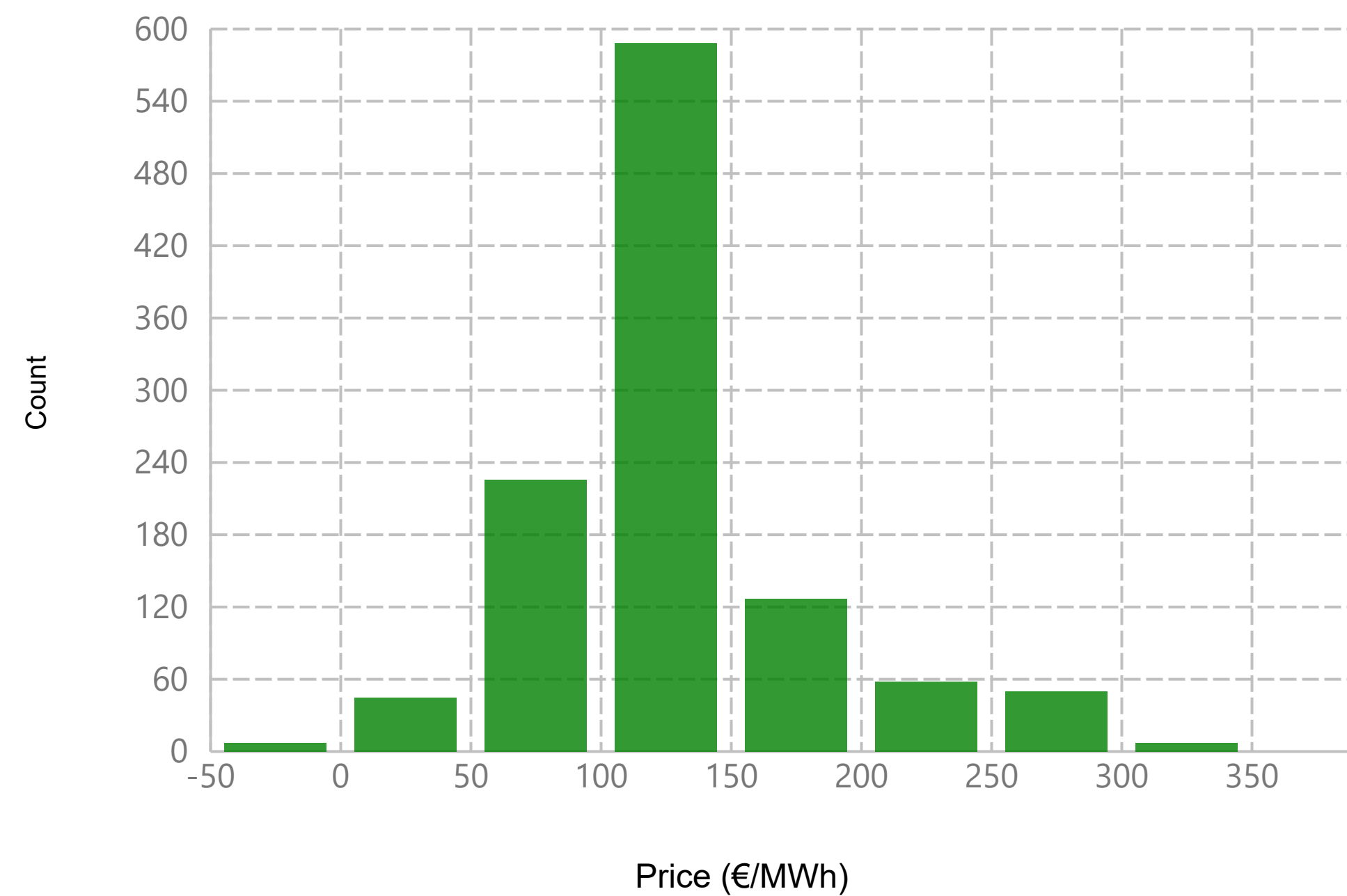
IDA 1 Prices



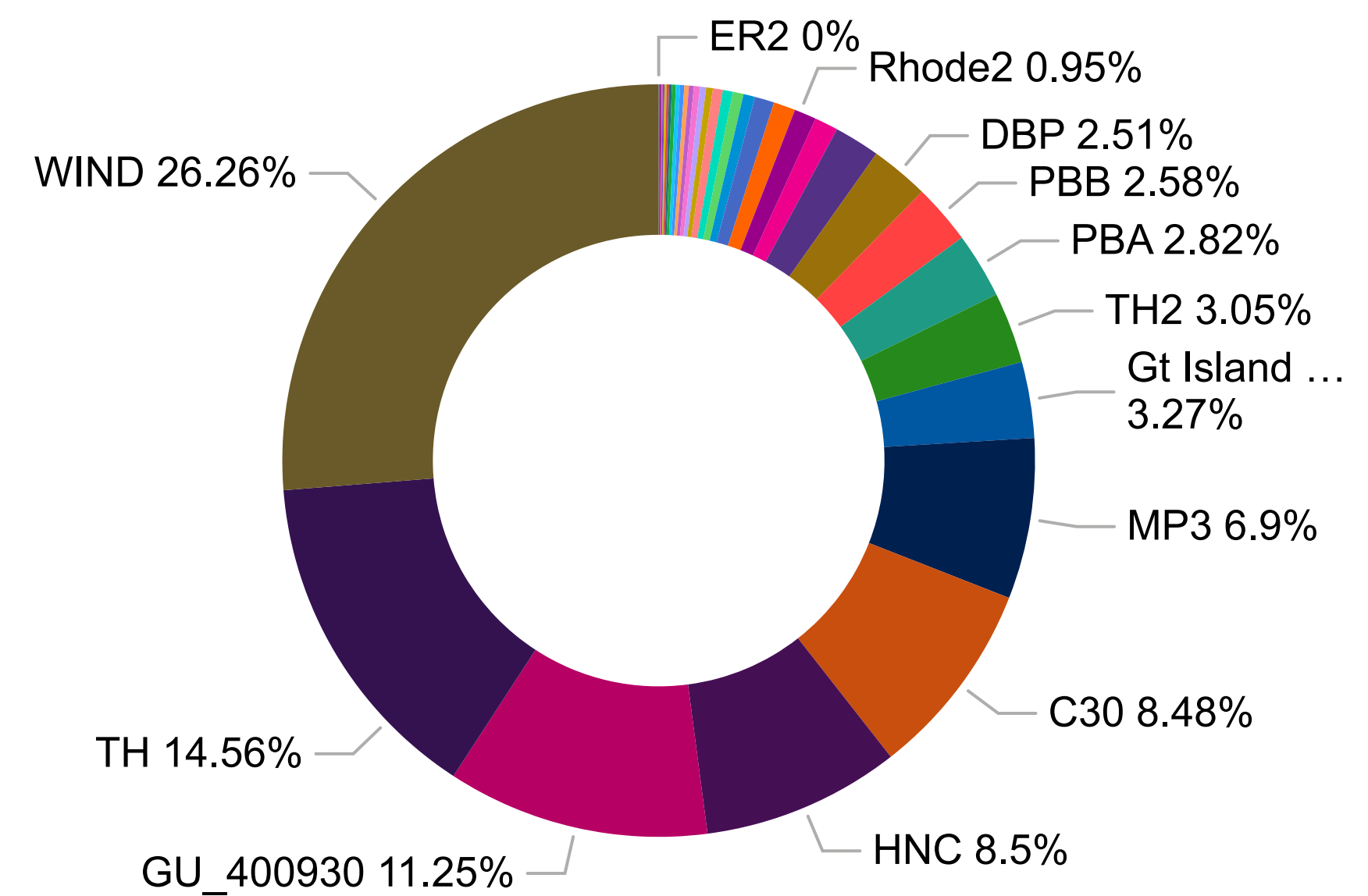
IDC Prices



Histogram of IDA1 Prices



IDA1 Sell Order Results By Market Participant



The most frequent price range for January was between €100 and €150.

SEM vs GB DAM March 2025

SEM Day Ahead Price
€ 131.80
Average DAM Price
€ 20.42
Min DAM Price
€ 366.21
Max DAM Price

GB Day Ahead Price
€ 106.34
Average Price
-€ 6.43
Min Price
€ 182.95
Max Price

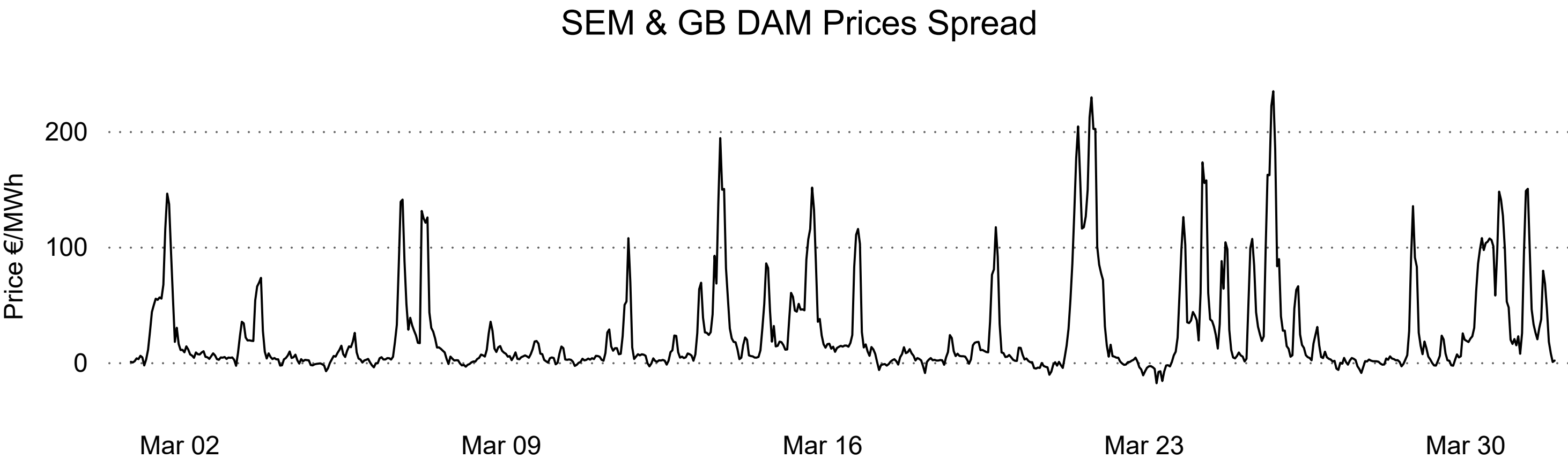
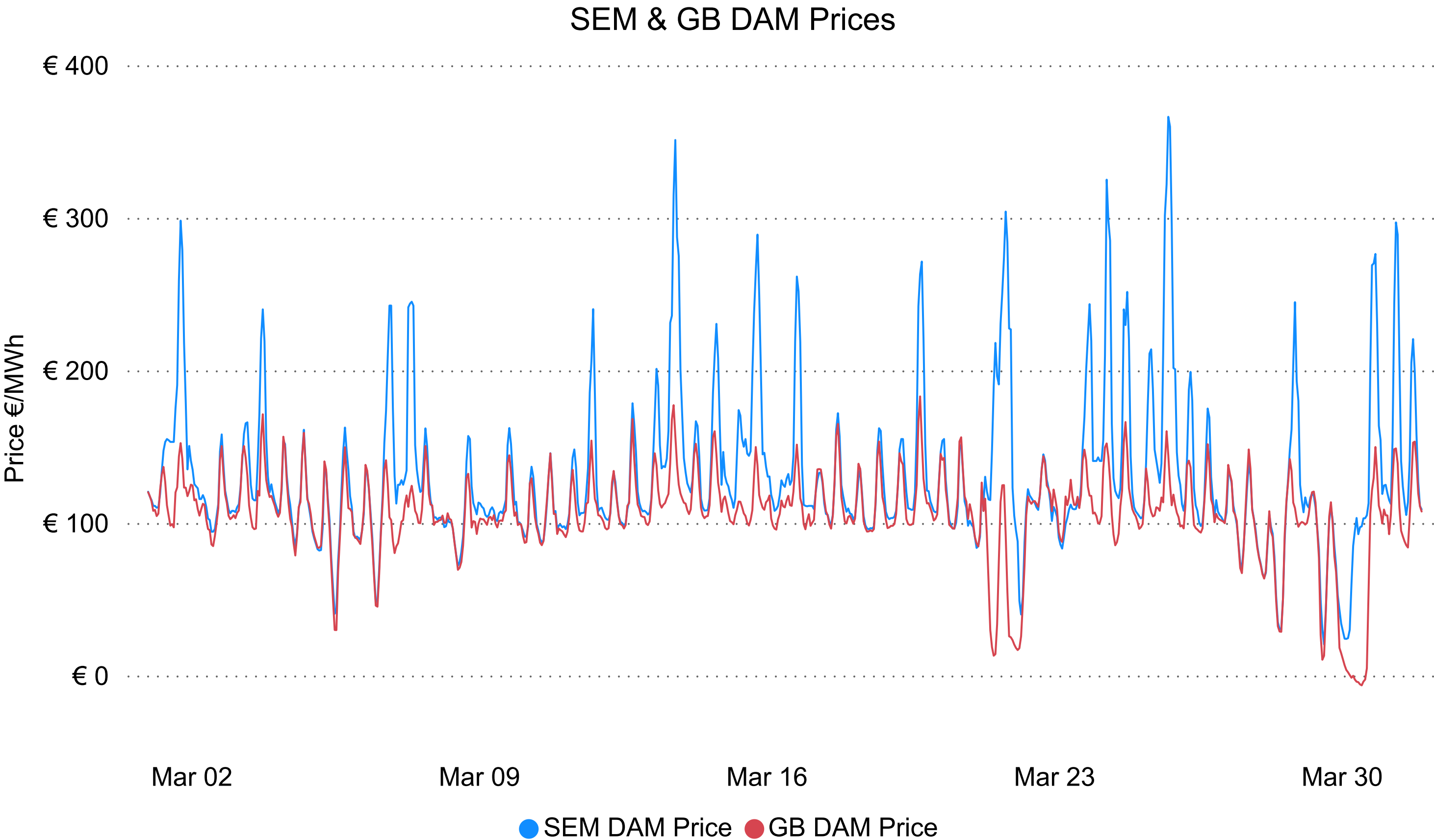
SEM-GB Price Differential

The charts show that the SEM and GB prices appear to follow the same general trend. Significant spreads can be observed on several occasions.

Basically, the periods of significant spreads between the two markets are generally correlated with period of very low wind.

Due to the prevailing fuel mix across both regions, the GB price spiked during the period as more costly conventional generations may need to be brought online to meet demand.

