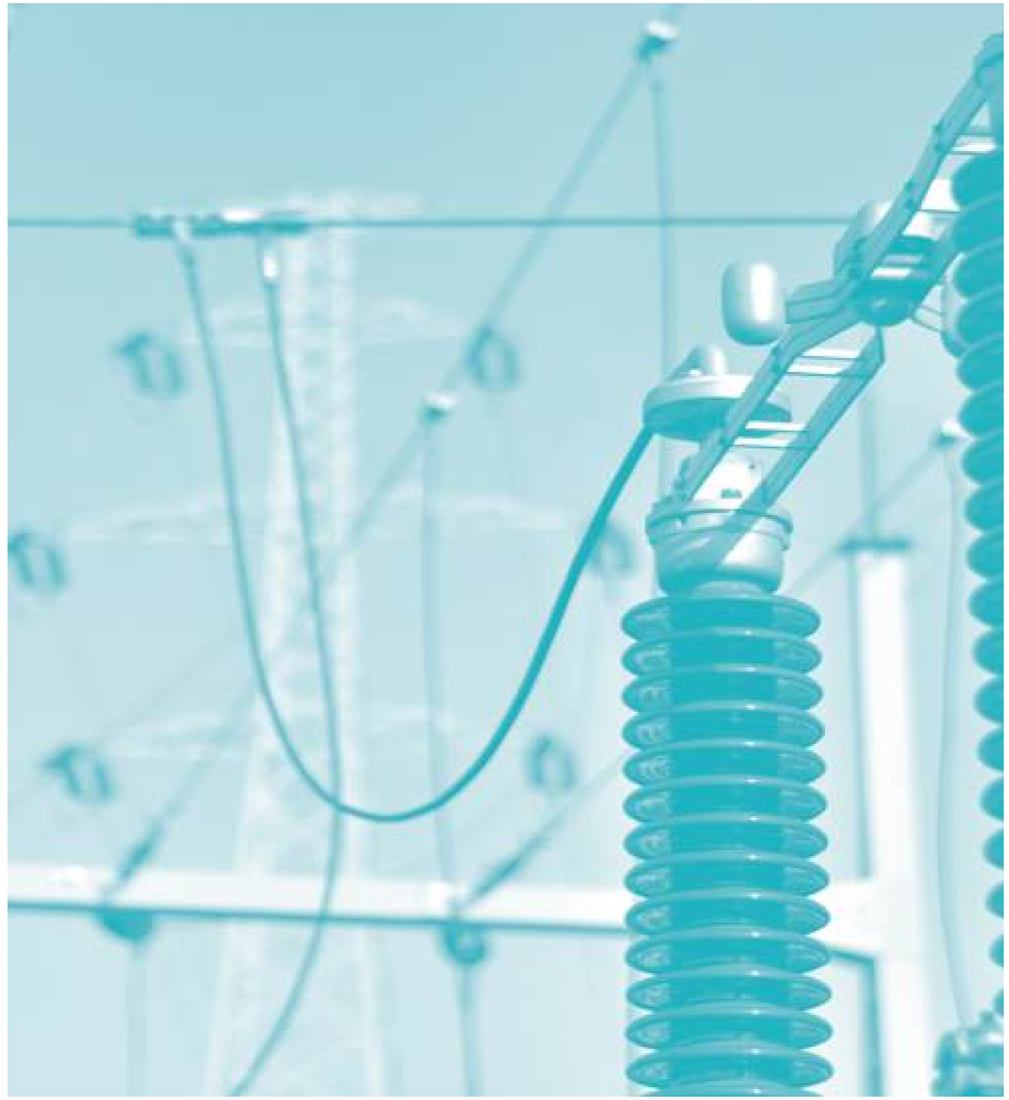
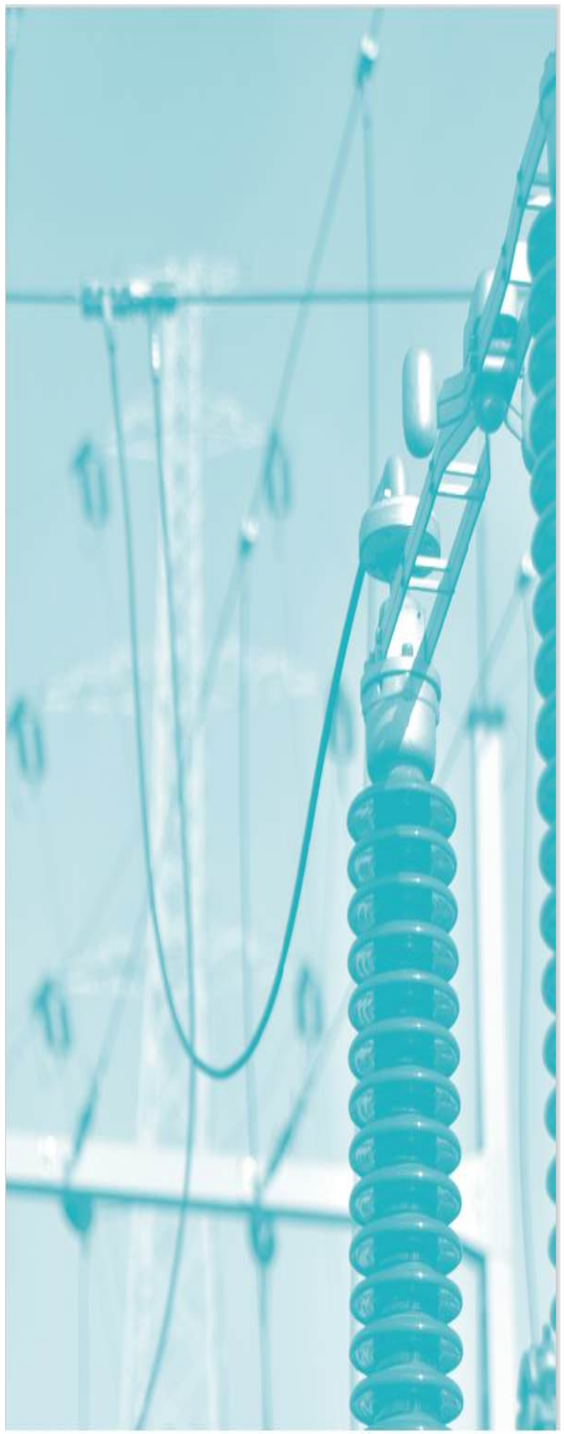


Energy Market Monitoring Report

May 2025

SEM committee



Market Results

Summary Dashboard

SEM committee

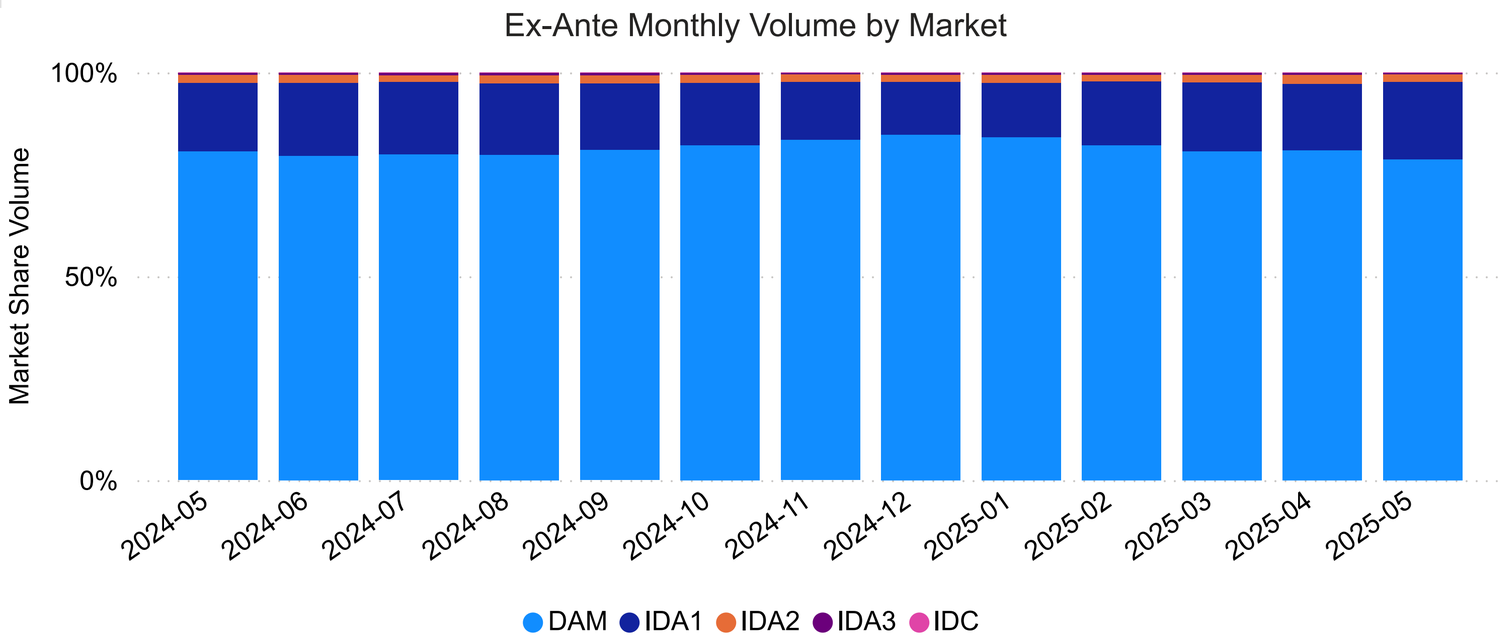
Monthly Averages	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25
DAM (€/MWh)	86.67	88.52	107.75	107.74	110.94	100.44	112.73	122.9	146.14	136.99	167.51	140.85	131.8	111.11	108.54
% Change from previous month	2%	2%	22%	0%	3%	-9%	12%	9%	19%	-6%	22%	-16%	-6%	-16%	-2%
% Change from previous year	-40%	-30%	2%	-8%	15%	-6%	1%	-2%	19%	54%	68%	66%	52%	26%	1%
Actual System Demand (MW)	4833	4610	4356	4193	4279	4255	4467.76	4671	5085	5020	5256	5194	4951	4594	4336
% Change from previous month	-2%	-5%	-6%	-4%	2%	-1%	5%	5%	9%	-1%	5%	-1%	-5%	-7%	-6%
% Change from previous year	0%	3%	2%	0%	4%	2%	3%	3%	4%	3%	2%	5%	2%	0%	0%
Actual Wind Generation (MW)	2072	1496	894	1072	883	1437	1263	1668	1448	2040	1948	2509	1615	1278	933
% Change from previous month	4%	-28%	-40%	20%	-18%	63%	-12%	32%	-13%	41%	-5%	29%	-36%	-21%	-27%
% Change from previous year	19%	-3%	1%	22%	-33%	3%	-9%	22%	-20%	-17%	5%	25%	-22%	-15%	4%
Gas Price p/therm	68.18	71.69	76.69	81.51	75.07	84.71	86.94	99.04	111	111.22	122.85	123.04	100.94	84.72	81.82
% Change from previous month	8%	5%	7%	6%	-8%	13%	3%	14%	12%	0%	10%	0%	-18%	-16%	-3%
% Change from previous year	-39%	-29%	6%	5%	6%	2%	-5%	-6%	6%	32%	64%	94%	48%	18%	7%
Carbon Price (€/Tonne)	57.94	63.25	70.90	68.29	67.00	70.12	64.86	63.51	67.15	67.05	75.87	76.08	68.39	63.96	71.00
% Change from previous month	4%	9%	12%	-4%	-2%	5%	-8%	-2%	6%	0%	13%	0%	-10%	-6%	11%
% Change from previous year	-35%	-30%	-16%	-20%	-23%	-17%	-21%	-22%	-12%	-7%	16%	36%	18%	1%	0%
Coal Price ($/tonne)	111.78	118.13	106.15	109.54	105.93	121.36	114.96	119.65	120.84	113.32	109.23	102.88	97.91	101.46	95.80
% Change from previous month	15%	6%	-10%	3%	-3%	15%	-5%	4%	1%	-6%	-4%	-6%	-5%	4%	-6%
% Change from previous year	-17%	-14%	-11%	-3%	-5%	5%	-5%	-9%	-1%	-4%	1%	6%	-12%	-14%	-10%
EWIC % Import Periods	63.78%	81.94%	84.98%	85.90%	94.59%	85.29%	81.53%	71.32%	78.30%	67.64%	67.88%	43.01%	55.18%	27.15%	50.30%
EWIC % Export Periods	11.32%	4.86%	0.67%	3.72%	1.11%	7.56%	5.52%	10.31%	9.03%	11.49%	10.18%	13.91%	2.66%	1.81%	0.77%
EWIC % Not Flow Periods	24.90%	13.19%	14.35%	10.38%	4.30%	7.15%	12.95%	18.37%	12.67%	20.87%	21.94%	43.08%	42.16%	71.04%	48.92%
Moyle % Import Periods	79.00%	87.40%	94.96%	92.47%	96.77%	80.71%	91.98%	81.08%	82.47%	81.55%	78.53%	64.62%	79.24%	78.16%	93.88%
Moyle % Export Periods	20.83%	12.50%	5.27%	7.53%	3.23%	10.44%	7.60%	18.65%	17.50%	18.41%	21.27%	22.43%	6.16%	6.08%	6.08%
Moyle % Not Flow Periods	0.17%	0.10%	0.03%	0.00%	0.00%	8.84%	0.42%	0.28%	0.03%	0.03%	0.20%	12.95%	14.60%	15.76%	0.03%
Greenlink % Import Periods	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68.97%	88.63%	80.17%	93.78%
Greenlink % Export Periods	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.04%	9.49%	10.35%	5.58%
Greenlink % Not Flow Periods	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.99%	1.88%	9.48%	0.64%

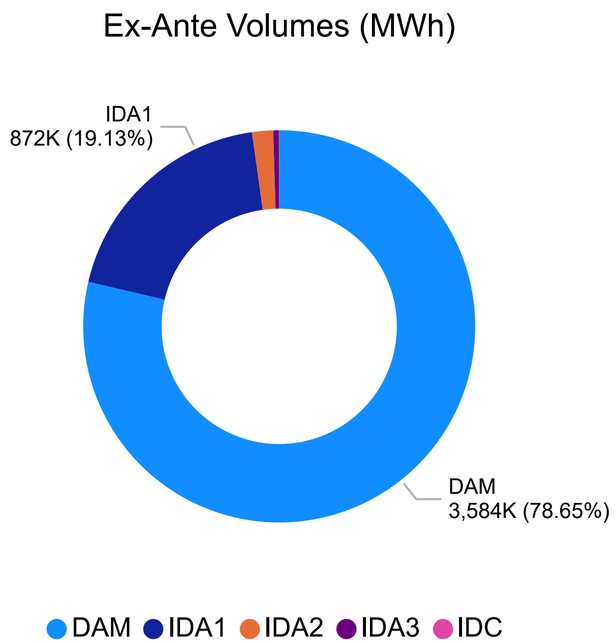
Market Volumes
May 2025

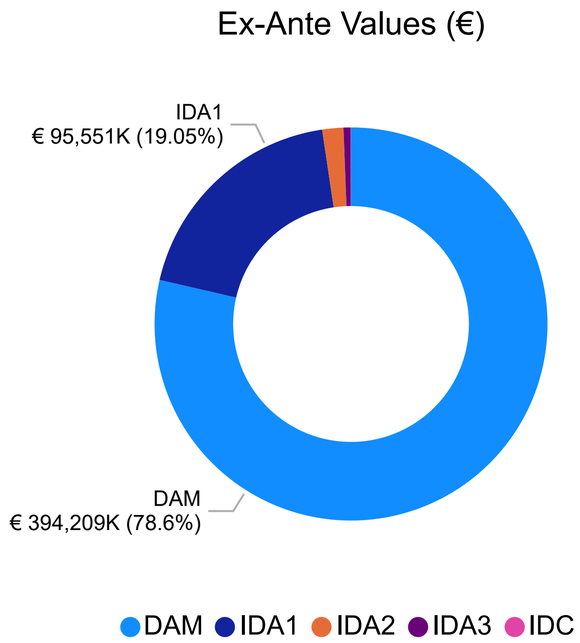
Daily Average Volume	MWh
DAM	115,617
IDA1	28,119
IDA2	2,555
IDA3	685
IDC	42

Total Monthly Volume	MWh
DAM	3,584,131
IDA1	871,698
IDA2	79,206
IDA3	21,250
IDC	997
Total	**4,557,282**

Total Market Value	€
DAM	€ 394,208,908
IDA1	€ 95,550,773
IDA2	€ 8,711,599
IDA3	€ 2,940,682
IDC	€ 139,958
Total	**€ 501,551,920**







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.

Day Ahead Market
May 2025

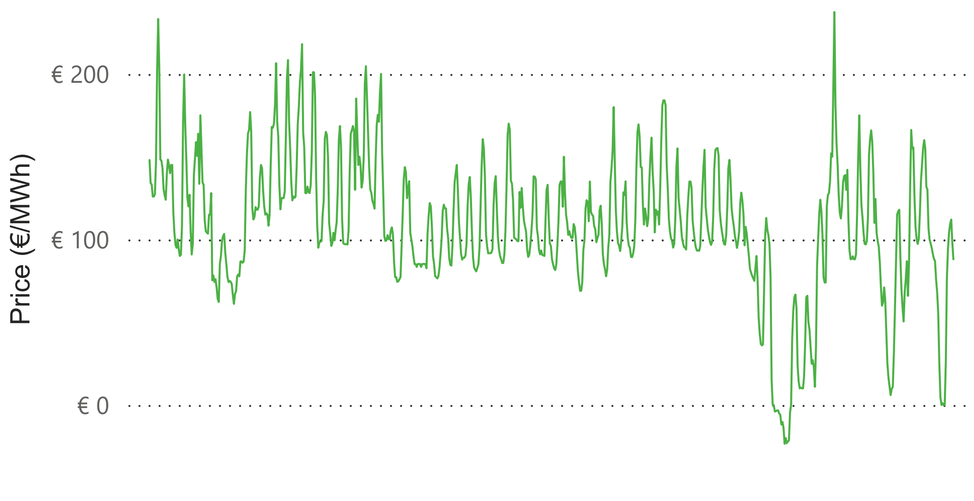
€ 108.54
Average DAM Price

-€ 23.50
Min DAM Price

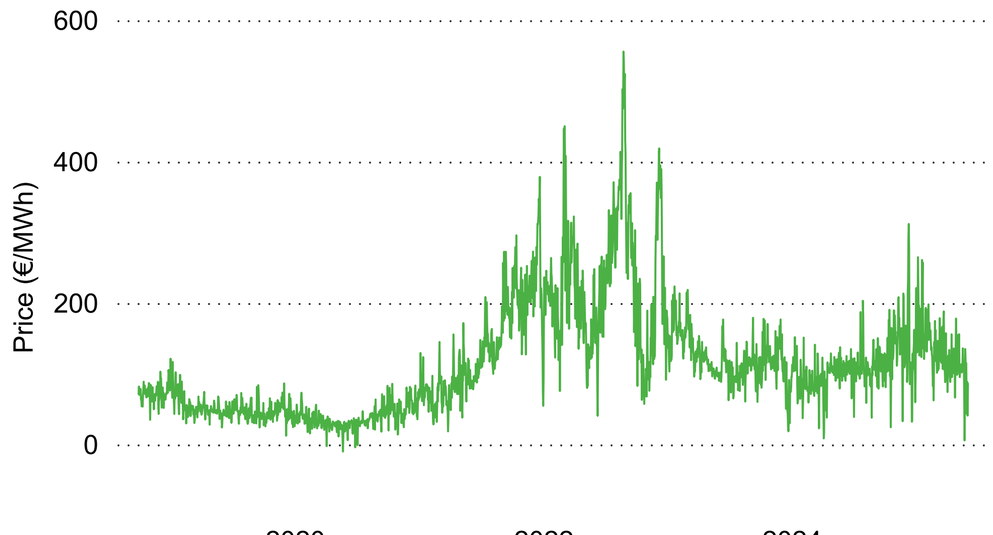
€ 237.39
Max DAM Price

The most frequent price range for April was between €80 and €120.

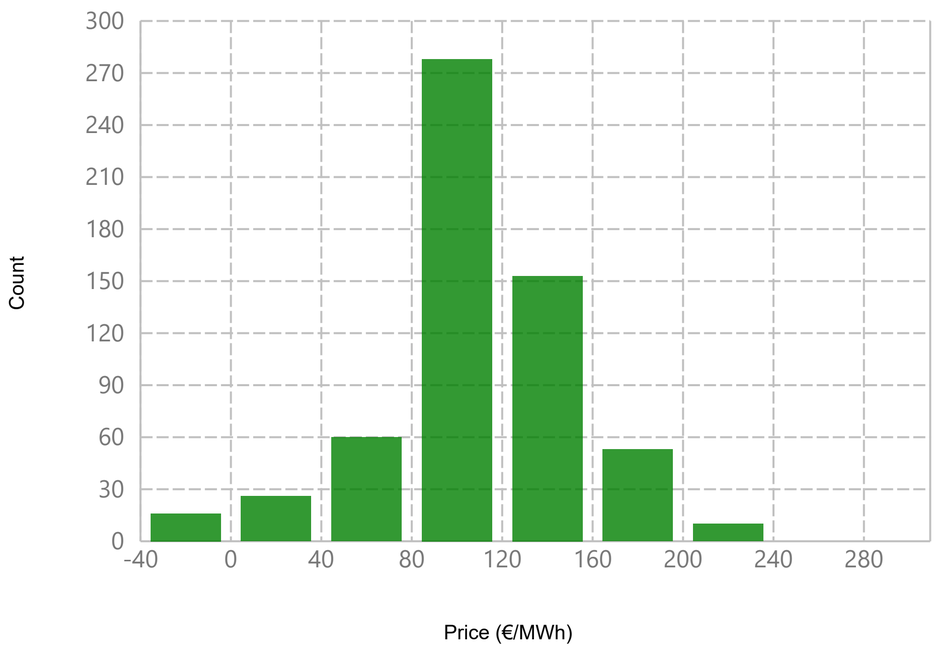
DAM Prices



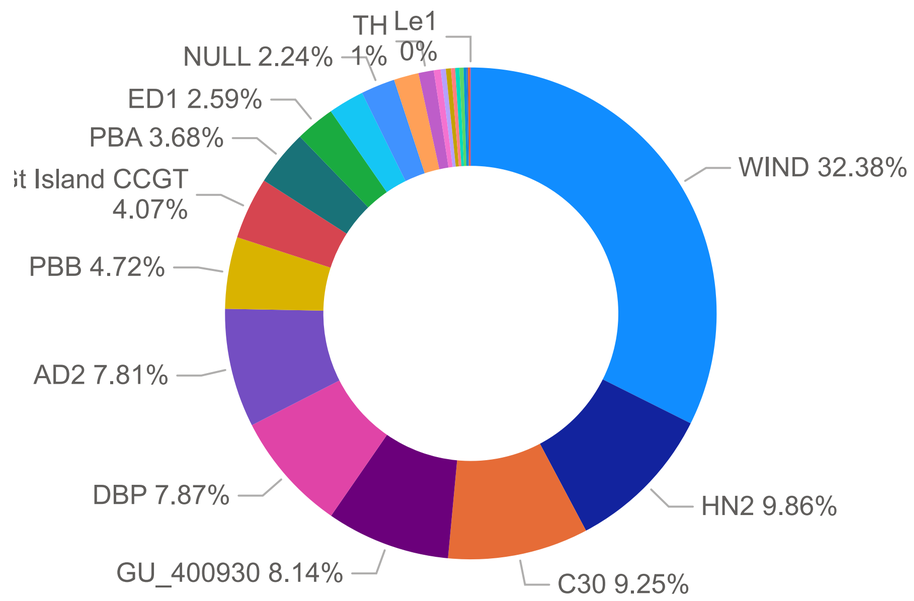
Historic Daily Average DAM Prices



Histogram of DAM Prices



DAM Sell Side Generator Order Results



Intraday Market May 2025

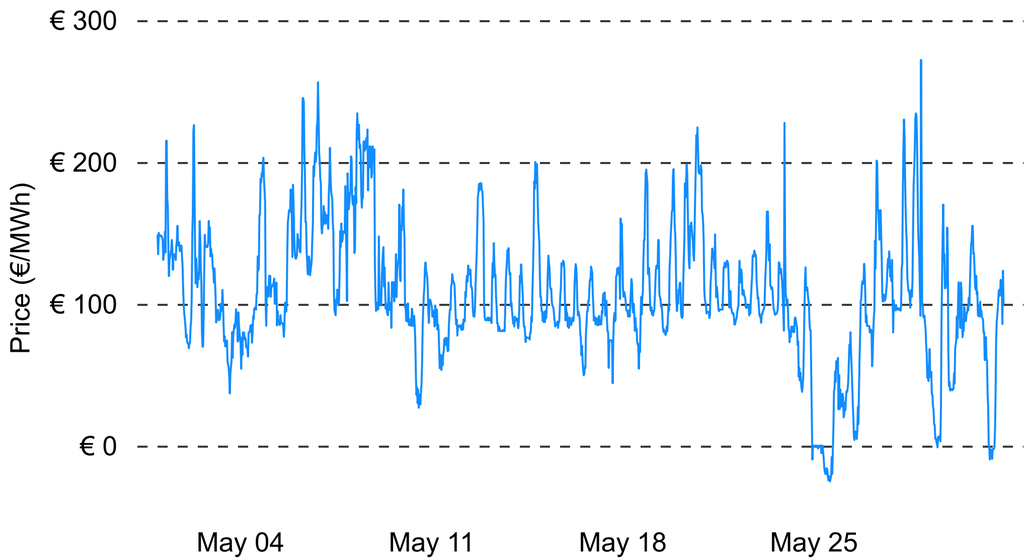
€ 106.85
Average IDA1 Price

-€ 25.17
Min IDA1 Price

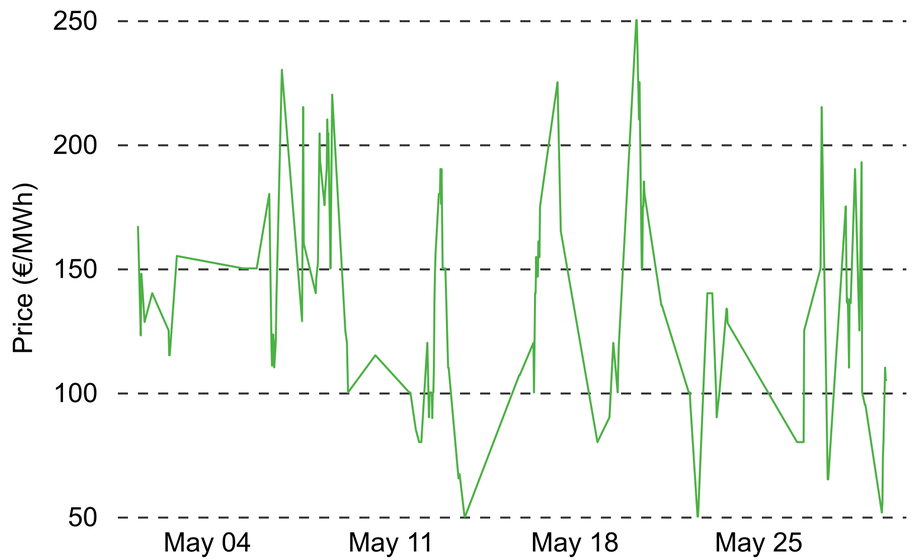
€ 272.00
Max IDA1 Price

The most frequent price range for April was between €80 and €120.