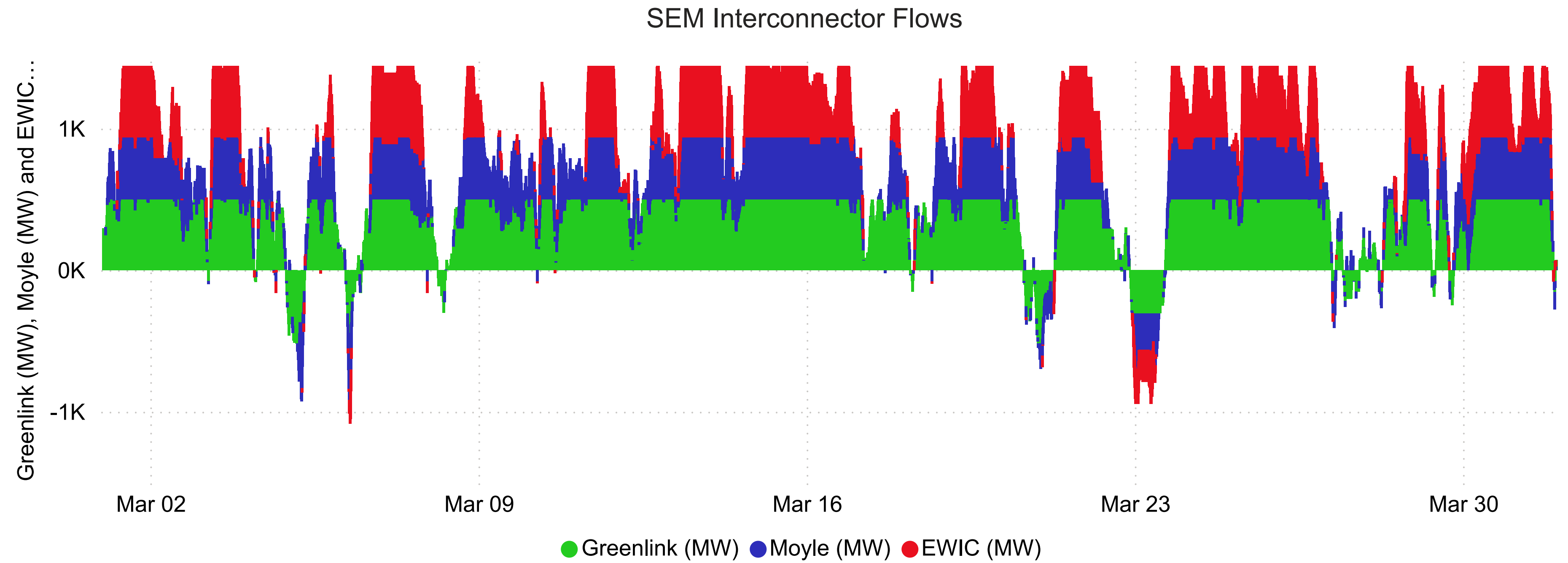
The MMU is investigating this matter further and will come back to the SEMC in the foreseeable future with more information on this front.



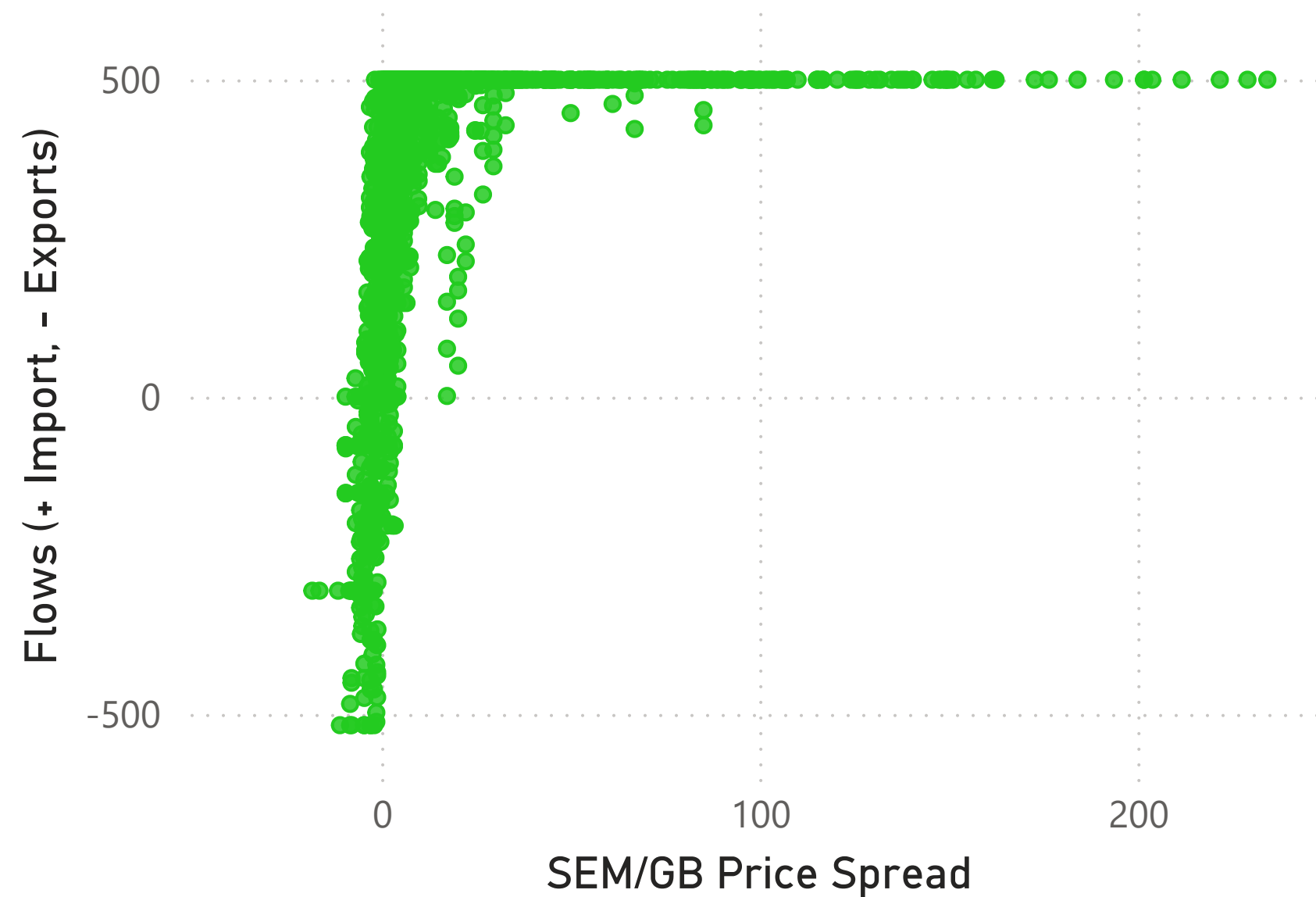
SEM Interconnectors March 2025

Greenlink dominates with the highest average flows and consistent utilisation, nearly 98% of the time.

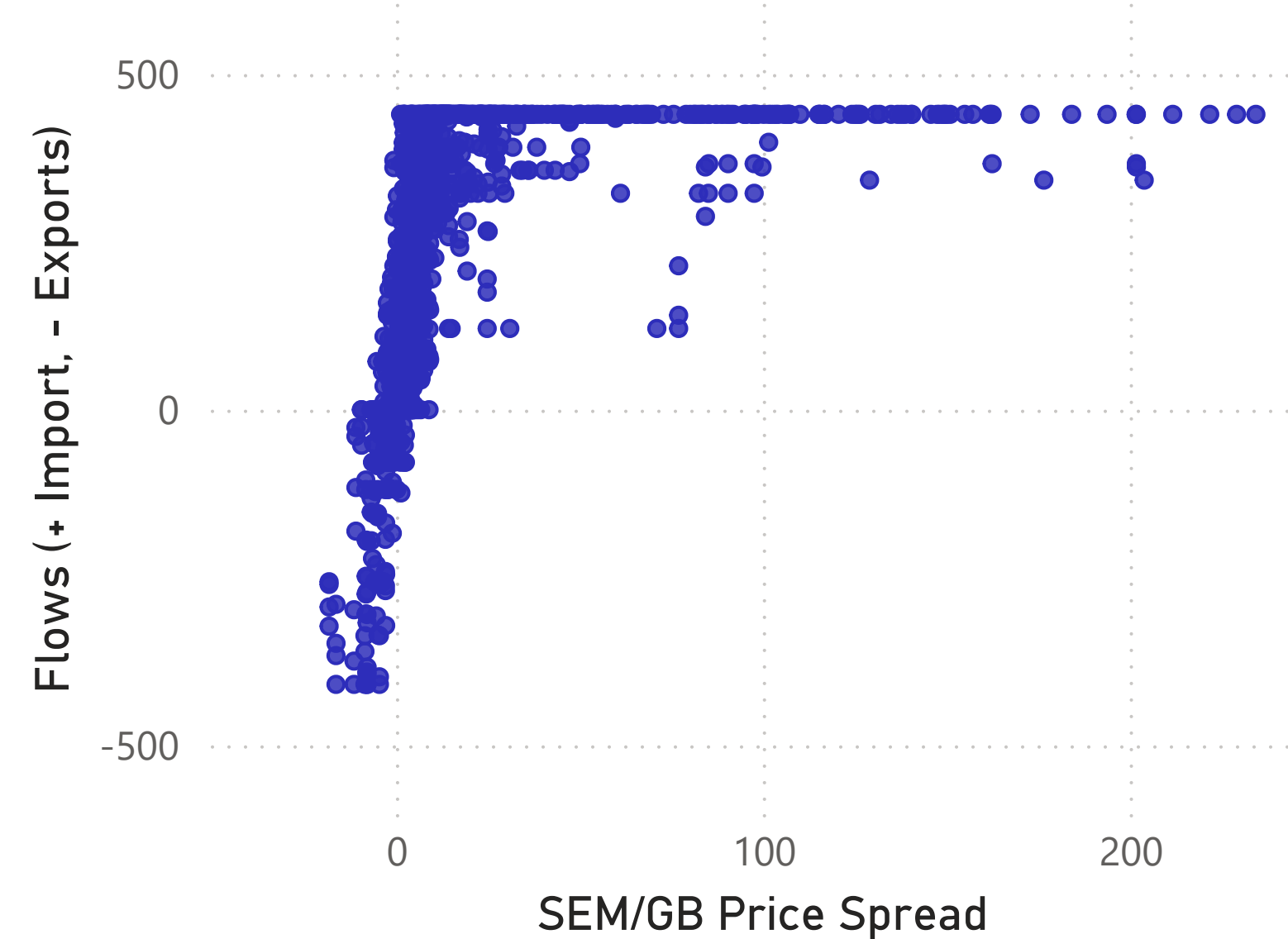
Also, Moyle maintains its operational frequency but its average flow capacity has dropped by c15% since Greenlink go-live while EWIC has experienced the most dramatic impact with average flows reduced to 55% and zero-flow periods increasing from 20% to 45% of the time.