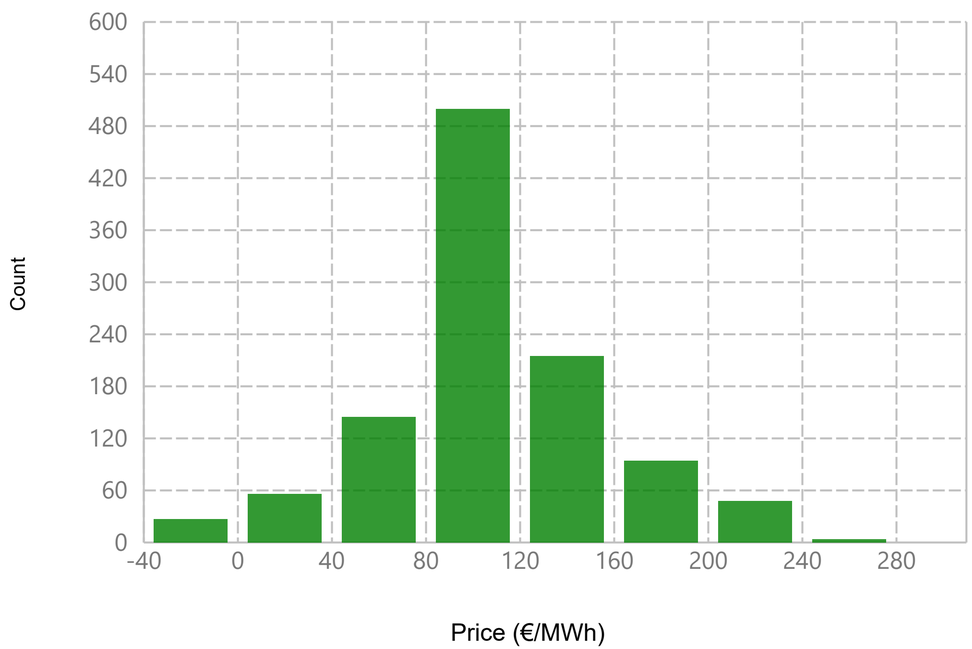
IDA 1 Prices



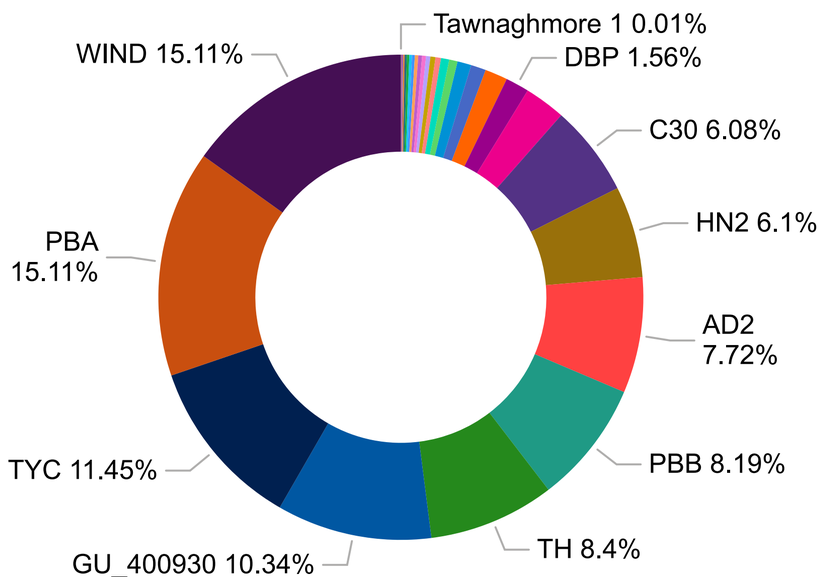
IDC Prices



Histogram of IDA1 Prices



IDA1 Sell Order Results By Market Participant



SEM vs GB DAM
May 2025

SEM Day Ahead Price
€ 108.54
Average DAM Price

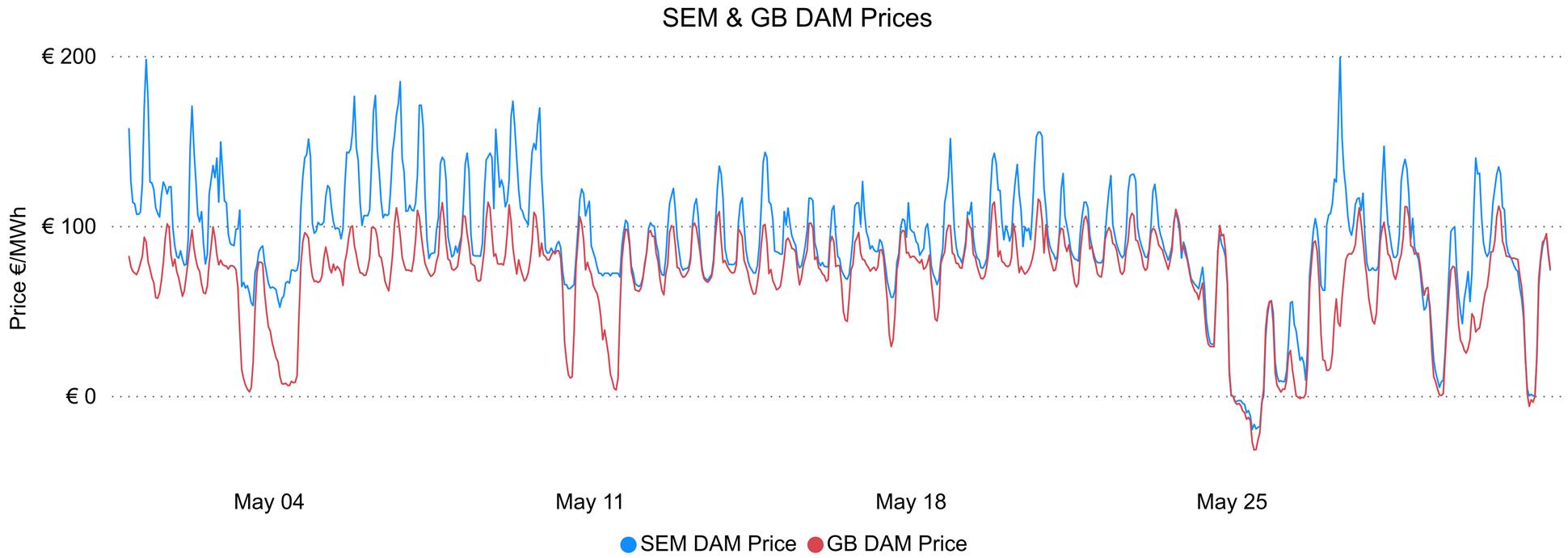
-€ 23.50
Min DAM Price

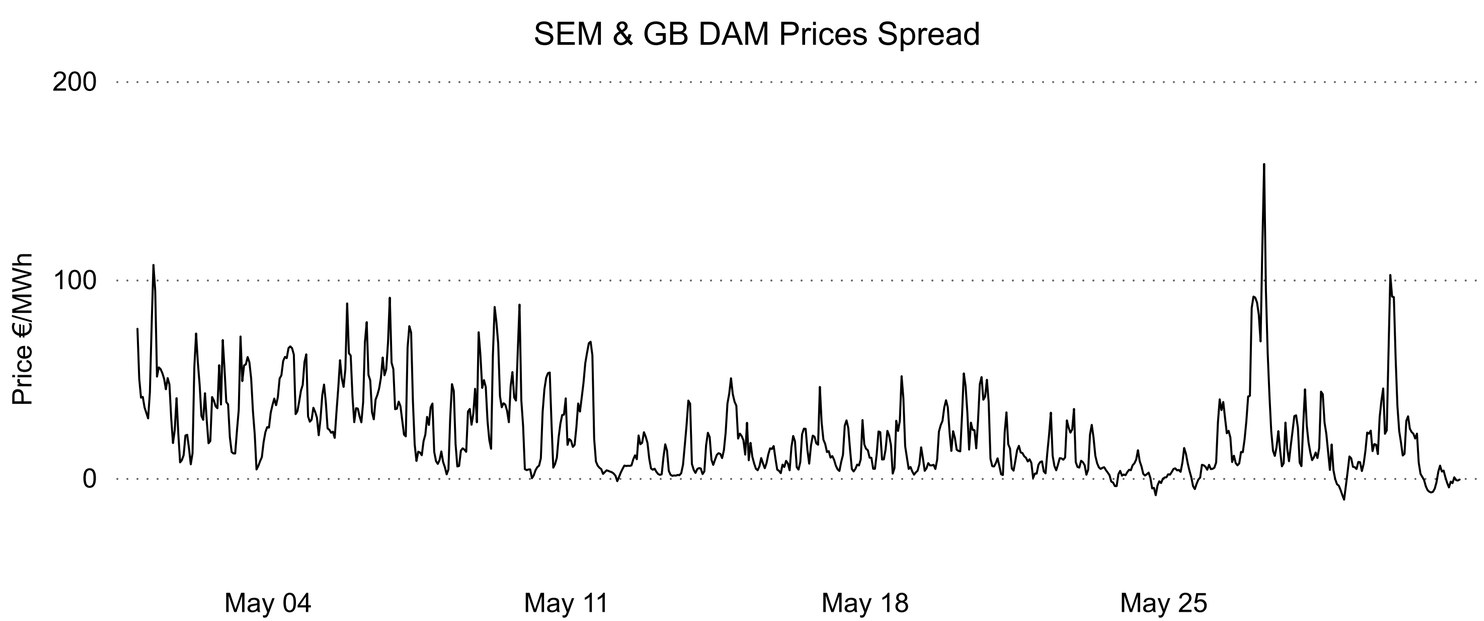
€ 237.39
Max DAM Price

GB Day Ahead Price
€ 69.37
Average Price

-€ 31.89
Min Price

€ 115.75
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.

Periods of significant spreads between the two markets are generally correlated with periods of very low wind in the SEM.

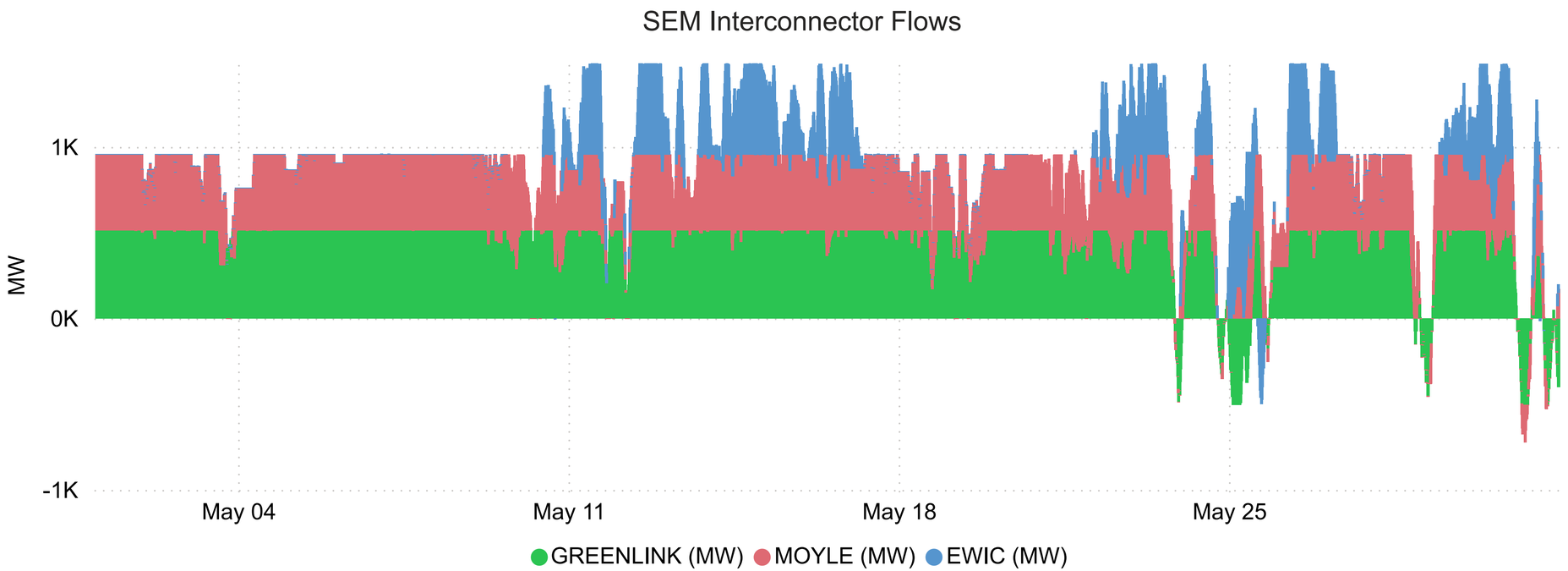
SEM Interconnectors

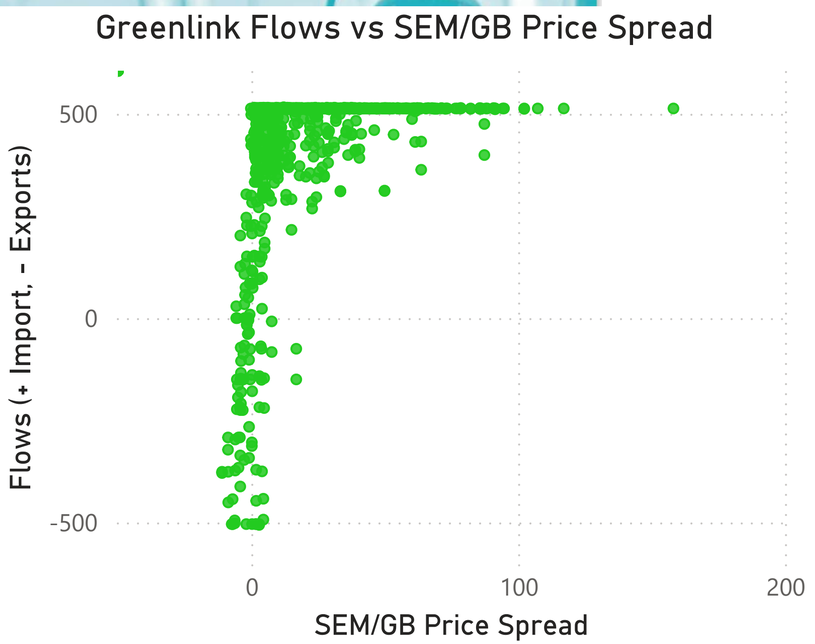
May 2025

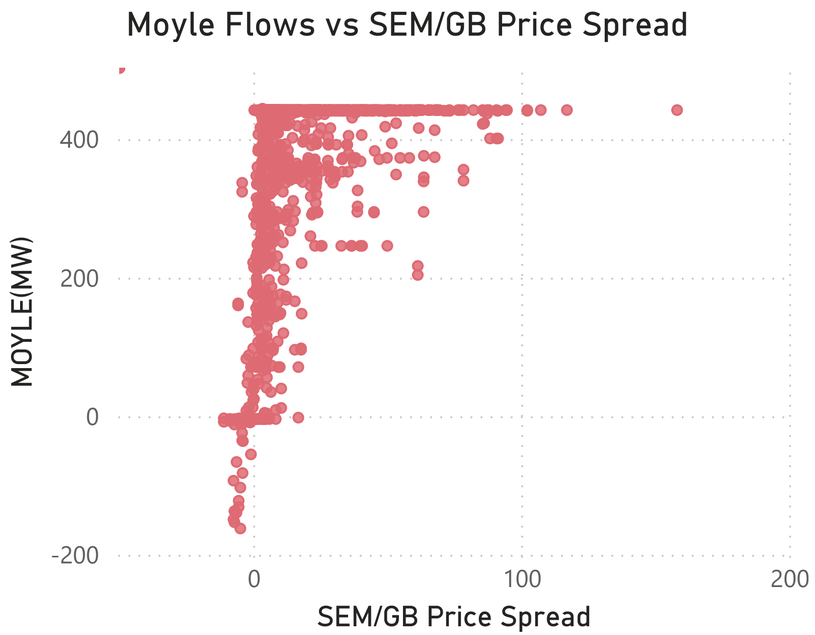
As illustrated, the profile of interconnector flows were predominantly importing power across the month. This reflects the predominantly higher prices in the SEM compared with GB.

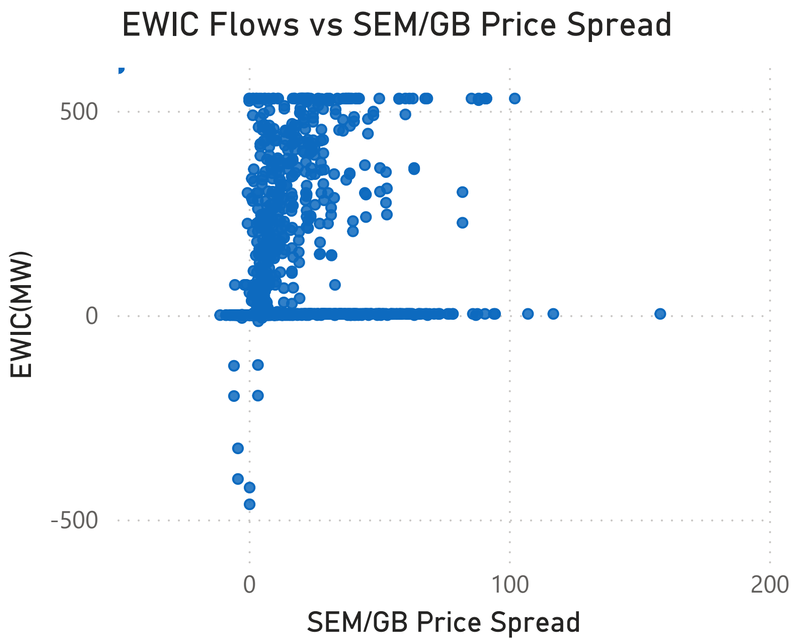
Export flows on the Greenlink IC were observed towards the end of month when strong wind output resulted in oversupply in the SEM.

EWIC returned from a planned outage on 10th May.





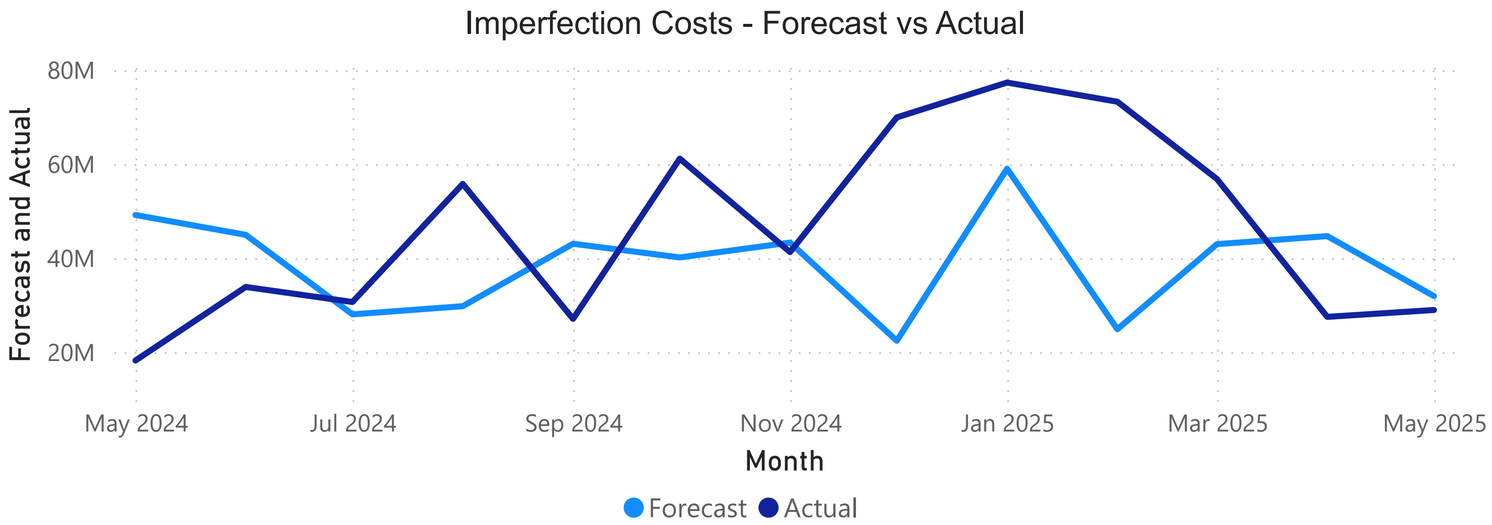




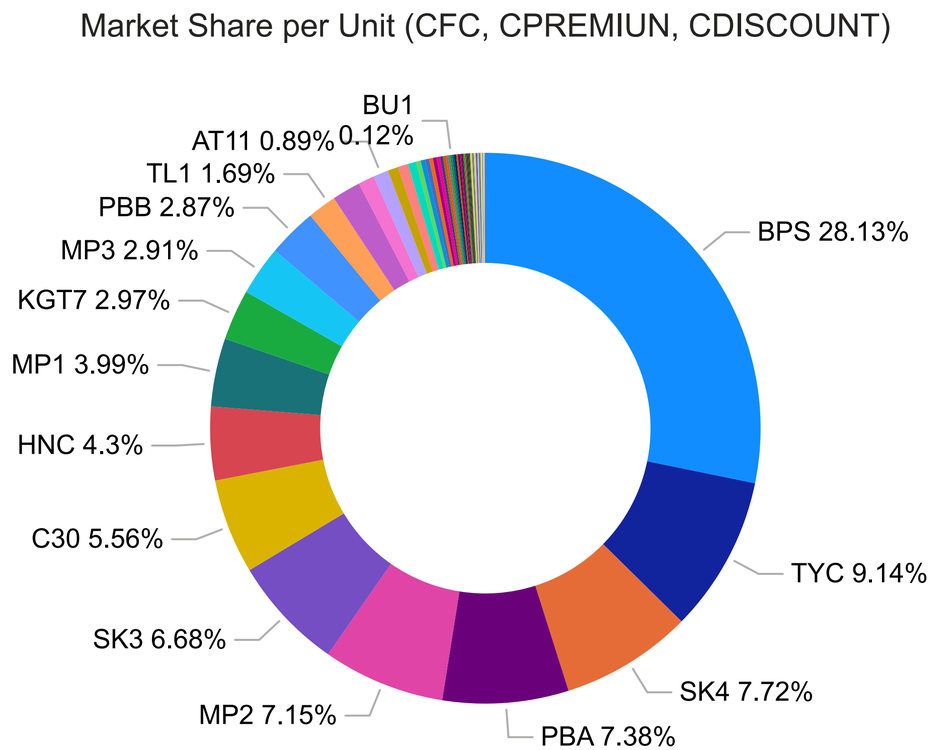
Balancing Market May 2025

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	110,924.31
CAOOPO	-92,311.68
CCURL	-40,558.06
CDISCOUNT	13,806,701.25
CFC	1,951,288.55
CPREMIUM	14,524,681.47
CTEST	-31,453.25
CUNIMB	-1,267,551.28
Total	**28,961,721.29**



Constraints Payments

This charts illustrates the distribution of selected Constraint Payments, to specific power plants. BPS (EP Ballylumford) was the largest receiver of these payments for this month.