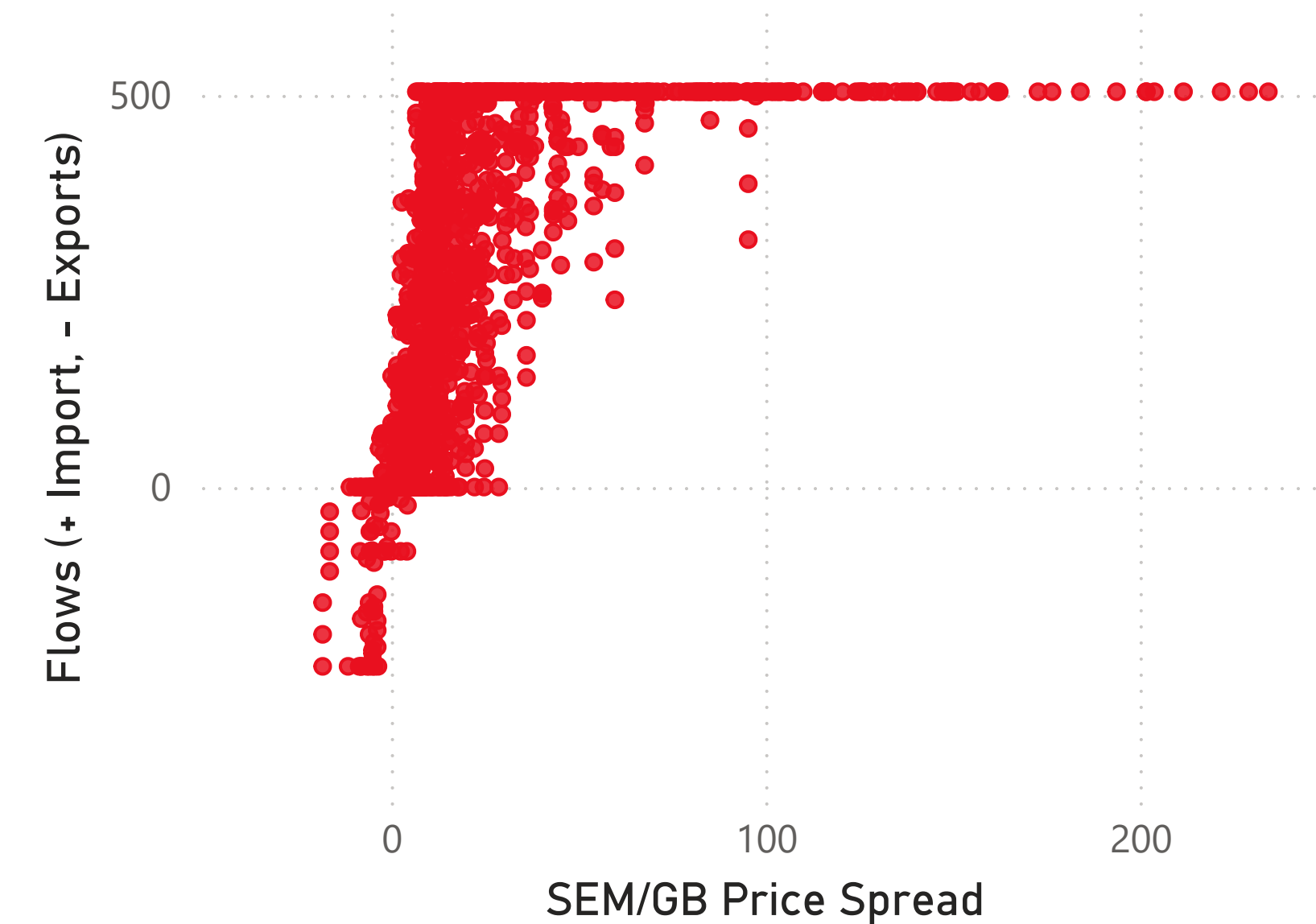
Greenlink Flows vs SEM/GB Price Spread



Moyle Flows vs SEM/GB Price Spread



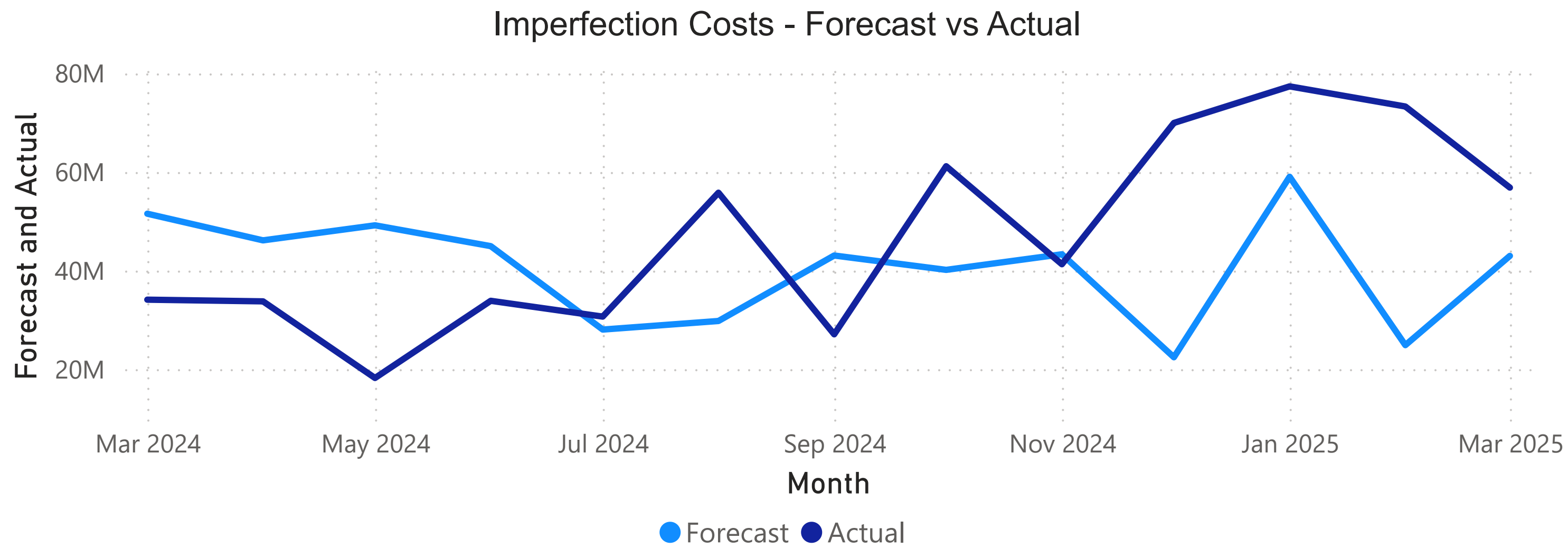
EWIC Flows vs SEM/GB Price Spread



Balancing Market March 2025

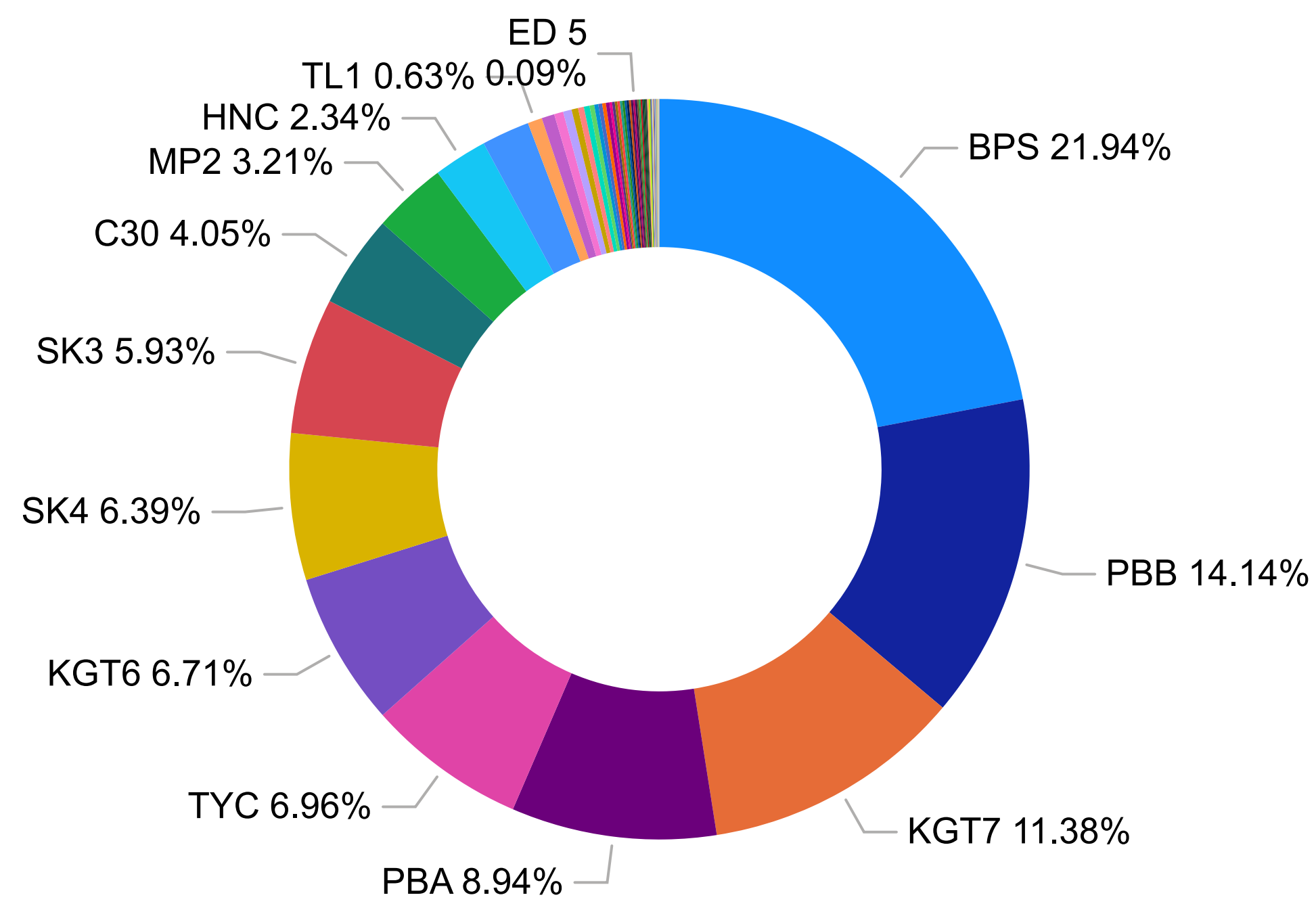
Where power stations are run differently from the market schedule, it is termed “constraint”. Subject to the Trading and Settlement Code and Firm Access, Constraint payments keep generators financially neutral for the difference between the market schedule and what actually happened when generating units were dispatched.

Generators can be constrained ‘on’ or ‘up’ if the market schedule indicated they were to be run at lower levels than actually happened. Or they could be constrained ‘down’ or ‘off’ if they were to be run at a higher level than happened in reality. There is always an overall net cost to the system associated with constraints.



Determinant Name	Value €
CABBPO	82,725.40
CAOOPO	34,875.27
CCURL	-782,971.30
CDISCOUNT	13,838,757.09
CFC	27,772,980.41
CPREMIUM	17,075,613.85
CTEST	-78,891.08
CUNIMB	-1,107,364.83
Total	56,835,724.80

Market Share per Unit (CFC, CPREMIUN, CDISCOUNT)



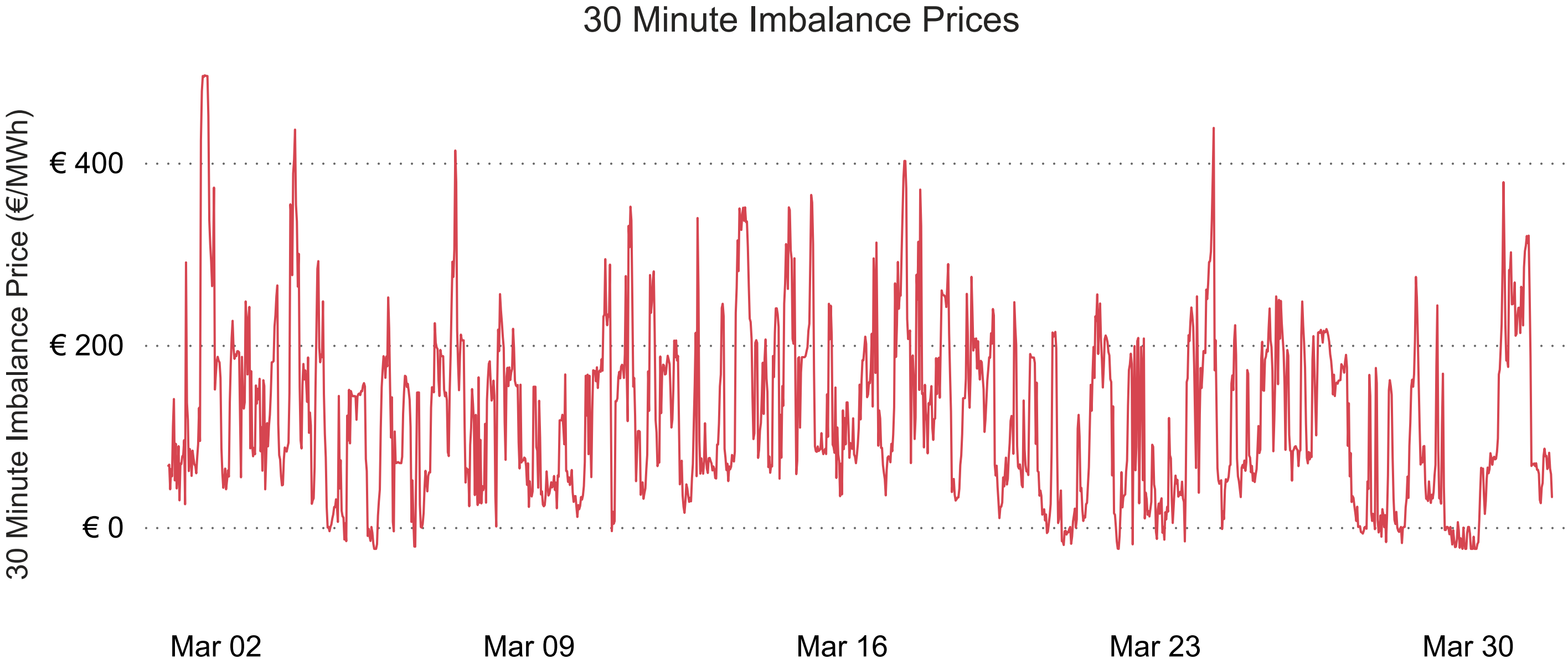
Constraints Payments

This charts illustrates the distribution of selected Constraint Payments, to specific power plants. As it can be seen, this month BPS (EP Ballylumford) was the largest receiver of these payments followed by PBB (Shellybanks).

Balancing Market March 2025

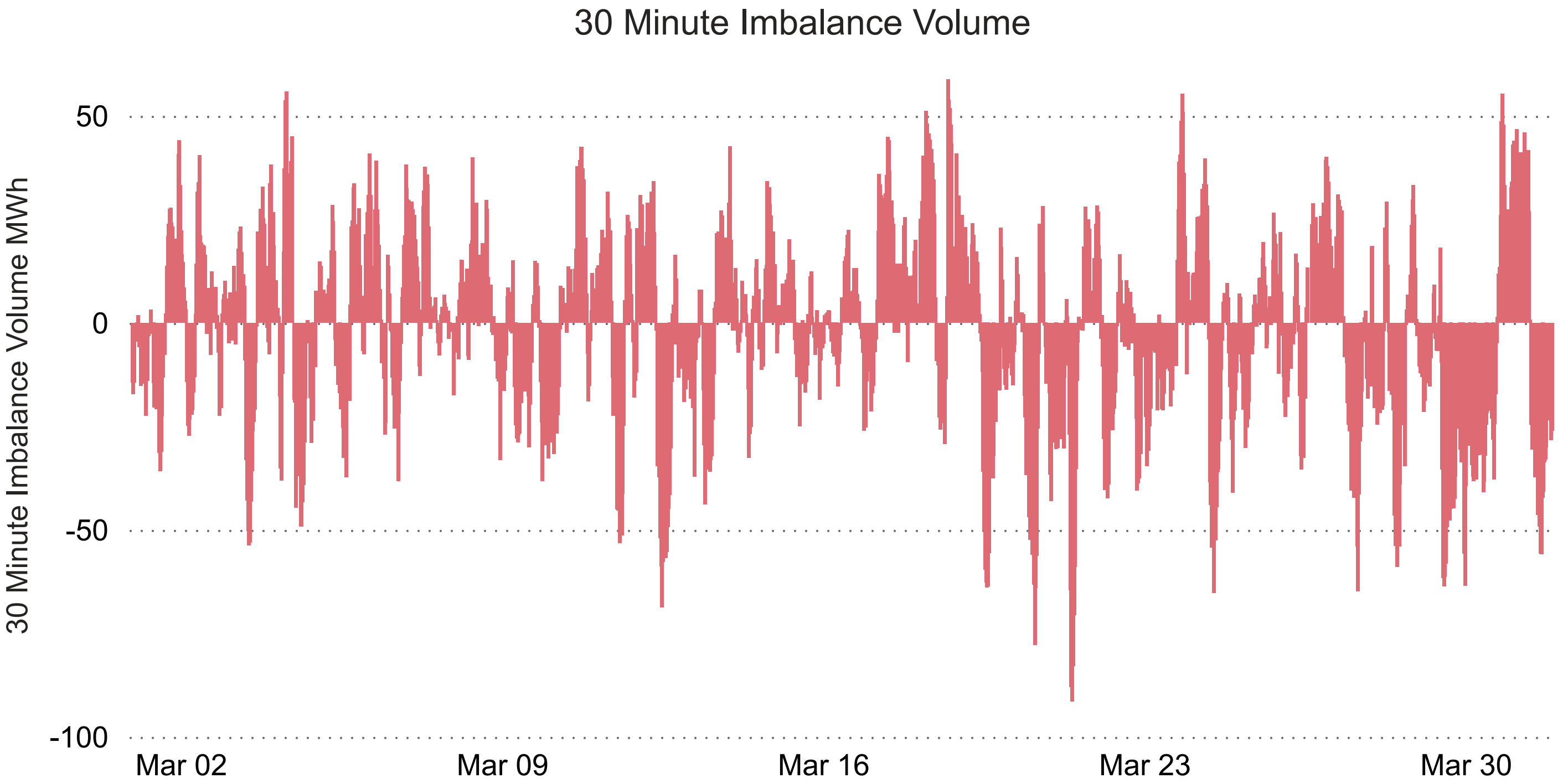
30 Minutes Imbalance Price
€ 122.42
Average Price
-€ 24.06
Lowest Price
€ 495.76
Highest Price