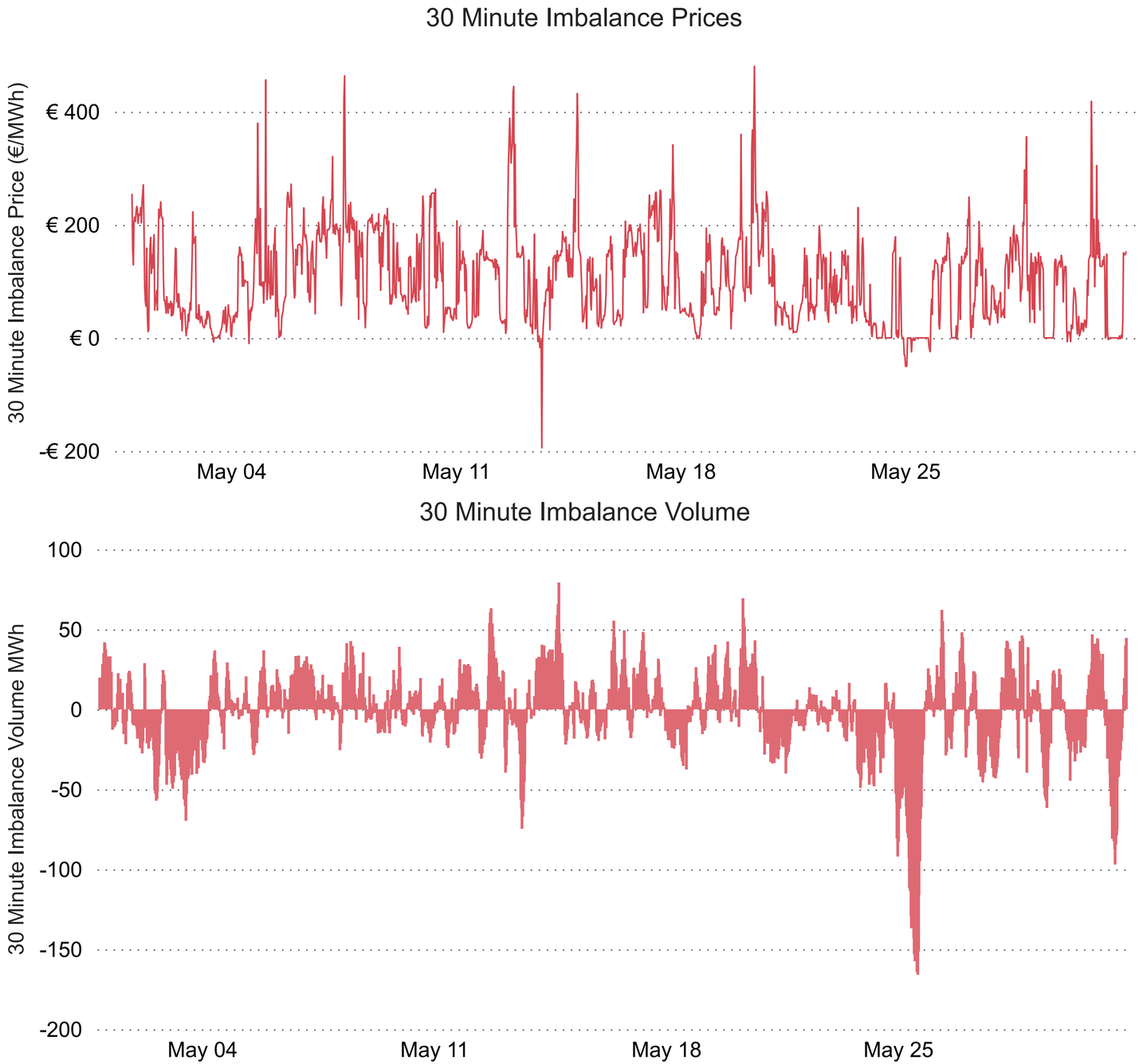
Balancing Market May 2025

30 Minutes Imbalance Price

€ 103.48
Average Price

-€ 194.25
Lowest Price

€ 480.17
Highest Price

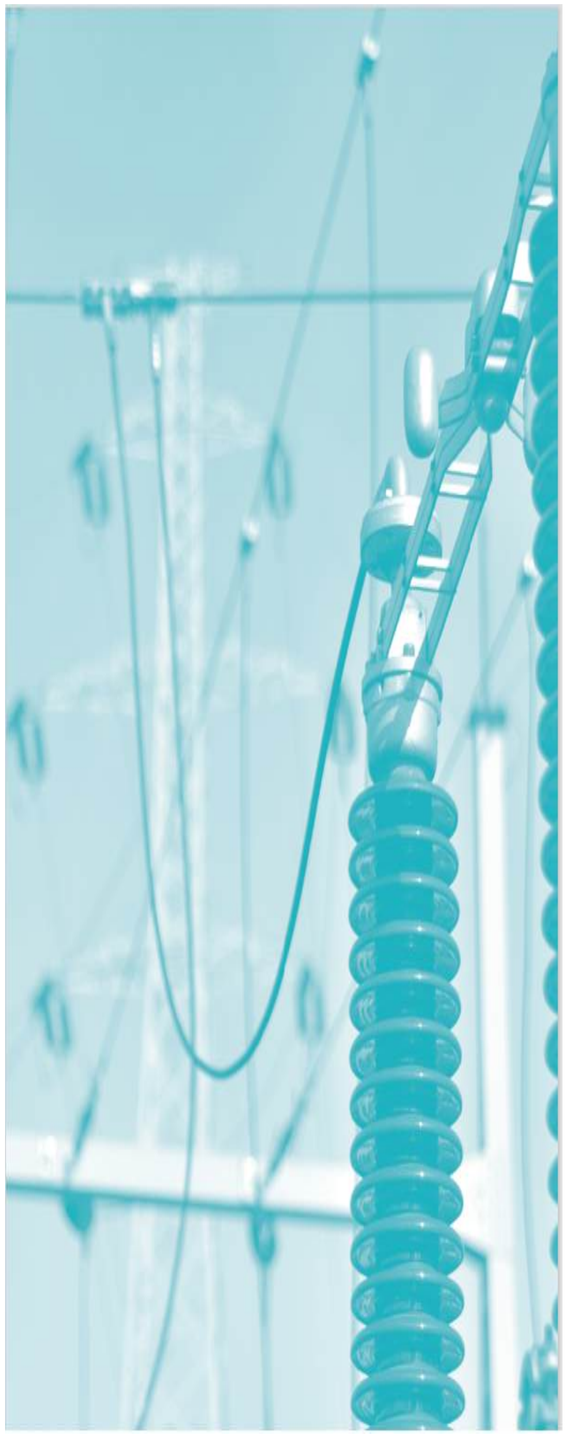


SEM committee

Imbalance Price & Volumes

The average Imbalance (BM) Price this month was lower than the 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
May 2025

SEM Demand

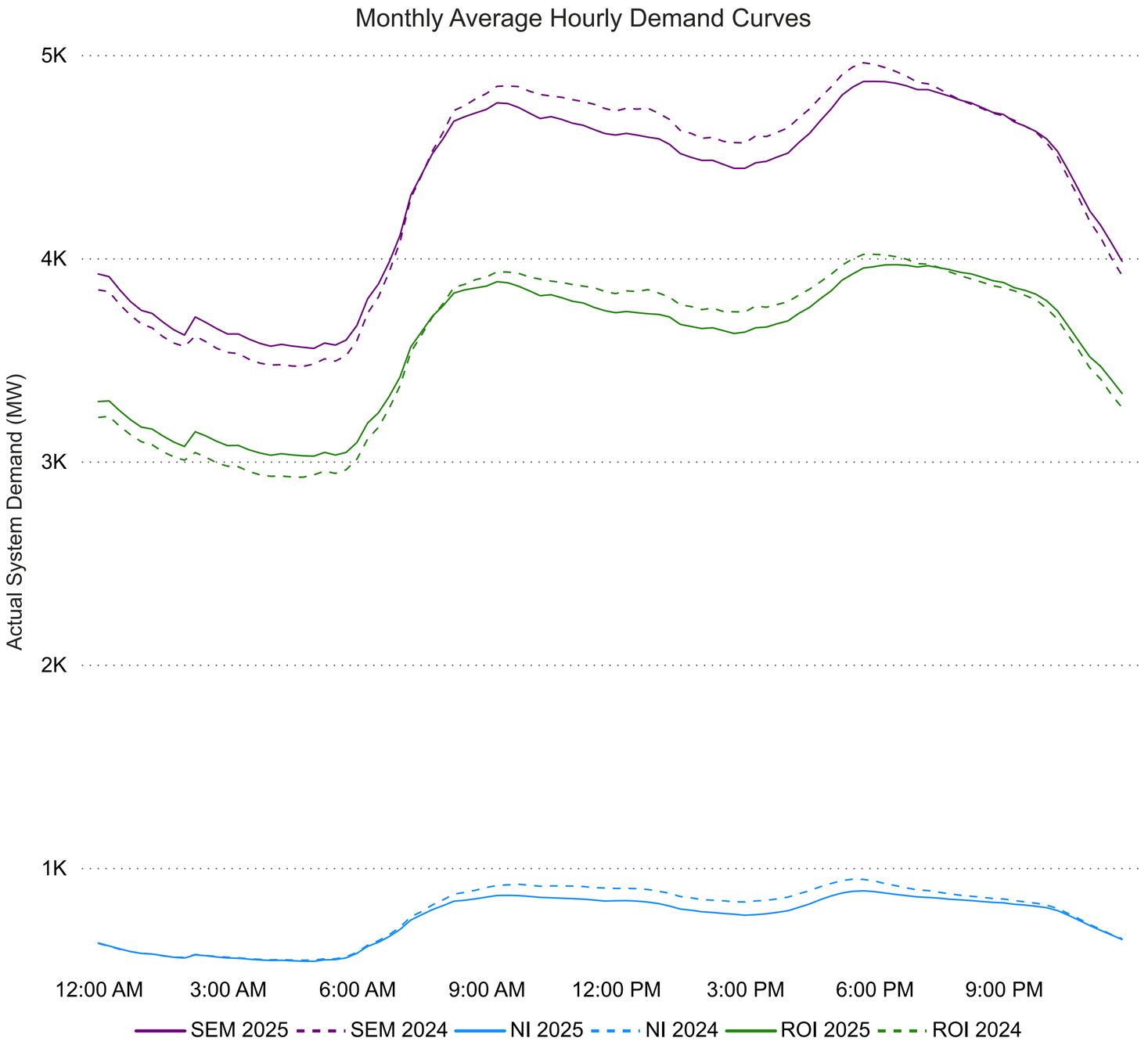
4,336.20 SEM Average 2025	4,356.86 SEM Average 2024
3,555.60 SEM Min 2025	3,467.25 SEM Min 2024
4,869.52 SEM Max 2025	4,961.44 SEM Max 2024

NI Demand

744.58 NI Average 2025	775.62 NI Average 2024
539.65 NI Min 2025	545.19 NI Min 2024
886.68 NI Max 2025	943.81 NI Max 2024

ROI Demand

3,578.85 ROI Average 2025	3,581.24 ROI Average 2024
3,025.57 ROI Min 2025	2,922.09 ROI Min 2024
3,967.60 ROI Max 2025	4,018.56 ROI Max 2024



SEM Demand

The graph indicates a 0.47% decrease in all-island demand compared to the same period last year.

NI demand experienced a 4% decrease compared to the same period last year.

ROI demand decreased by 0.067% relative to the same period last year.

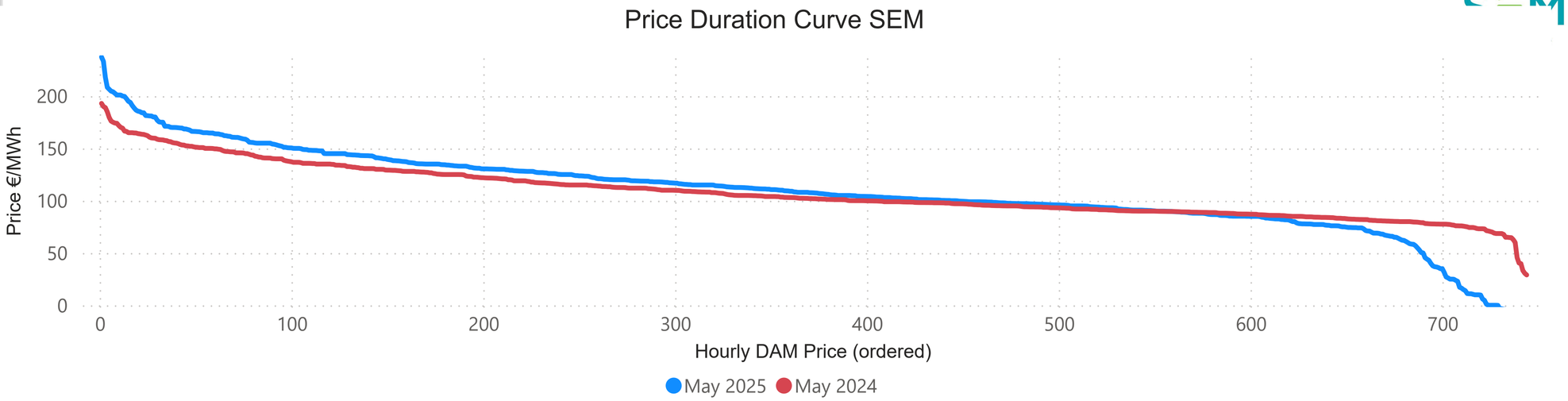
Due to solar energy adoption, minimum day-time demand is falling as more and more customers self-consume from rooftop solar generation and reduce demand from the grid.

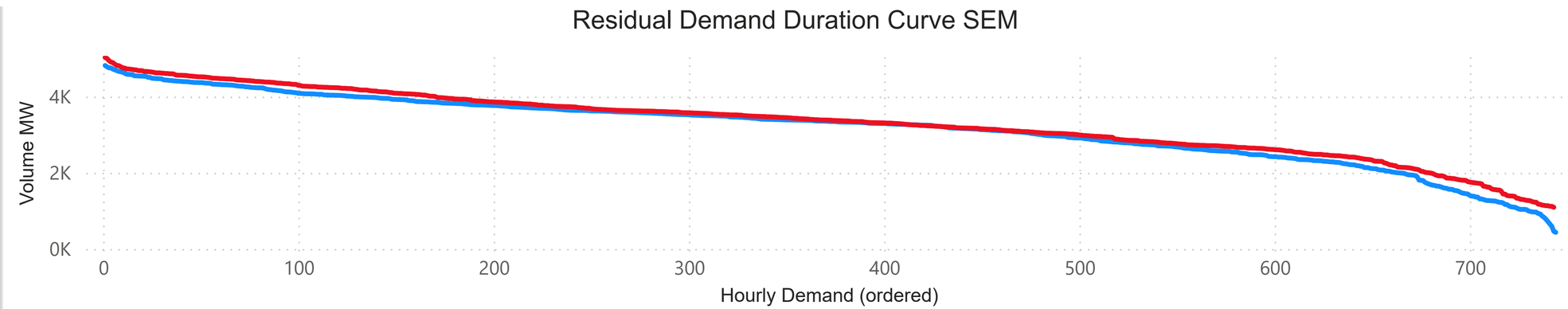
Duration Curves May 2025

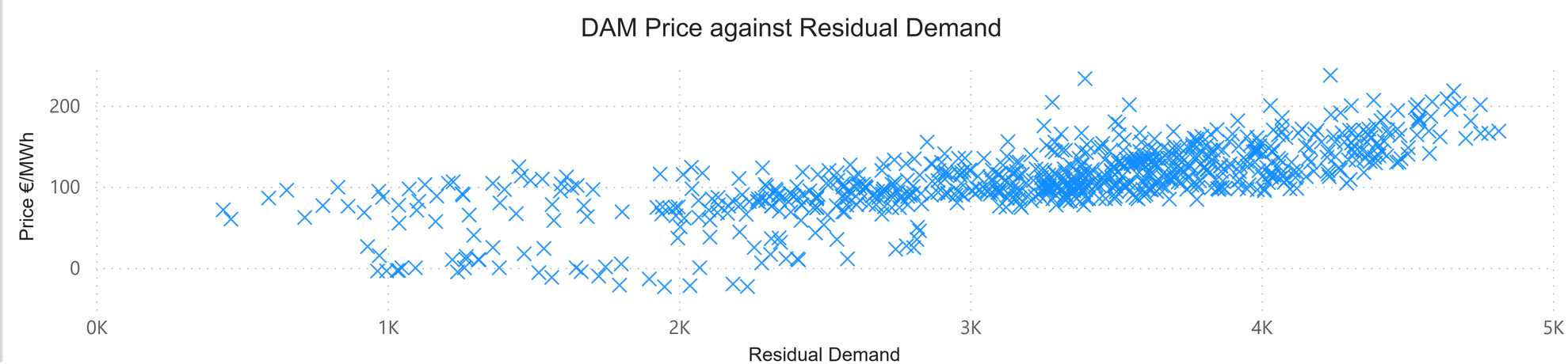
Price Duration
The price duration curve shows the hourly DAM prices across the month ordered from the largest to the smallest.

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.



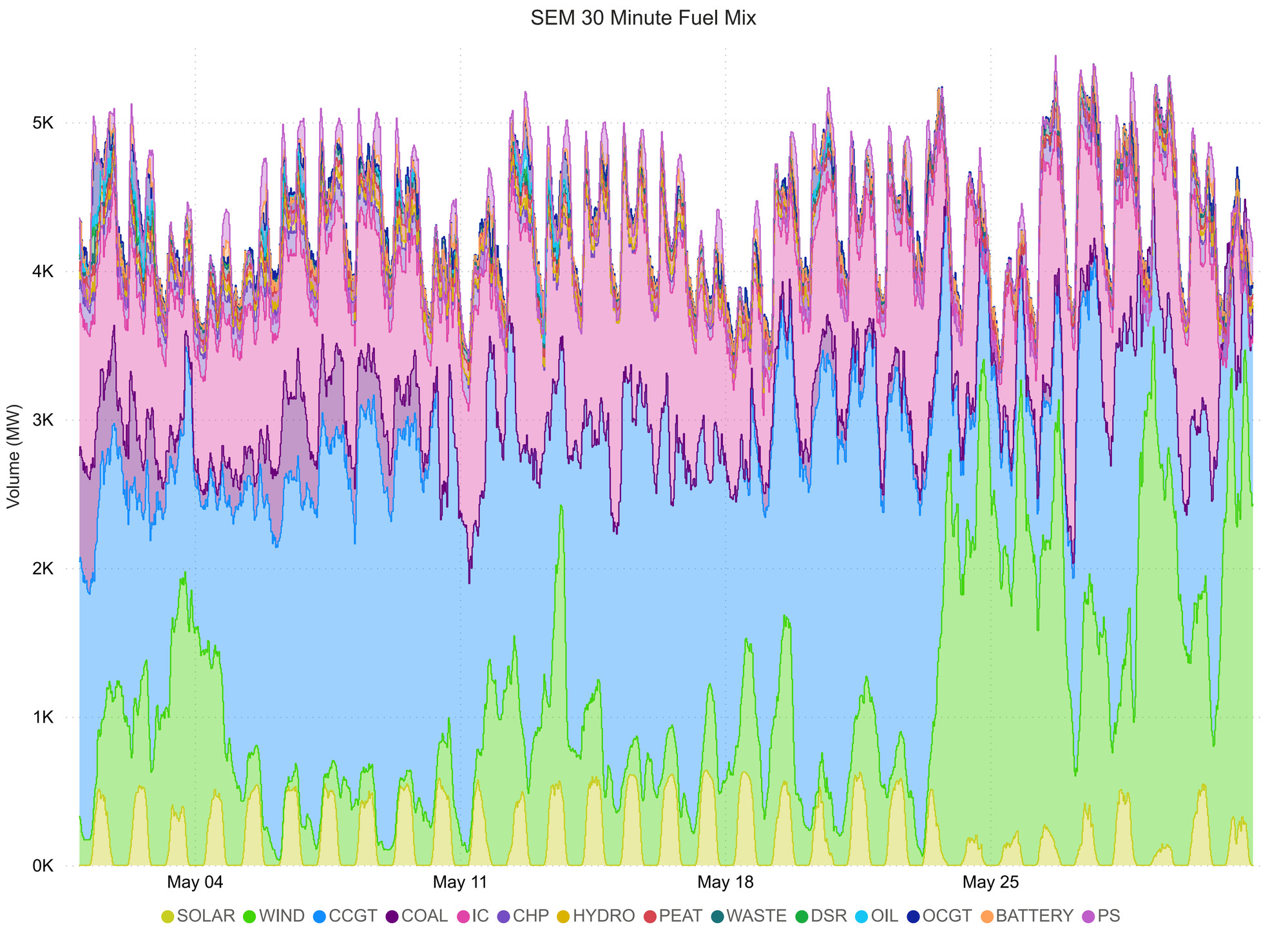




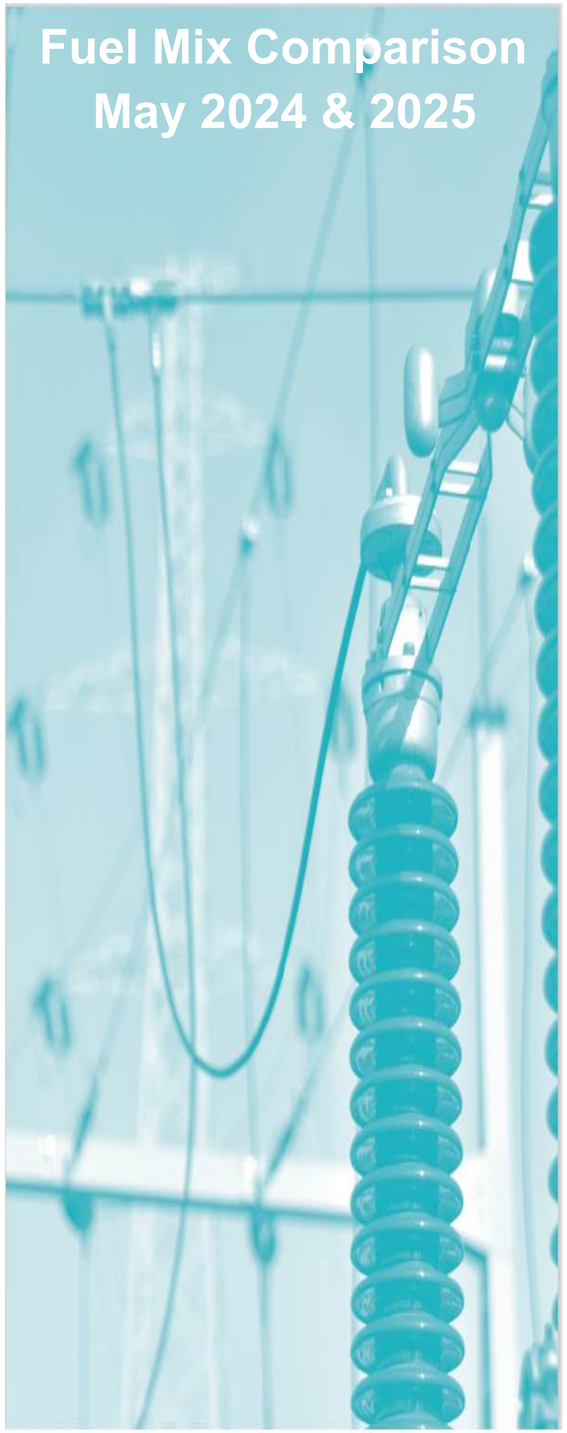
Fuel Mix
May 2025

Fuel Type	Avg Monthly	Per. Monthly
CCGT	1816	42.2%
WIND	930	21.6%
INTERCONNECTORS	912	21.2%
SOLAR	190	4.4%
COAL	150	3.5%
CHP	123	2.9%
WASTE	71	1.6%
PEAT	54	1.3%
HYDRO	33	0.8%
DSR	29	0.7%
OCGT	25	0.6%
OIL	2	0.0%
BATTERY	-8	-0.2%
PUMPED STORAGE	-18	-0.4%

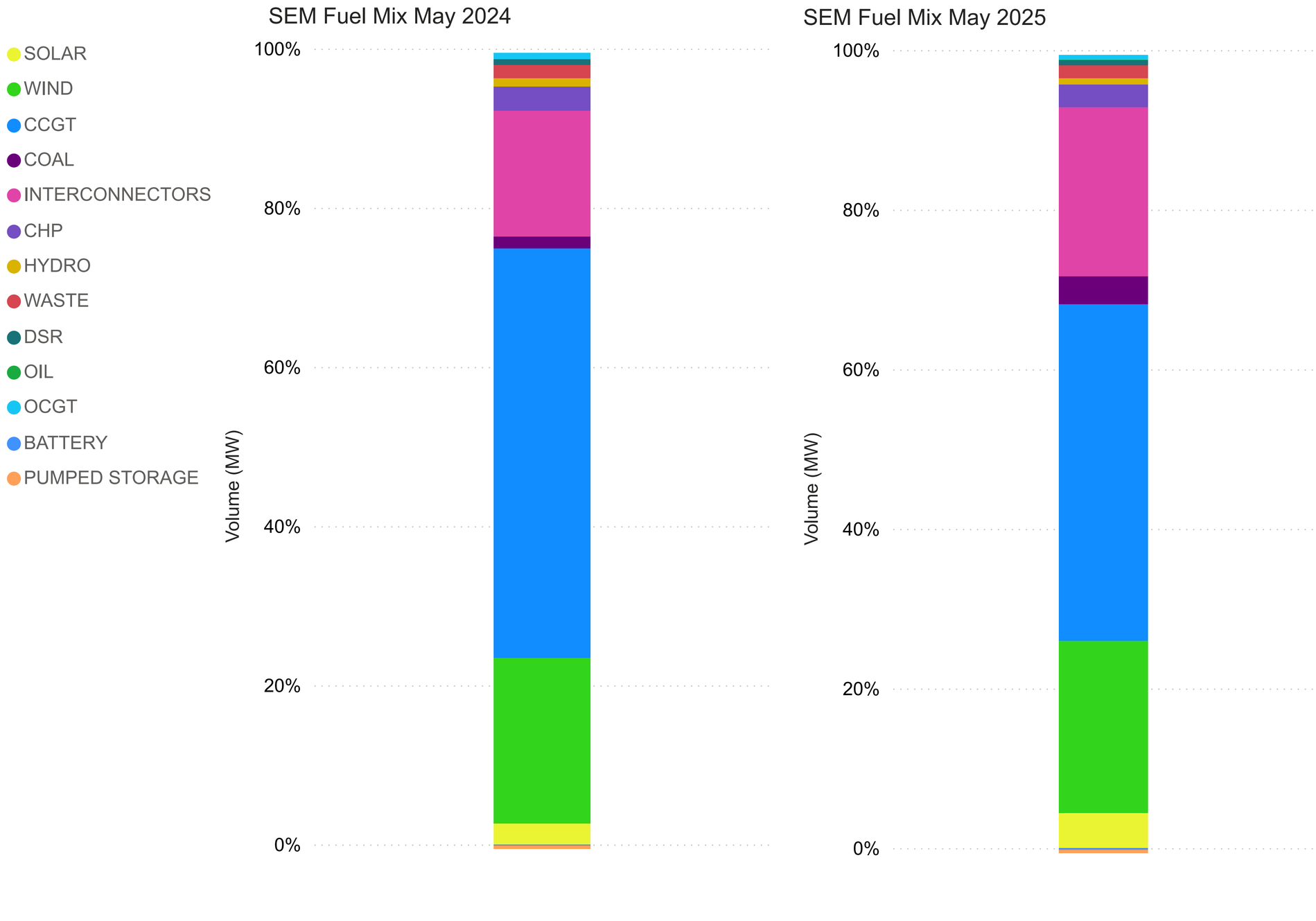
Fuel Type	Max Monthly	Min Monthly
WIND	3575	13
CCGT	3046	778
INTERCONNECTORS	1499	-696
COAL	777	0
SOLAR	640	0
OCGT	444	0
PUMPED STORAGE	291	-301
BATTERY	254	-189
OIL	189	0
DSR	187	0
CHP	165	0
PEAT	112	0
HYDRO	98	0
WASTE	82	17