Imbalance Price & Volumes

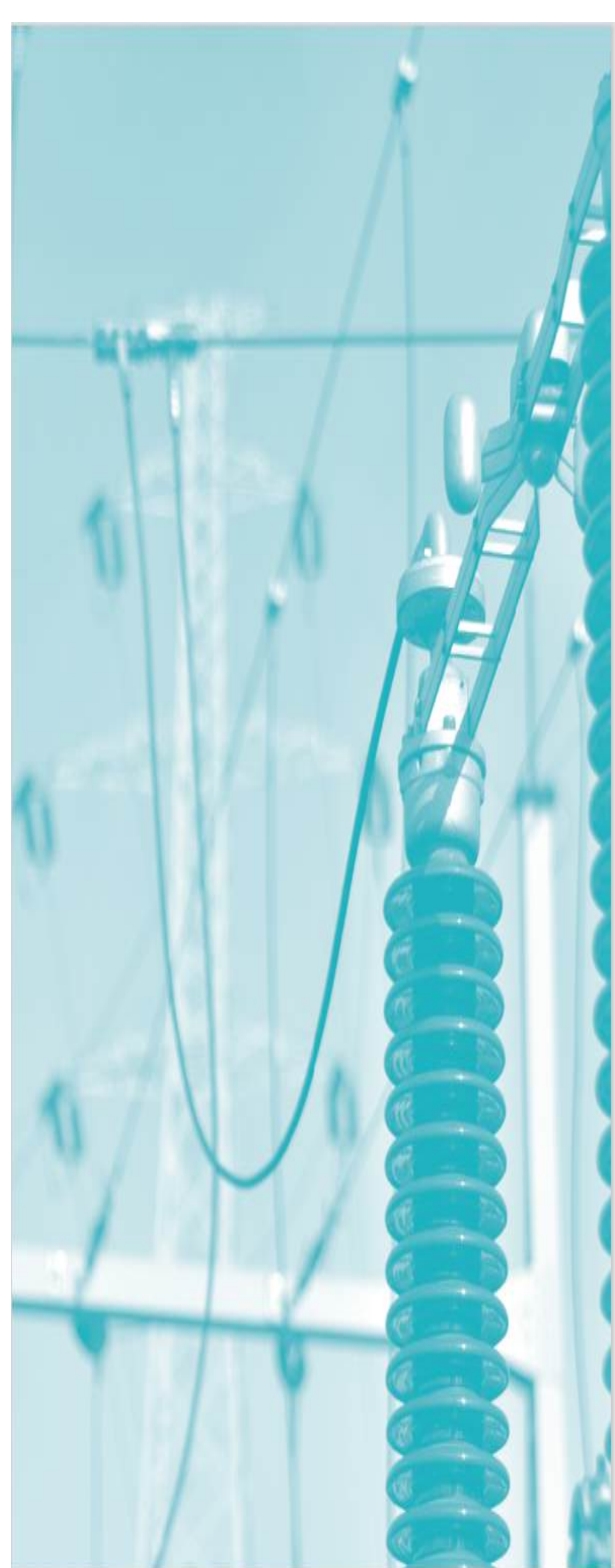


The average Imbalance (BM) Price this month was less than Day Ahead Price. But the Balancing Market prices has exhibited a much higher range of prices indicating a higher level of volatility compared to Day Ahead Market Prices. This is an expected characteristic of the Balancing Market.

There were no Reliability Options events this month as the Balancing Market prices have not breached the PSTR level.



Demand and Generation Mix



Demand March 2025

SEM Demand

4,951.19	4,841.72
SEM Average 2025	SEM Average 2024
3,971.94	3,774.26
SEM Min 2025	SEM Min 2024
5,907.22	5,758.26
SEM Max 2025	SEM Max 2024

NI Demand

851.90	843.67
NI Average 2025	NI Average 2024
583.72	557.90
NI Min 2025	NI Min 2024
1,080.50	1,075.16
NI Max 2025	NI Max 2024

ROI Demand

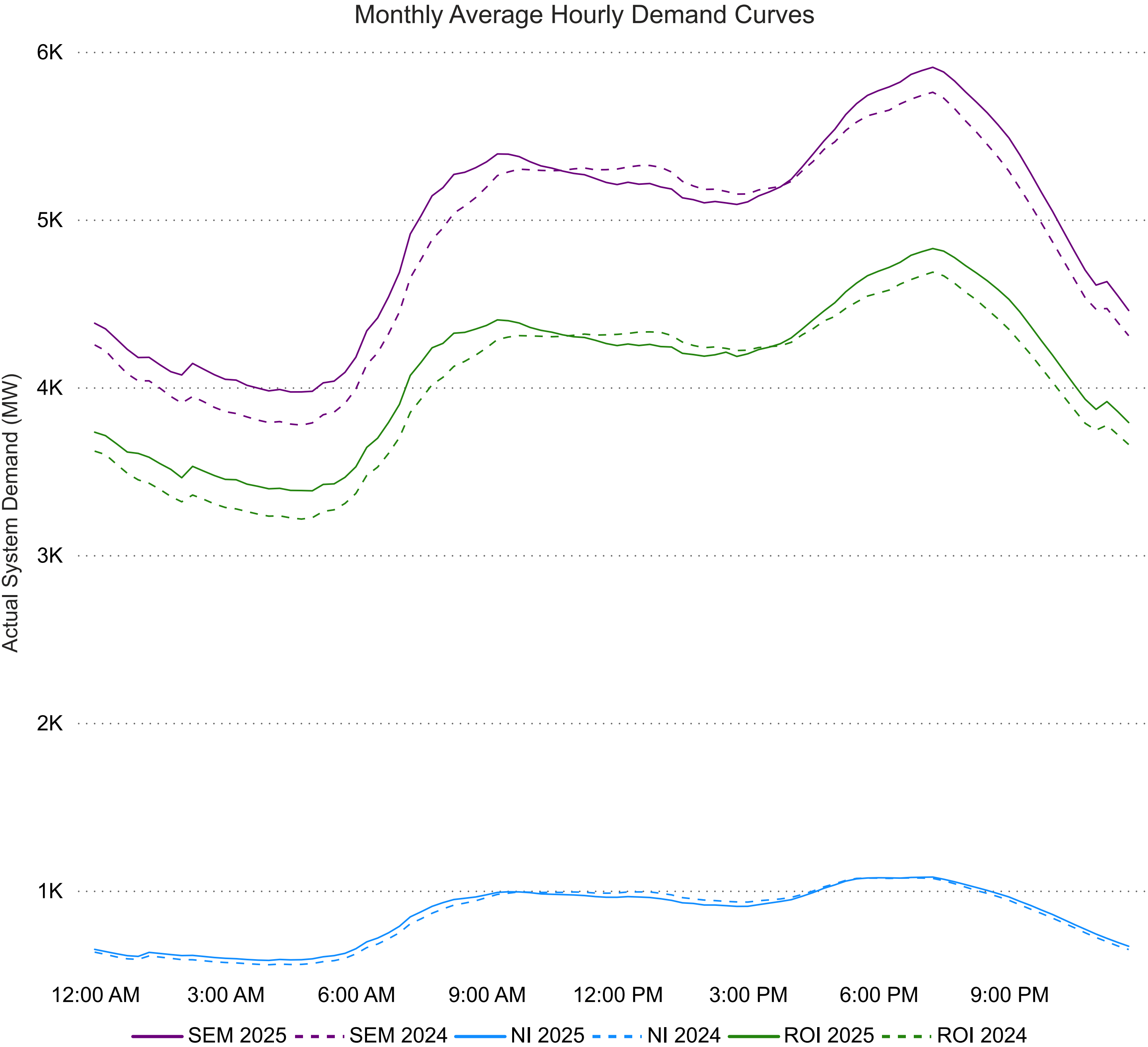
4,101.02	3,998.06
ROI Average 2025	ROI Average 2024
3,382.75	3,214.23
ROI Min 2025	ROI Min 2024
4,826.84	4,686.10
ROI Max 2025	ROI Max 2024

SEM Demand

The graph indicates a notable rise in overall grid demand for the month, reflecting a 2.26% increase compared to the same period last year. This surge can primarily be attributed to the increased demand from newly constructed Data Centres in ROI. But due to solar energy adoption, we observe a mid-day demand drop (commonly known as the demand duck curve effect).

Within NI, the increase is marginal, recorded at just overall 0.11% compared to the same period last year.

For the ROI, demand increased by 2.57% relative to the same period last year.



Duration Curves

March 2025

Price Duration

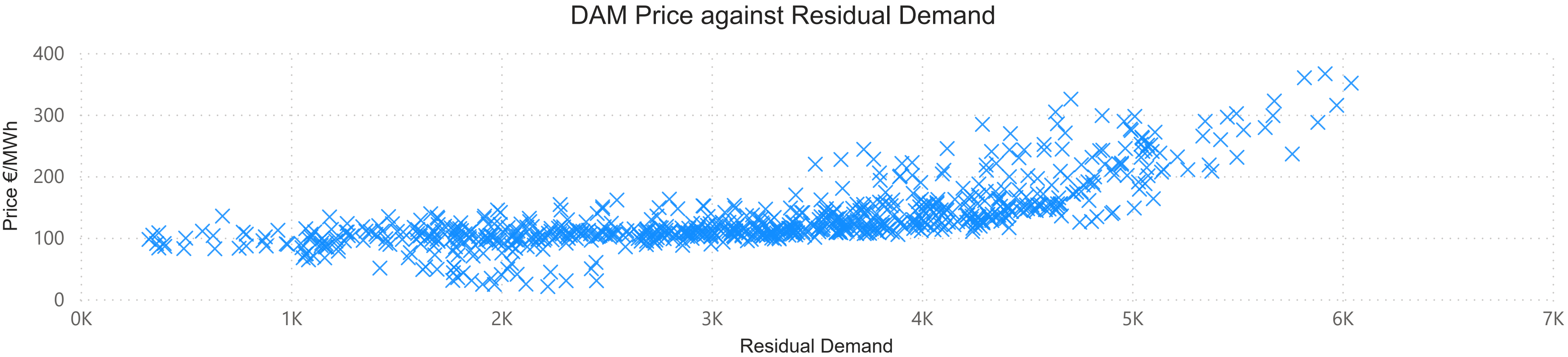
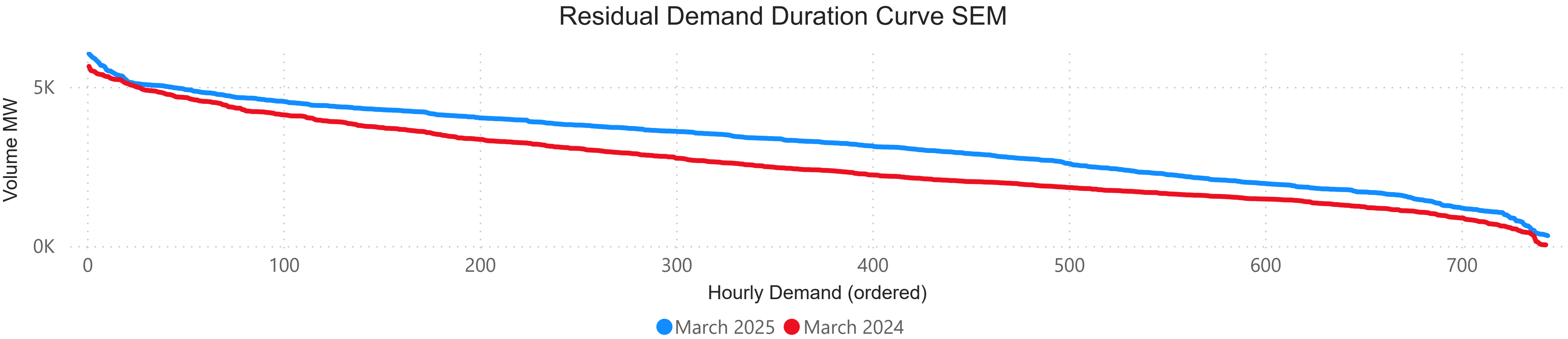
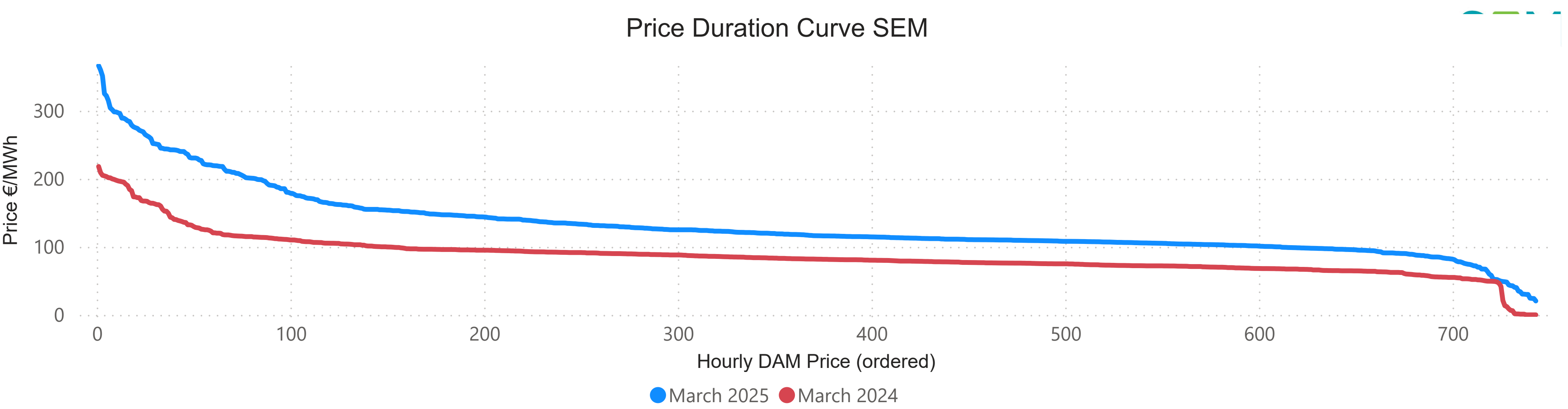
The price duration curve shows the hourly DAM prices across the month ordered from the largest to the smallest.

Residual Duration

The residual demand curve shows the ordered hourly demand level across the month which can't be met by renewable generation.

Price against Residual Demand

Shows the residual demand for each period relative to the DAM price for that period.