Fuel Mix Comparison May 2024 & 2025



SEM committee



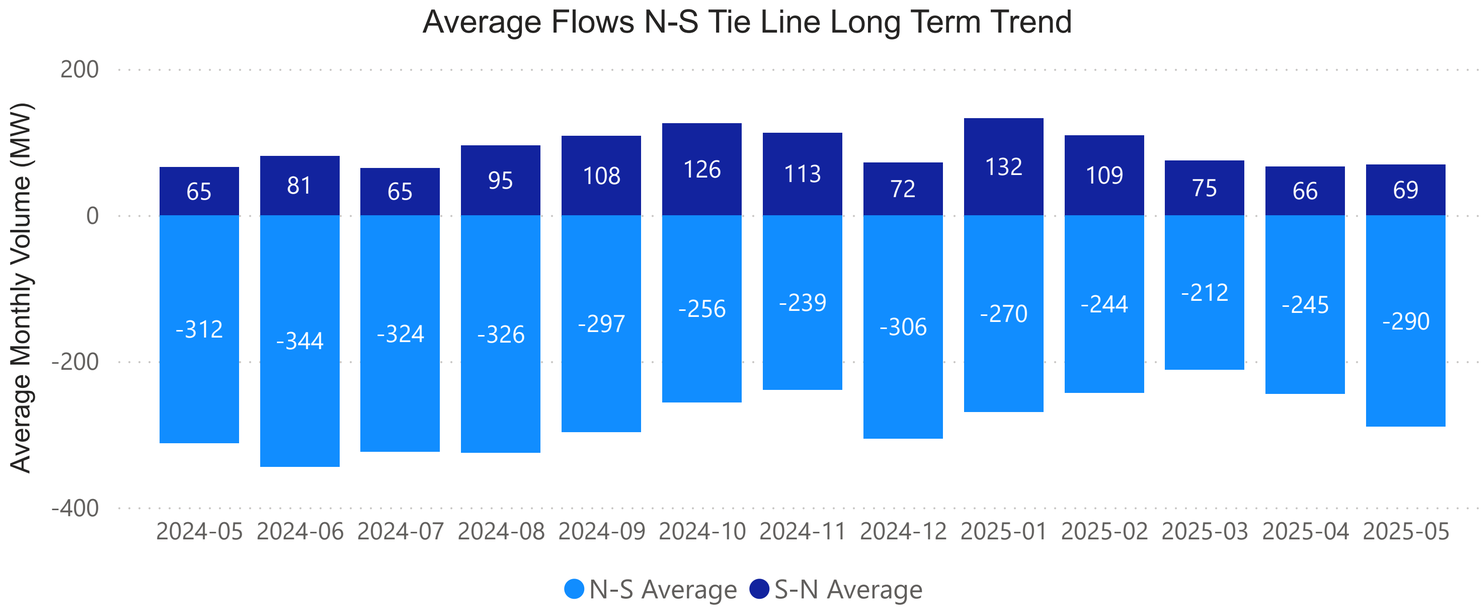
North-South Tie Line May 2025

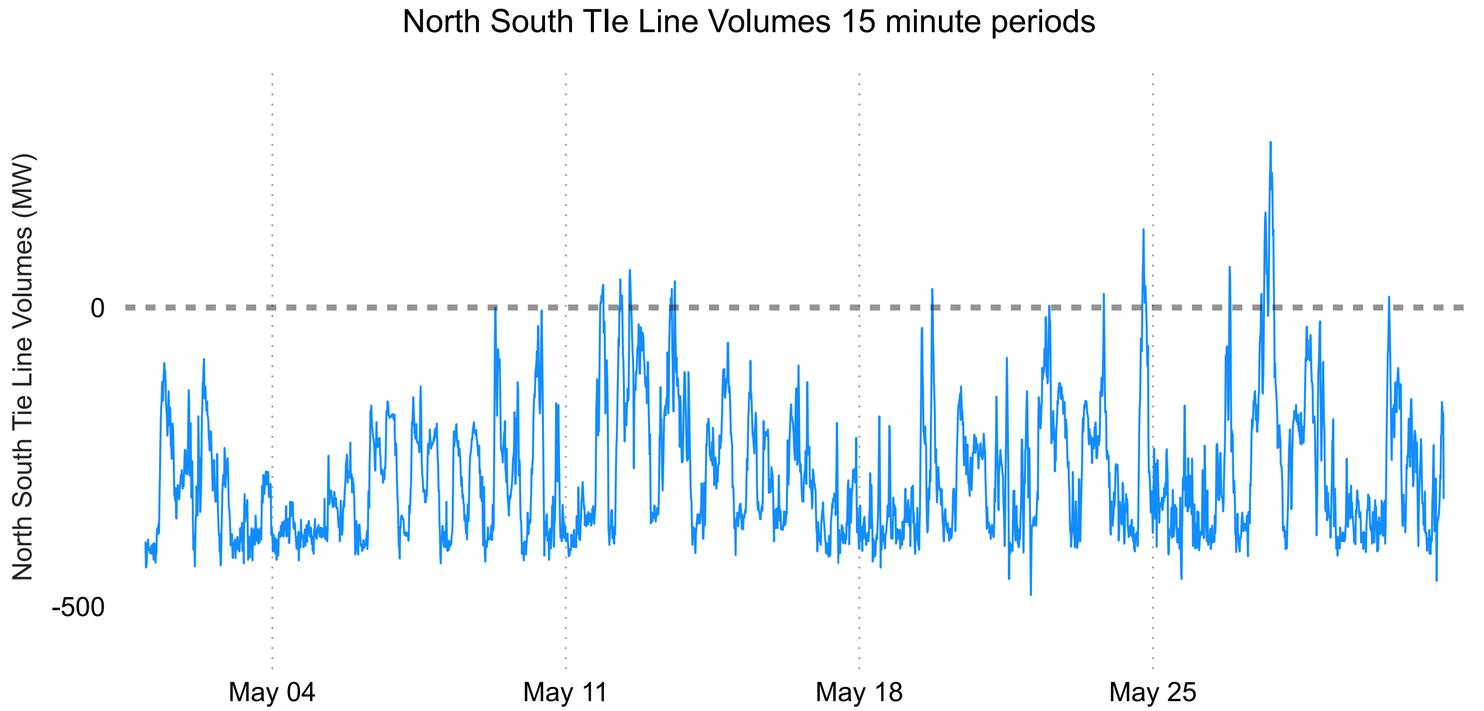
Average Flow NI to ROI (MW)
-289.75

Average Flow ROI to NI (MW)
68.95

Average Net Flow NI to ROI (MW)
-281.93

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





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 constrains 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.

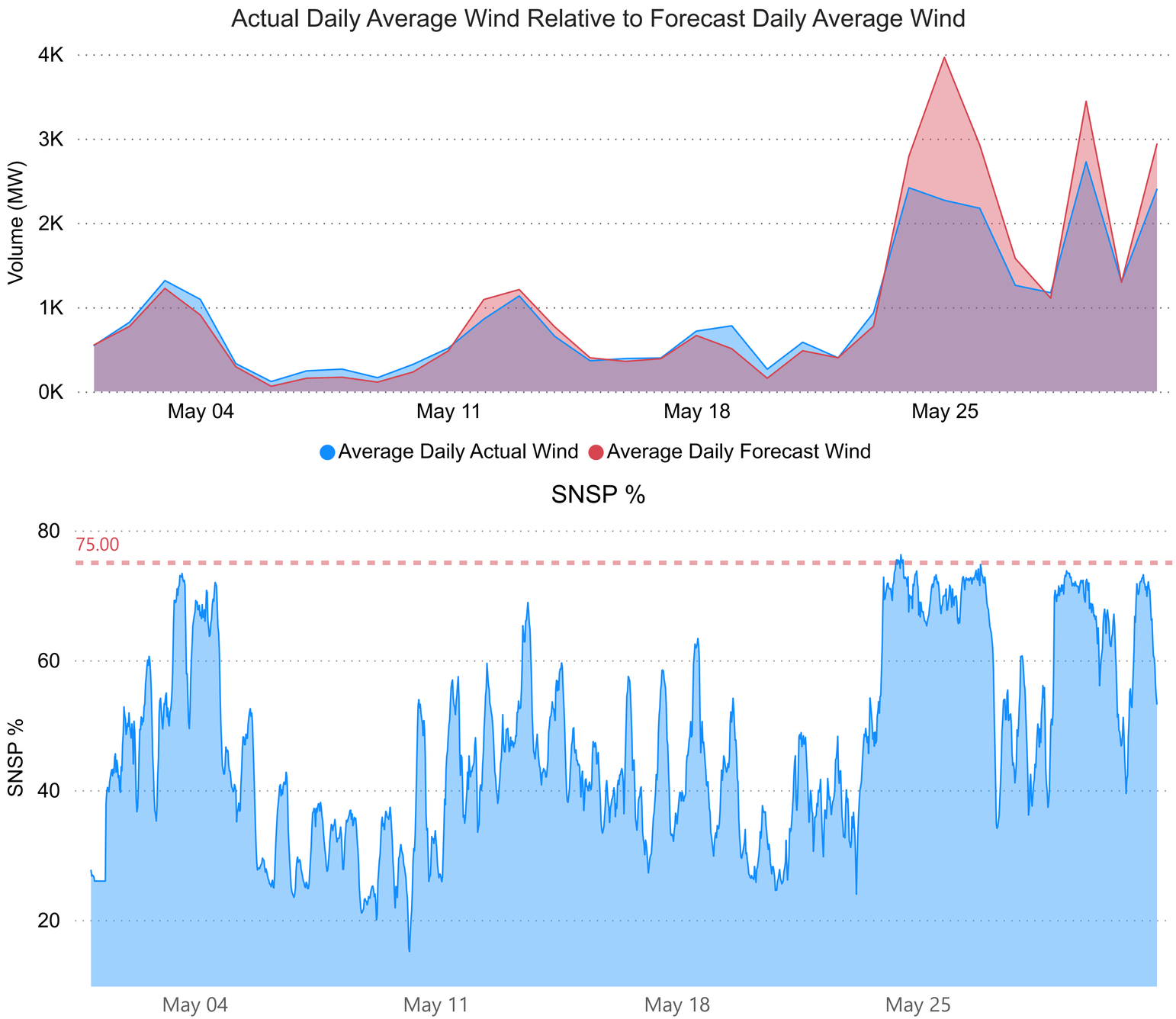
Wind Generation May 2025

Average Daily Actual Wind (MW)
933

Average Daily Forecast Wind (MW)
1,038

Min SNSP%
15.14

Max SNSP%
76.26



SEM committee

Wind Generation

Average wind output decreased by 27% from last month and increased by 4% 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.

CO_2 May 2025

CO2 Intensity (gCO2/kWh)

227.13
Average

104
Lowest

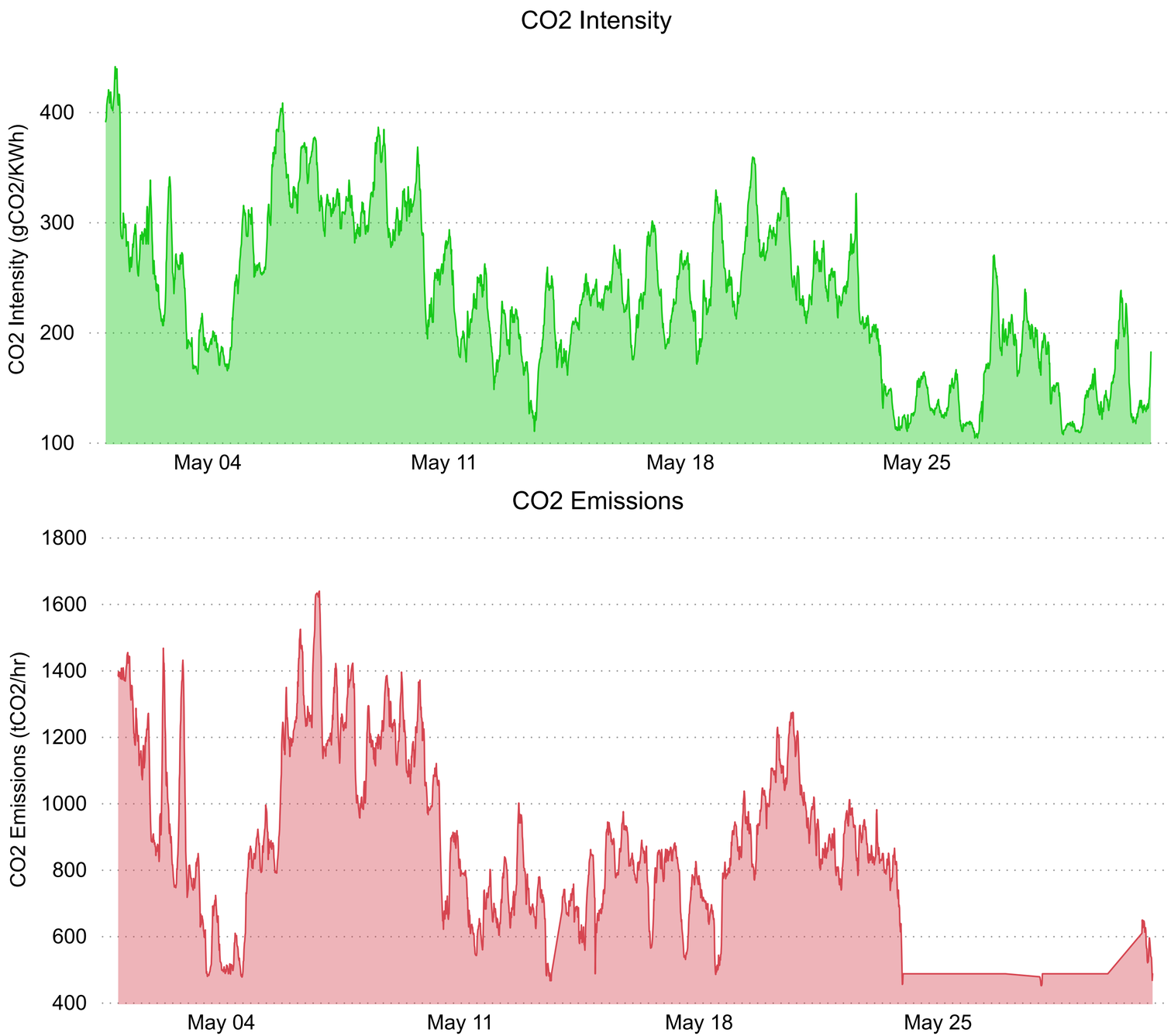
441
Highest

CO2 Emissions (tCO2/hr)

892
Average

450
Lowest

1638
Highest

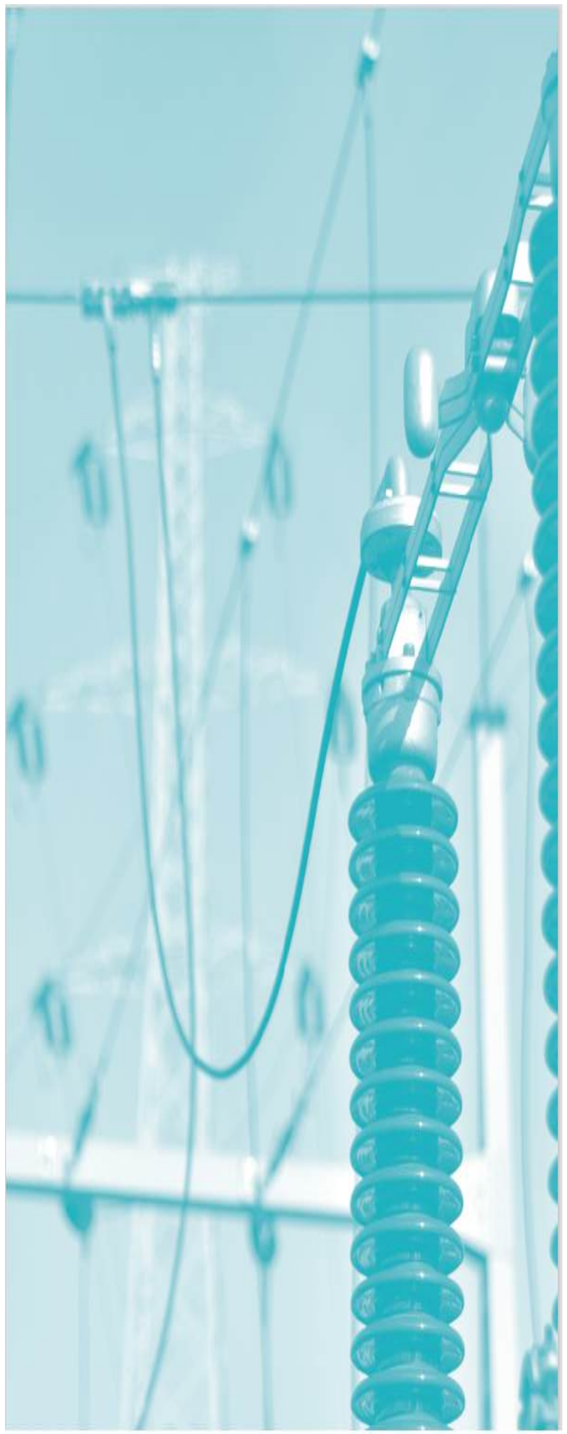


CO_2 Intensity

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 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.