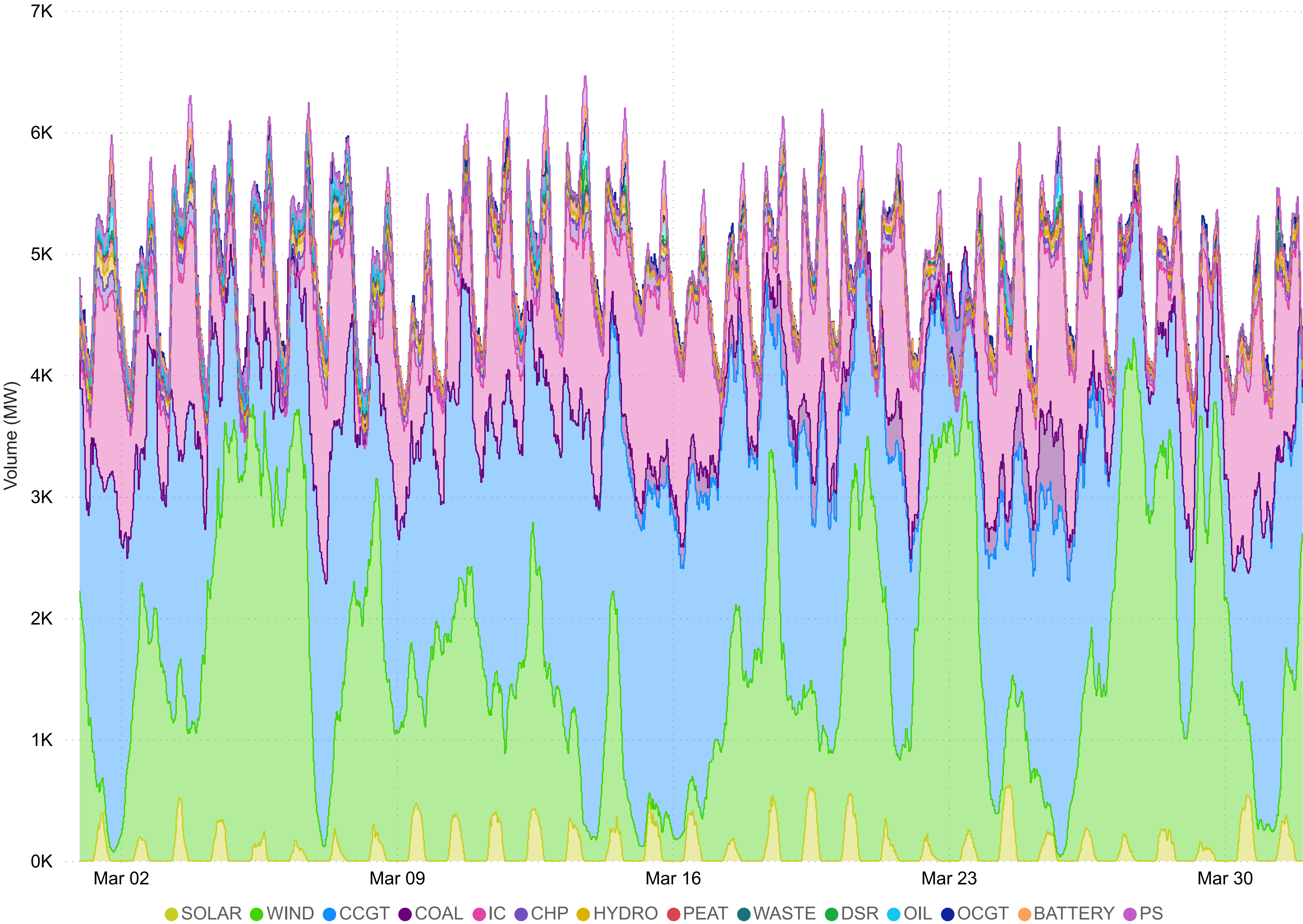
Fuel Mix

March 2025

Fuel Type	Avg Monthly	Per. Monthly
CCGT	1885	38.4%
WIND	1620	33.0%
INTERCONNECTORS	841	17.1%
CHP	130	2.7%
COAL	102	2.1%
SOLAR	96	2.0%
PEAT	76	1.5%
HYDRO	56	1.2%
OCGT	50	1.0%
DSR	32	0.6%
WASTE	29	0.6%
OIL	8	0.2%
BATTERY	-8	-0.2%
PUMPED STORAGE	-13	-0.3%

Fuel Type	Max Monthly	Min Monthly
WIND	4271	33
CCGT	3481	800
INTERCONNECTORS	1494	-1041
COAL	725	0
SOLAR	625	0
PUMPED STORAGE	291	-301
OCGT	284	0
OIL	267	0
BATTERY	244	-145
DSR	202	0
CHP	166	0
HYDRO	150	0
PEAT	119	40
WASTE	56	14

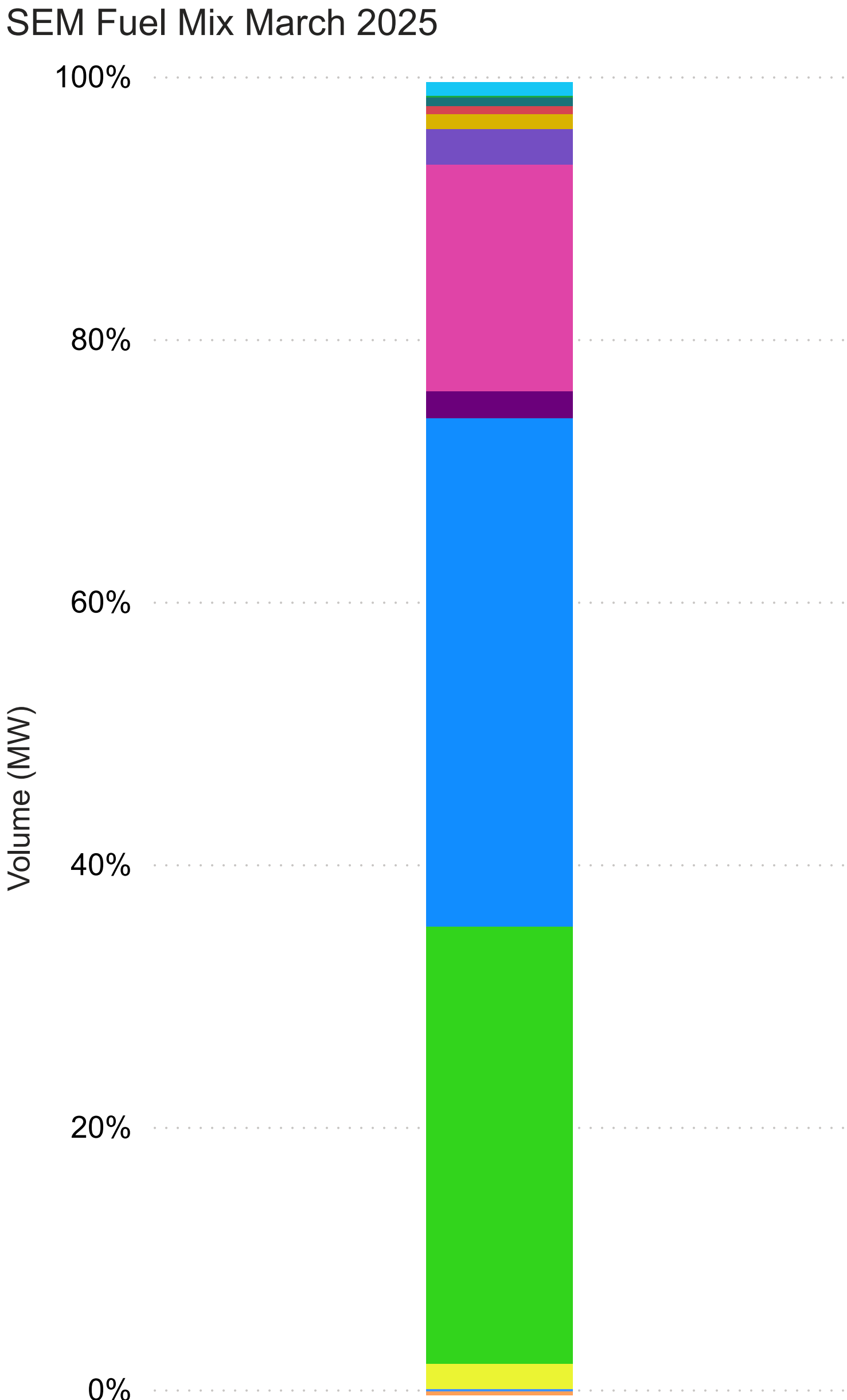
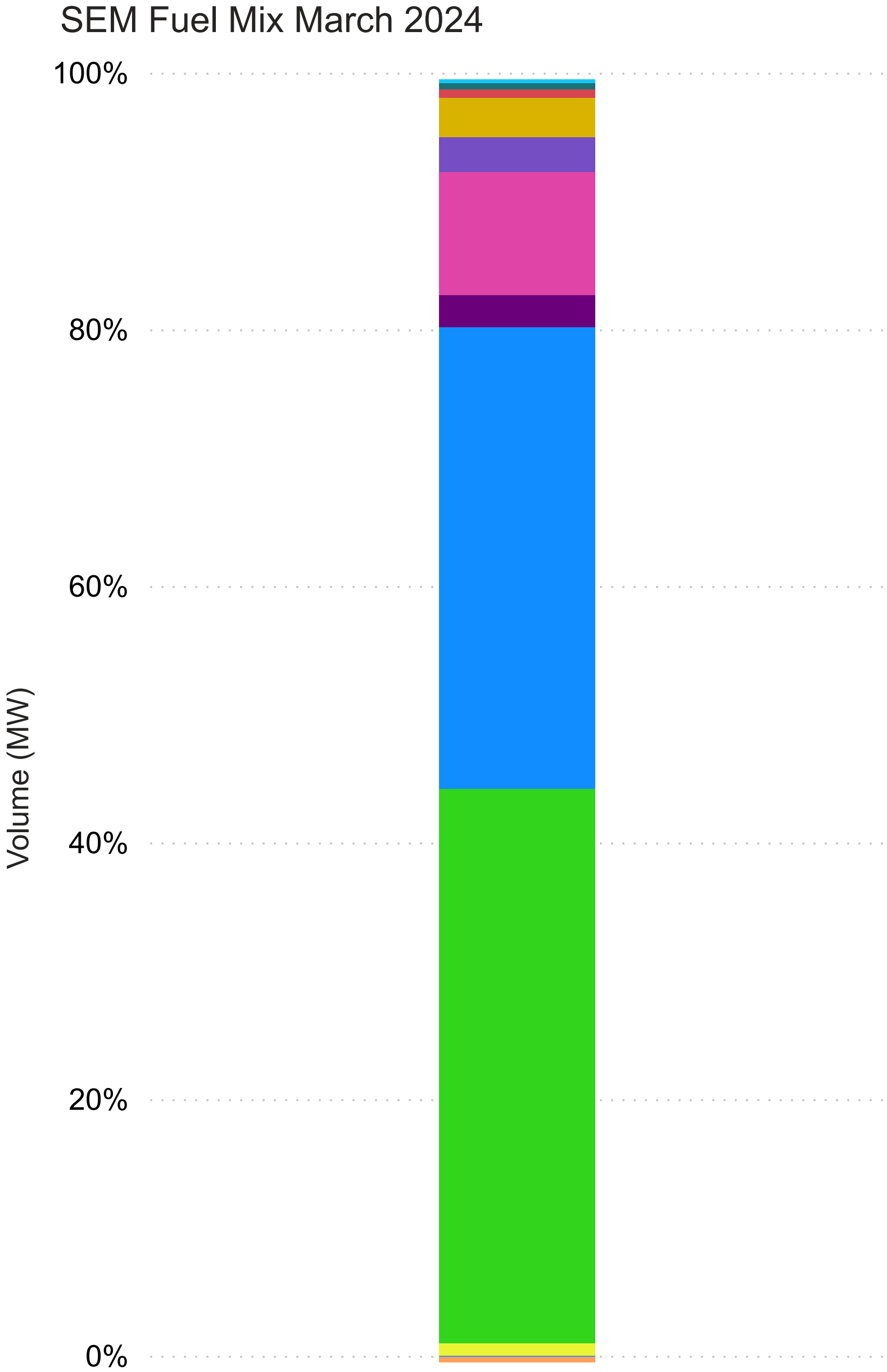
SEM 30 Minute Fuel Mix



Fuel Mix Comparison

March 2024 & 2025

- SOLAR
- WIND
- CCGT
- COAL
- INTERCONNECTORS
- CHP
- HYDRO
- WASTE
- DSR
- OIL
- OCGT
- BATTERY
- PUMPED STORAGE



North-South Tie Line March 2025

Average Flow NI to ROI (MW)

-211.75

Average Flow ROI to NI (MW)

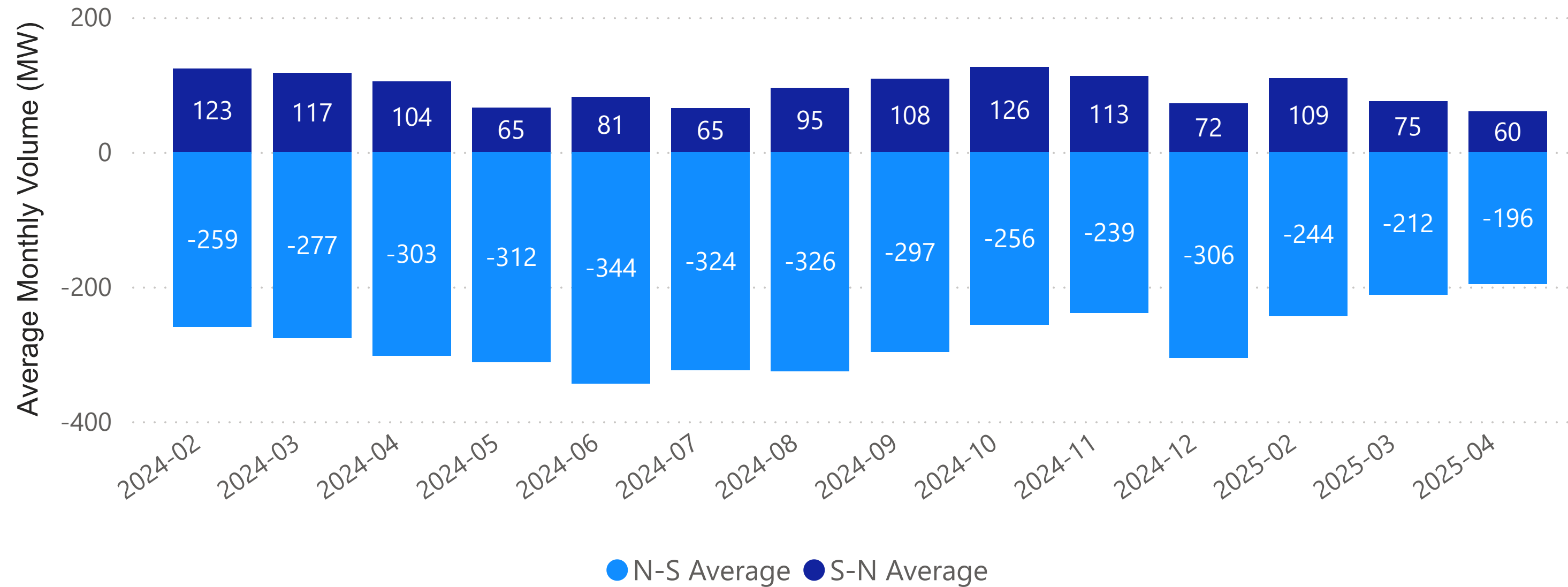
74.84

Average Net Flow NI to ROI (MW)

-177.18

-ve flow NI to ROI
+ve flow ROI to NI

Average Flows N-S Tie Line Long Term Trend



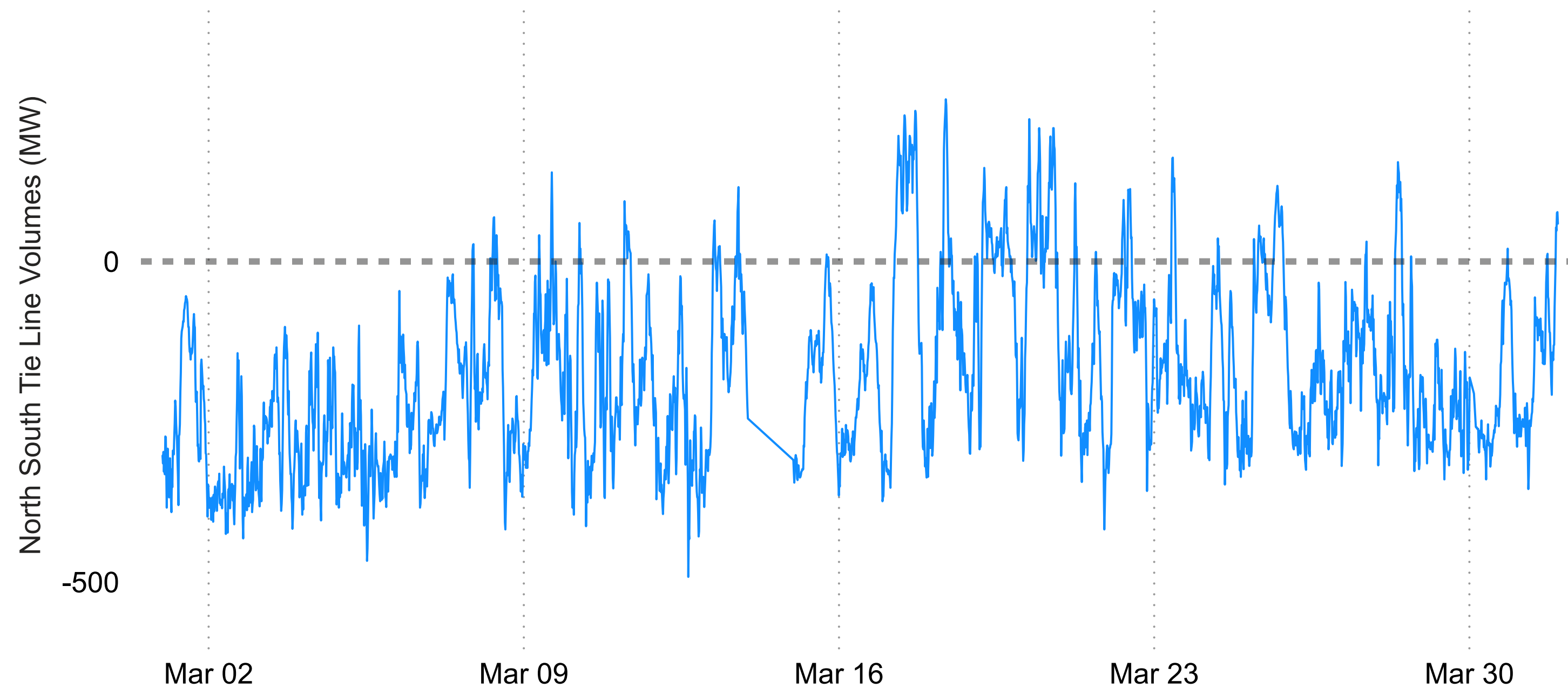
North South Tie Line

Flows across the N-S Tie Line were predominantly in the North to South direction this month. This has been the long term trend. There are persistence reasons for this trend as below:

- When the wind penetration is high in NI, a surplus of power can be formed as the TSO must run a minimal number of thermal units in NI to deal with operational constraints in the system. Exporting power southwards is a mechanism to avoid wind curtailment.

- The demand in ROI has been growing at a faster pace than in NI.

North South Tie Line Volumes 15 minute periods



Wind Generation March 2025

Average Daily Actual Wind (MW)
1,615

Average Daily Forecast Wind (MW)
1,697

Min SNSP%
22.32

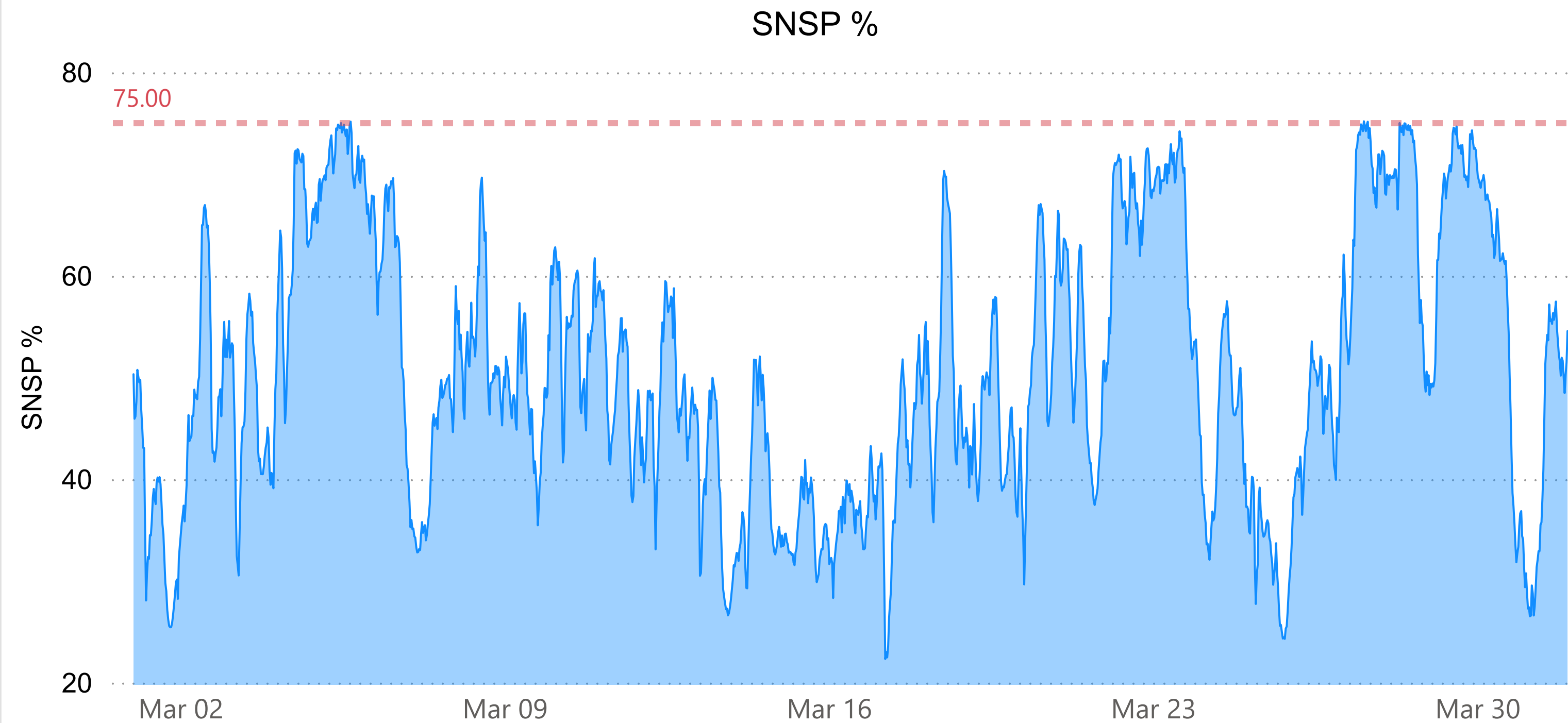
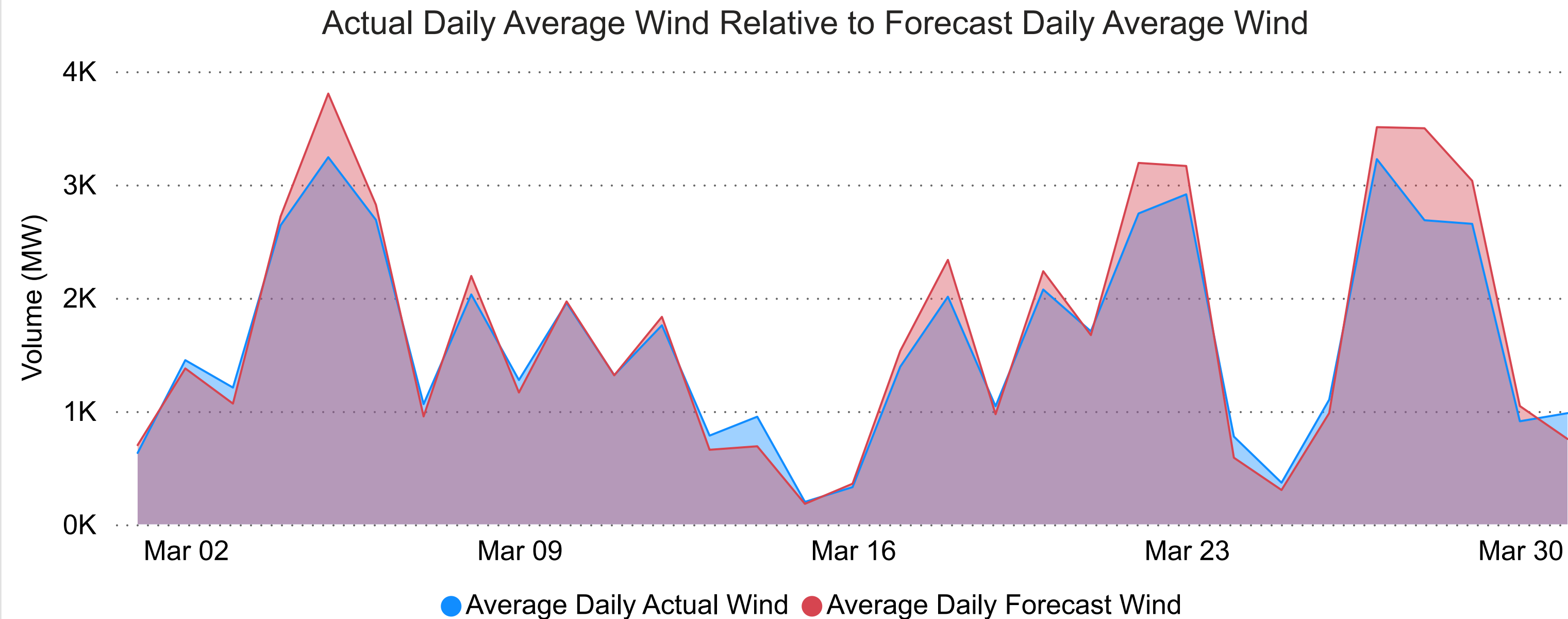
Max SNSP%
75.19

Wind Generation

Wind generation decreased by 36% from last month's peak levels and by 22% compared to the same period last year.

SNSP

SNSP is closely linked to wind generation and as such follows the same trend across the month.



CO₂ March 2025

CO₂ Intensity (gCO₂/kWh)

208.58
Average

92
Lowest

370
Highest

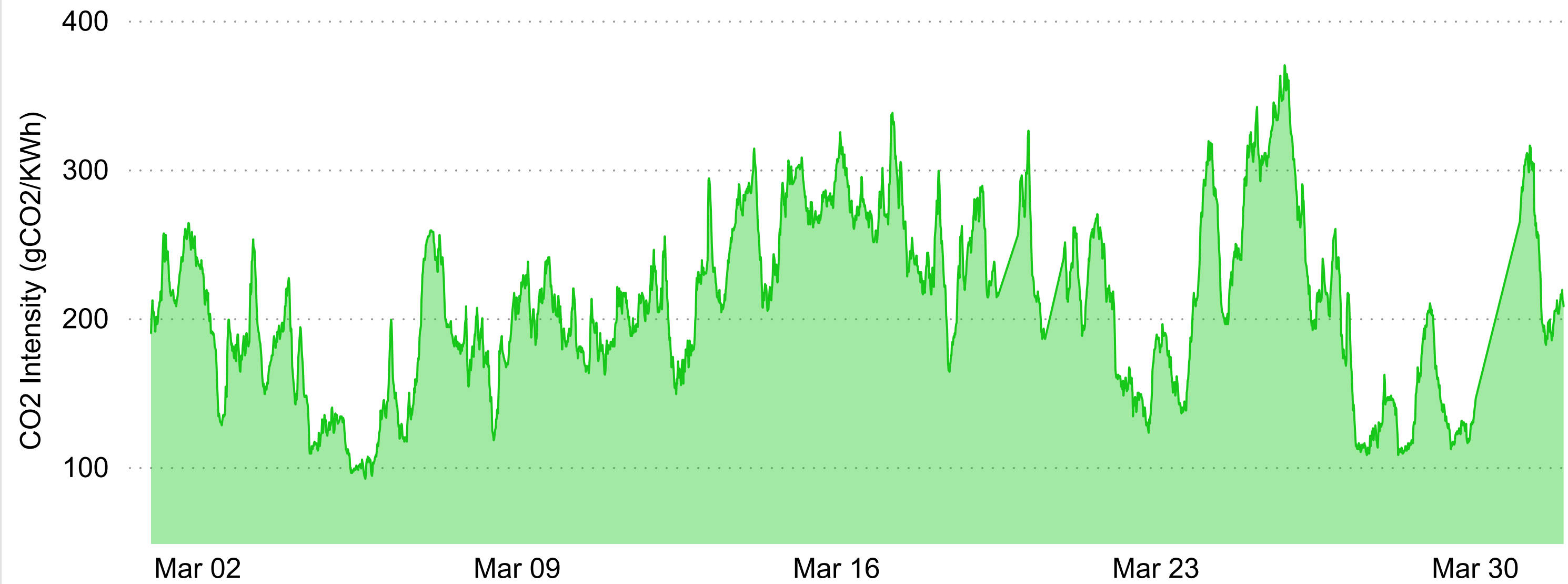
CO₂ Emissions (tCO₂/hr)

906
Average

450
Lowest

1941
Highest

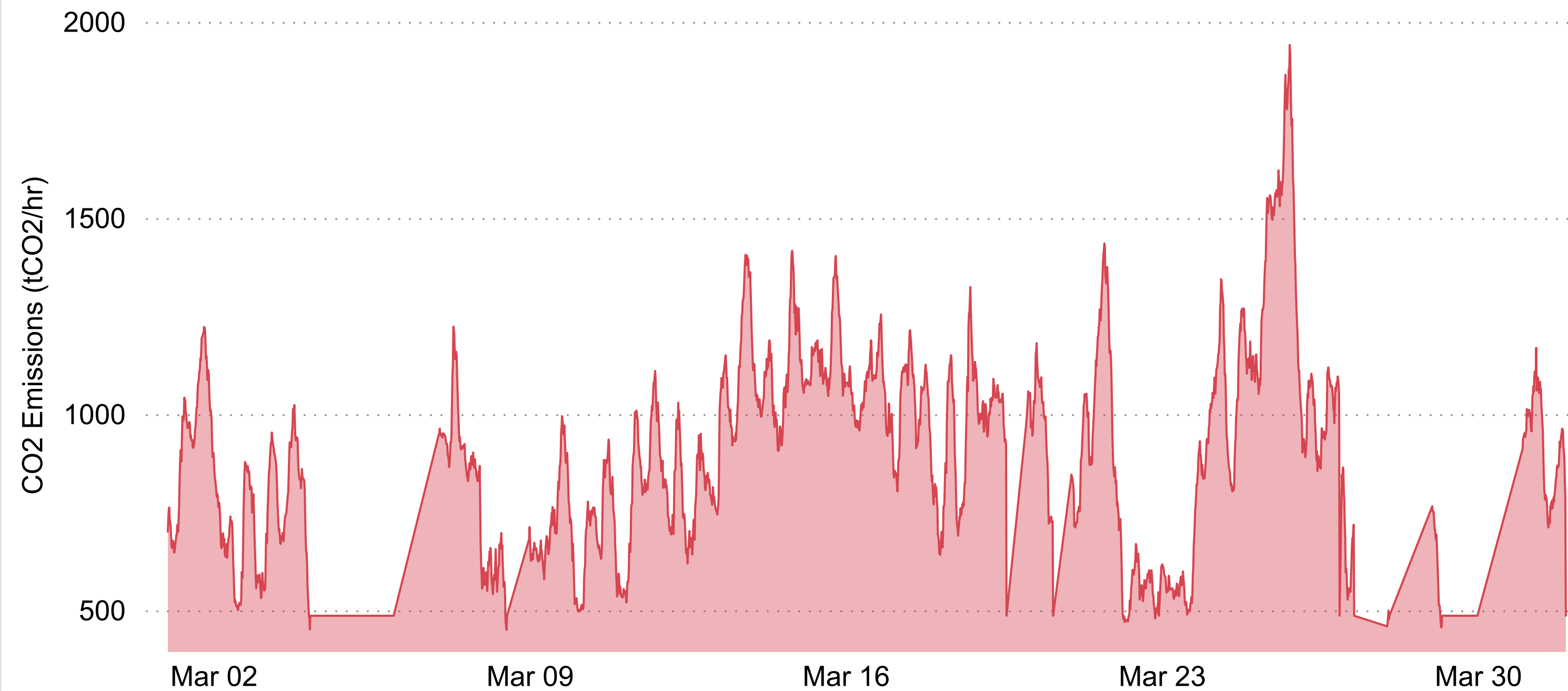
CO₂ Intensity



CO₂ Intensity

CO₂ Intensity i.e. how many grams of carbon are emitted for every unit of electricity used, should be negatively correlated with the volume of wind output on the system.

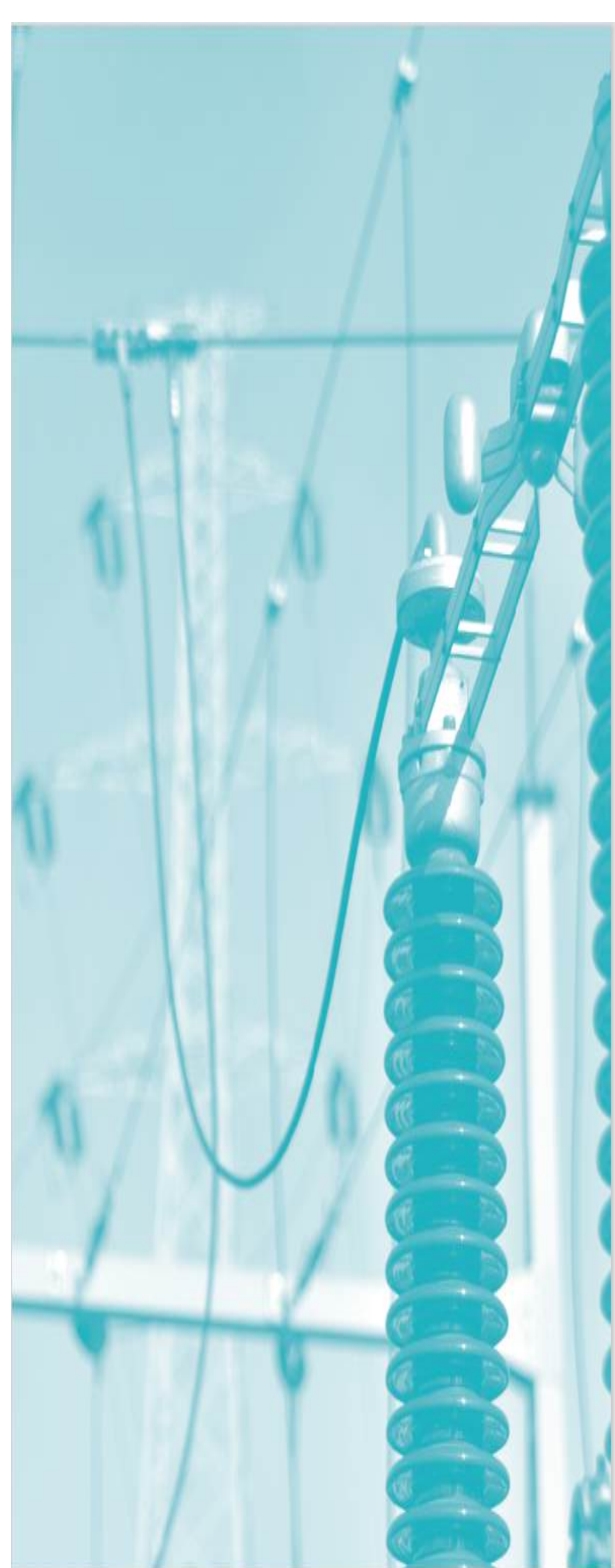
CO₂ Emissions



CO₂ Emissions

CO₂ emissions i.e. the estimated total CO₂ emissions from all large power stations, follows the same trends as CO₂ intensity levels over the course of the month.

Fuel Costs and Spreads



Gas Price March 2025

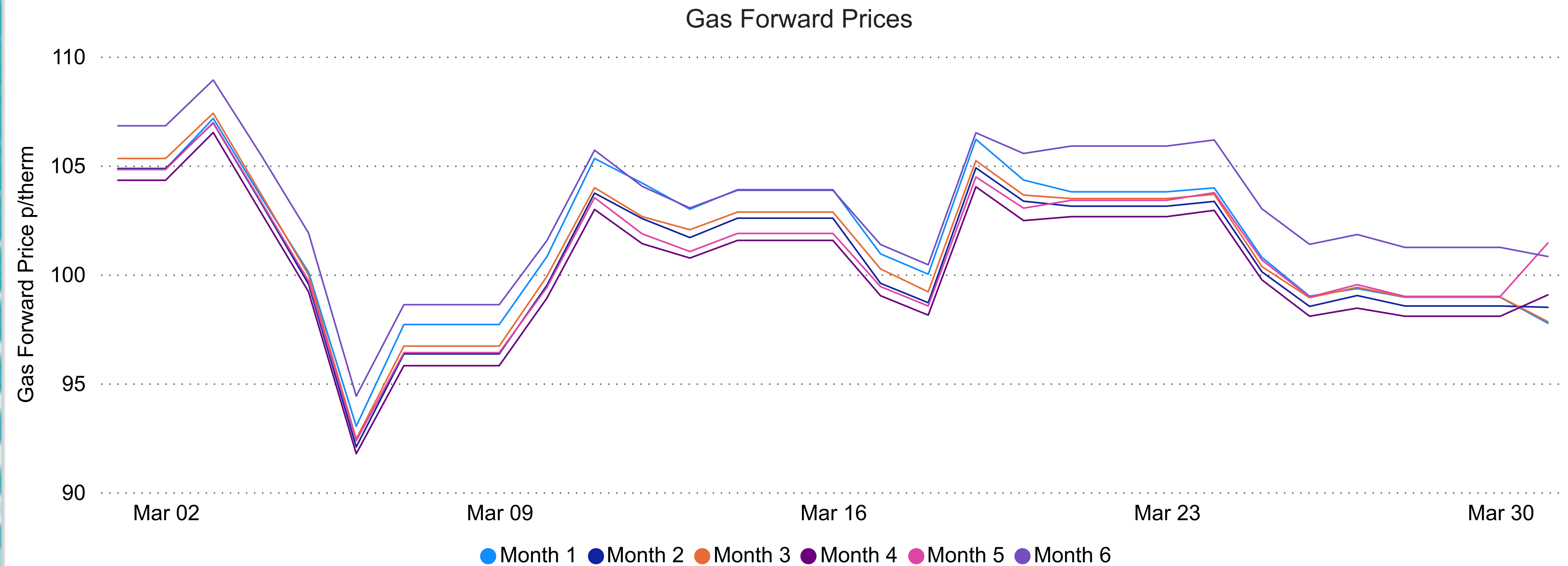
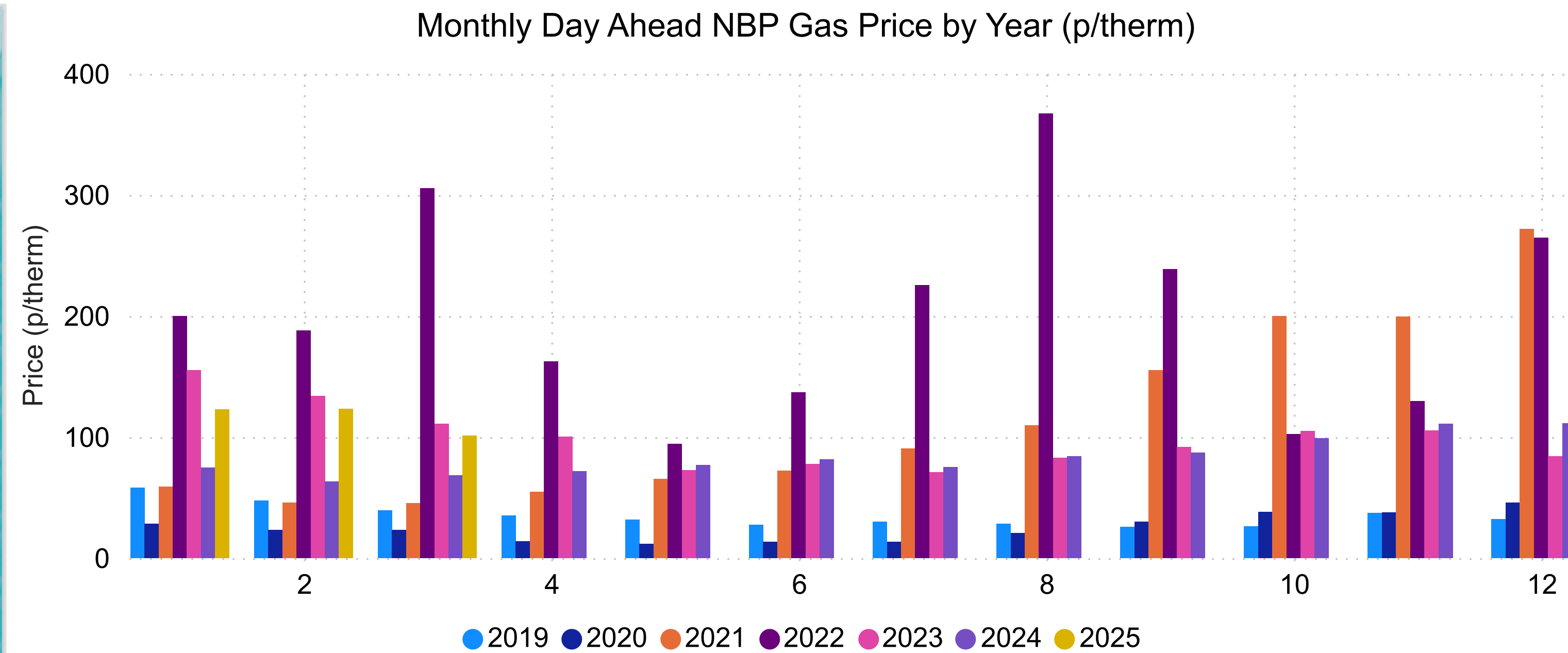
100.94
Monthly Average (p/therm)
93.00
Monthly Low (p/therm)
108.28
Monthly High (p/therm)

Gas Prices

There was an 18% decrease on average in Gas Prices this month compared to the last month.

Gas Forward Prices

Increased temperatures helped keep gas prices down, and should continue to put downward pressure on the futures market.



Coal Price March 2025

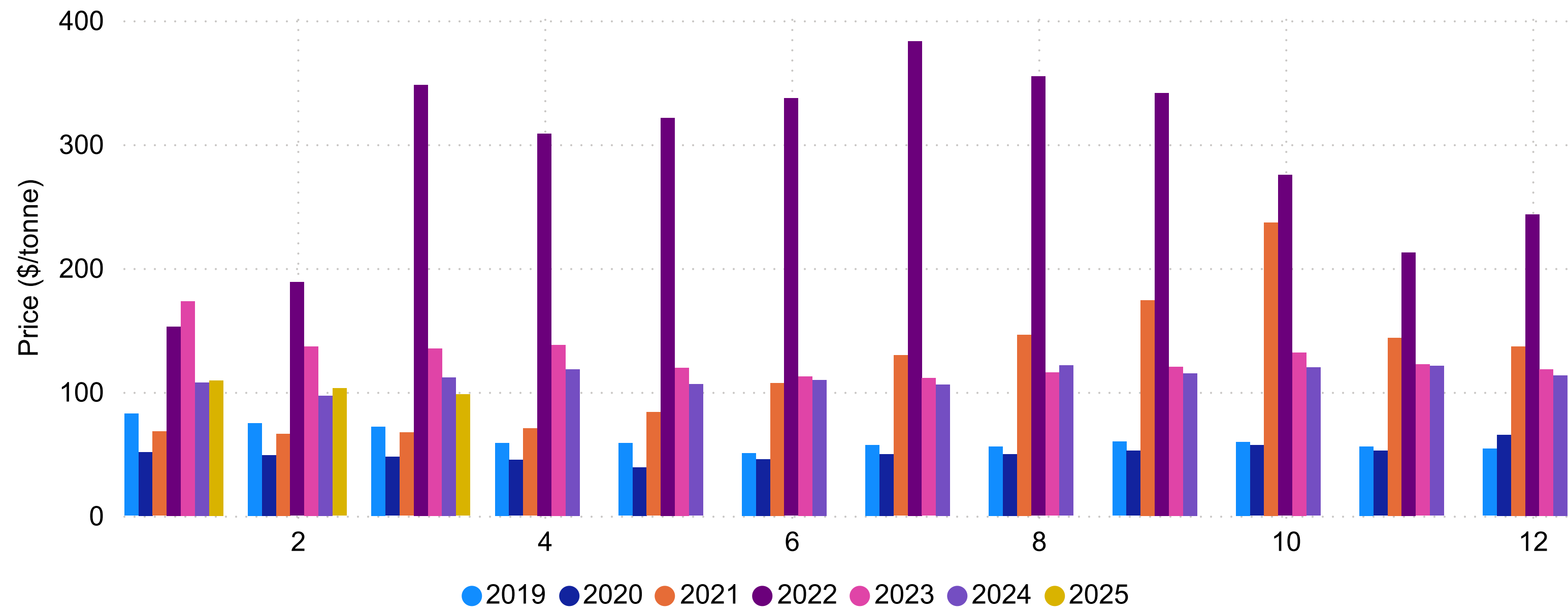
Coal Prices Per Tonne

\$97.91
Monthly Average
\$96.10
Monthly Low
\$104.20
Monthly High

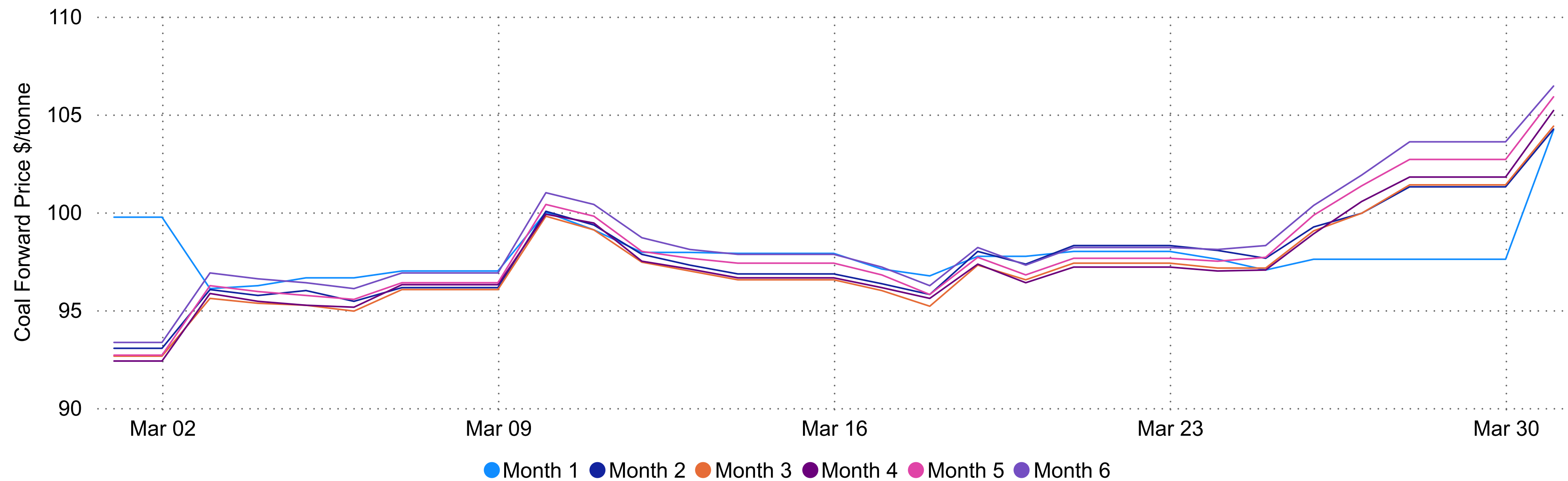
Coal Prices

Coal prices fell below \$100/tonne for the first time in a year, averaging \$97.91/tonne, reflecting a 5% decrease from the previous month.

Monthly ICE Rotterdam Coal Price by Year (\$/tonne)



Coal Forward Prices



Carbon Price March 2025

EU Carbon Prices (€/tonne)

€ 68.39
Monthly Average

€ 65.35
Monthly Low

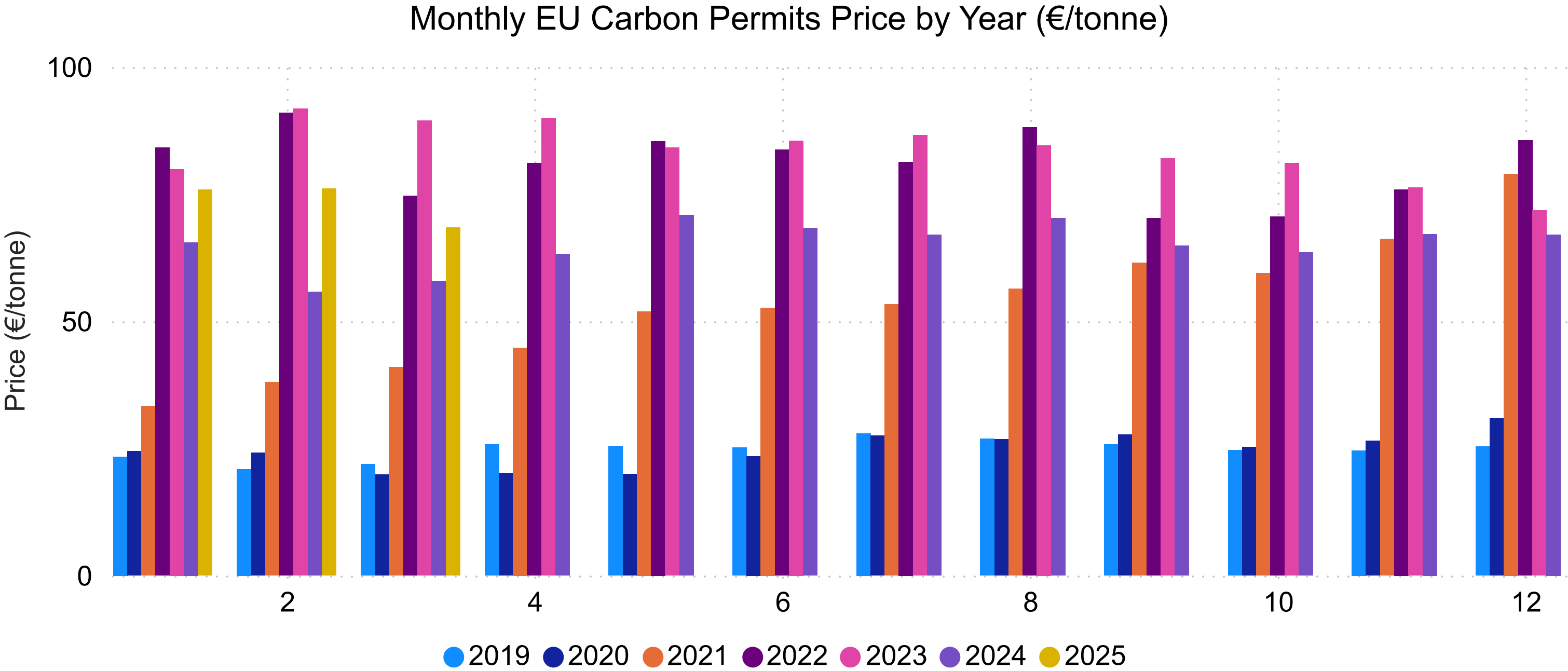
€ 72.60
Monthly High

UK Carbon Prices (€/tonne)

€ 50.04
Monthly Average

€ 44.26
Monthly Low

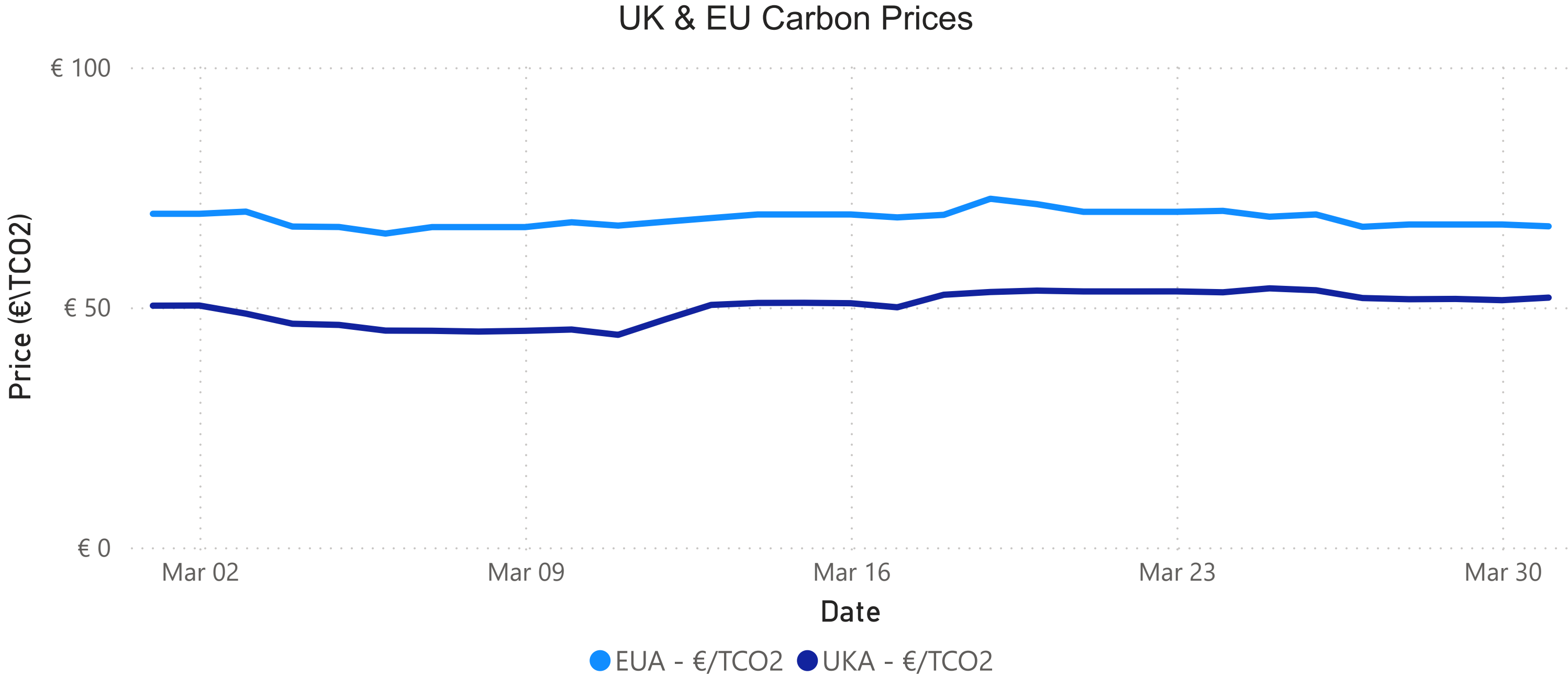
€ 53.94
Monthly High



Carbon Prices

Carbon prices averaged €68.39/tonne, with a 10% drop from the last month average.

Looking ahead, while supply is expected to remain strong, the demand side is projected to grow steadily due to the reduction in free allocations and the expansion of industry coverage. Overall, EUA prices are expected to experience a moderate recovery.



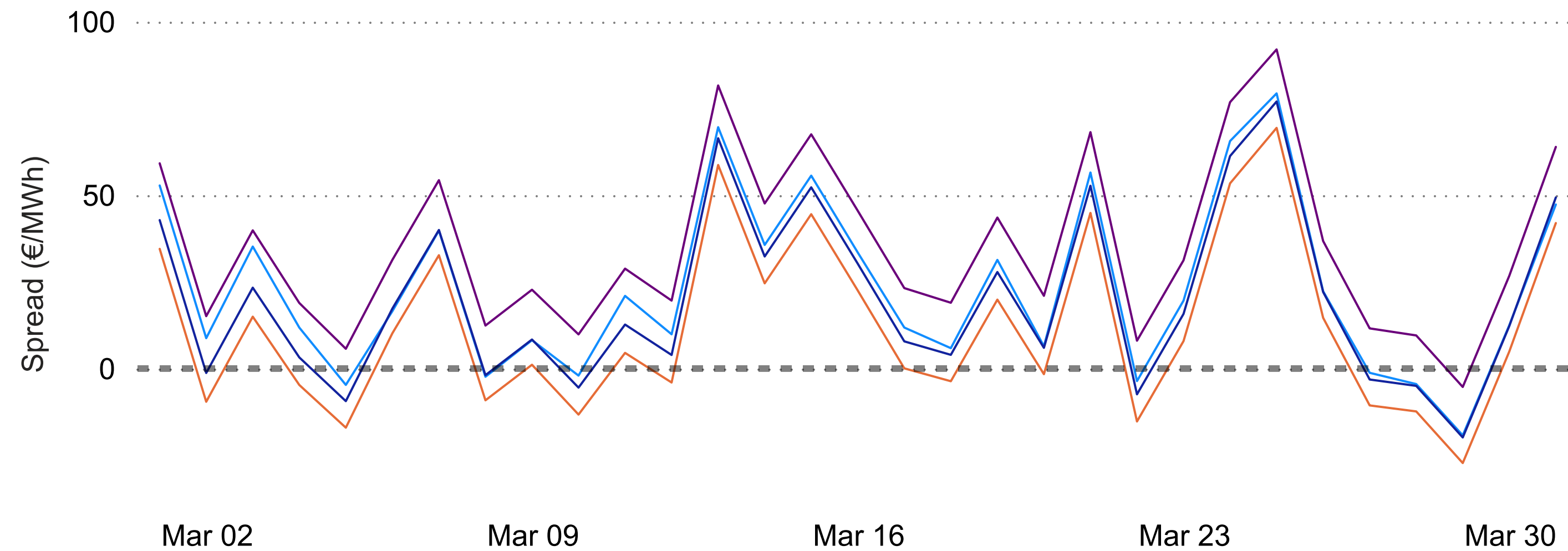
Spark Spreads

March 2025

Clean Dark Spread measure the profitability of coal fired power generation based on the variable cost of inputs (coal and carbon credits) and the value of the output (electricity).

Clean Spark Spread is the difference between the price received by a generator for electricity produced and the cost of the natural gas + Carbon needed to produce that electricity.

Clean Dark Spread v Clean Spark Spread



Clean Dark Spread vs Clean Spark Spread

Spreads were generally consistent across the month.

Clean Dark Spread v Clean Spark Spread (October 2018 Onwards)