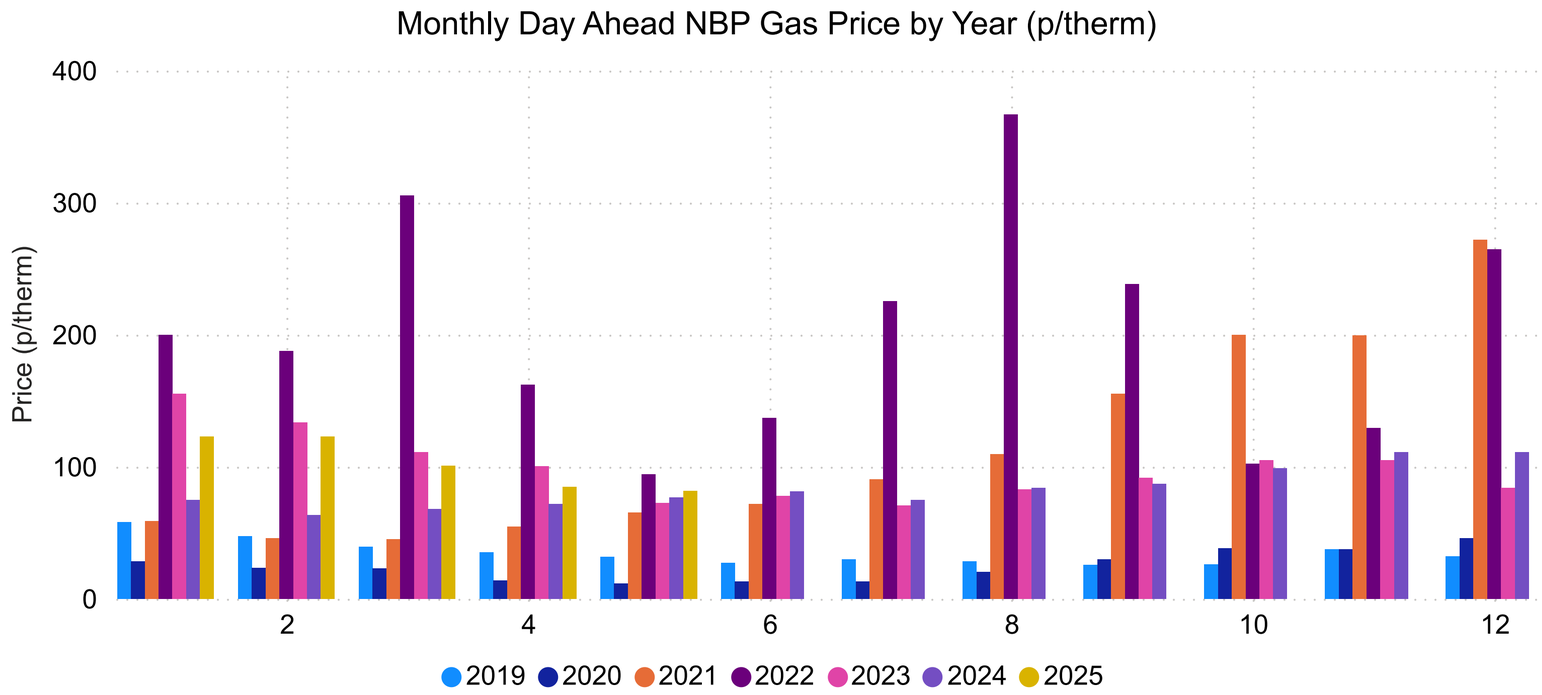
Fuel Costs and Spreads

Gas Price May 2025

81.82
Monthly Average (p/therm)

74.73
Monthly Low (p/therm)

90.45
Monthly High (p/therm)



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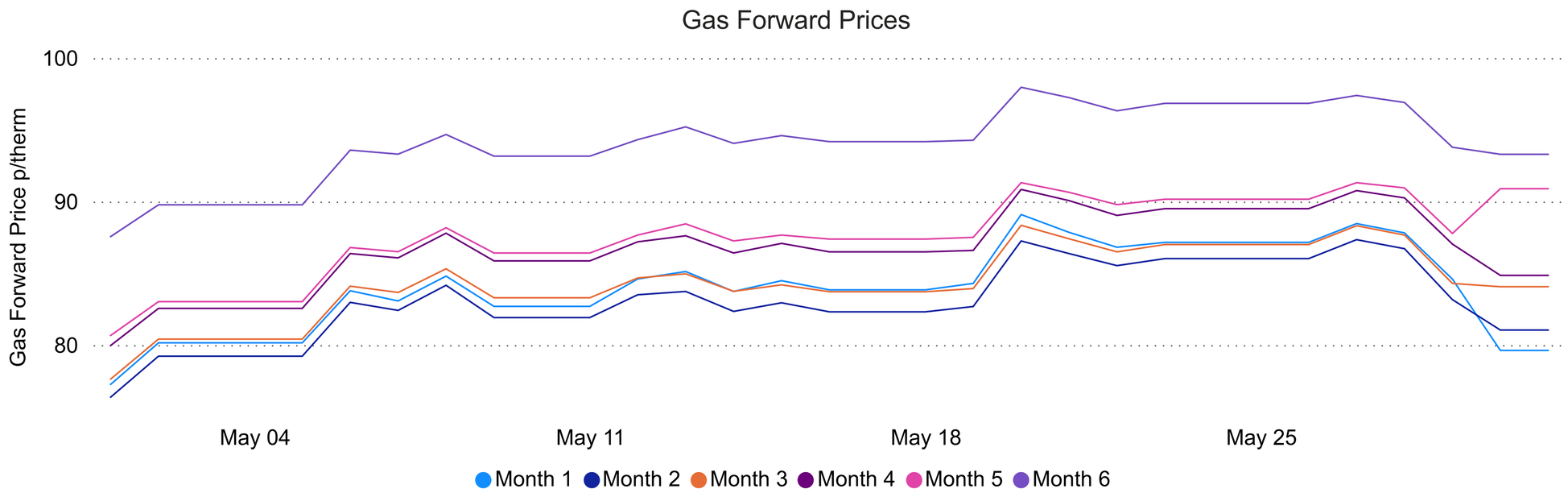
Gas Prices

Gas prices experienced an average decline of 3% compared to the previous month, reaching its lowest level since July 2024.

Gas Forward Prices

Increased temperatures and lower EU gas storage targets continue to put downward pressure on the futures market.



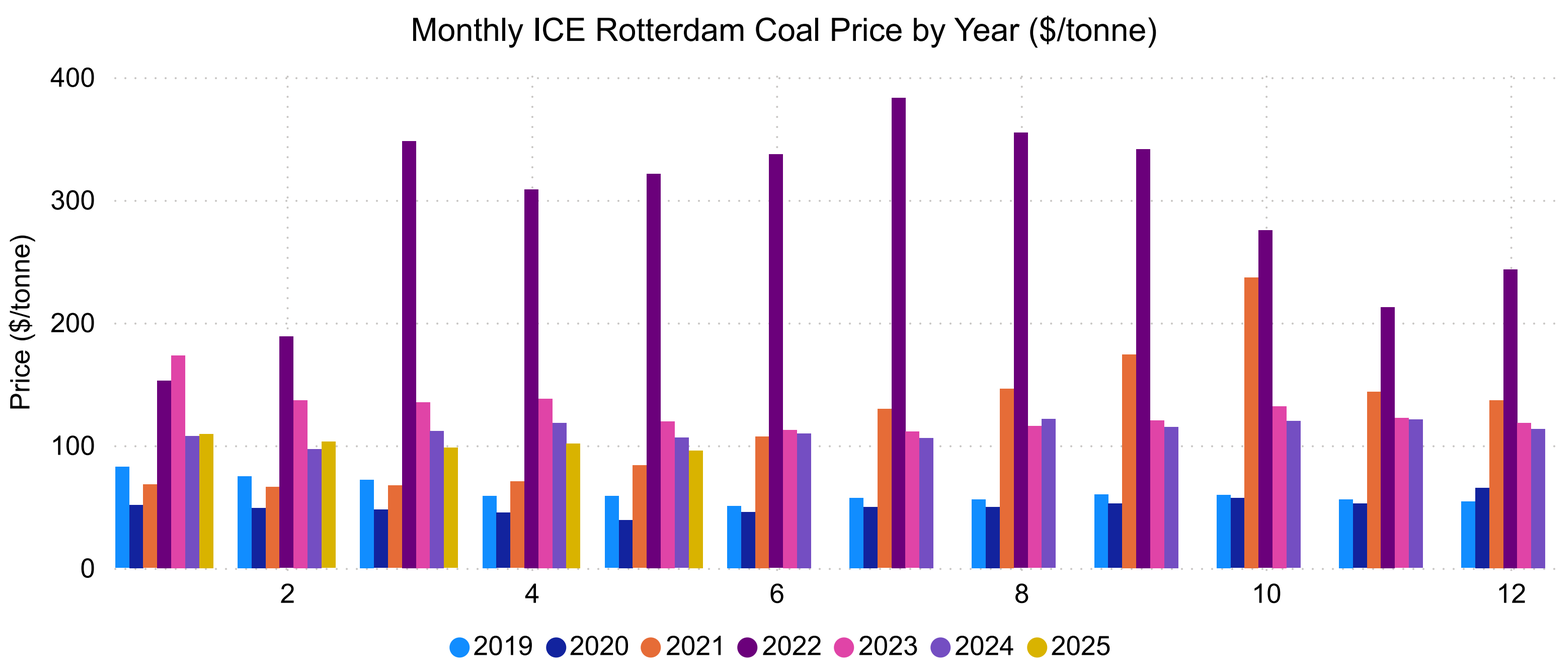
Coal Price
May 2025

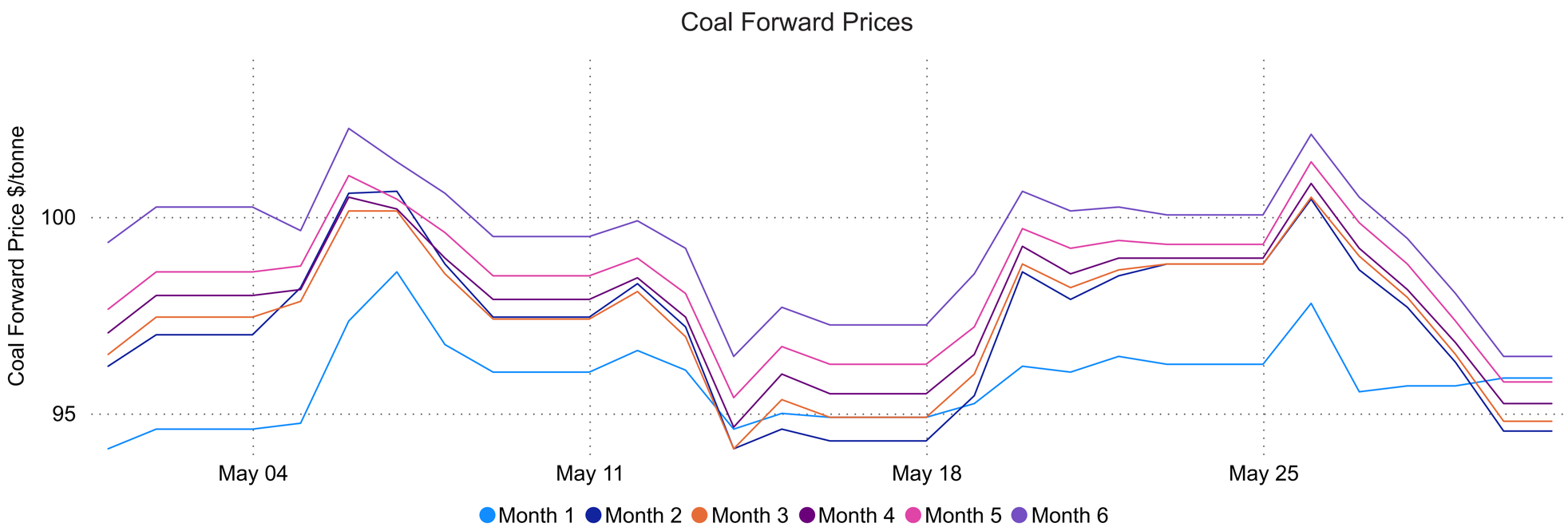
Coal Prices Per Tonne

$95.80
Monthly Average

$94.10
Monthly Low

$98.60
Monthly High





Coal Prices

Coal prices averaged $95.8/tonne, decreasing 6% from the previous month and notable 10% decrease from the last year same period.

Carbon Price May 2025

EU Carbon Prices (€/tonne)

€ 71.00
Monthly Average

€ 66.87
Monthly Low

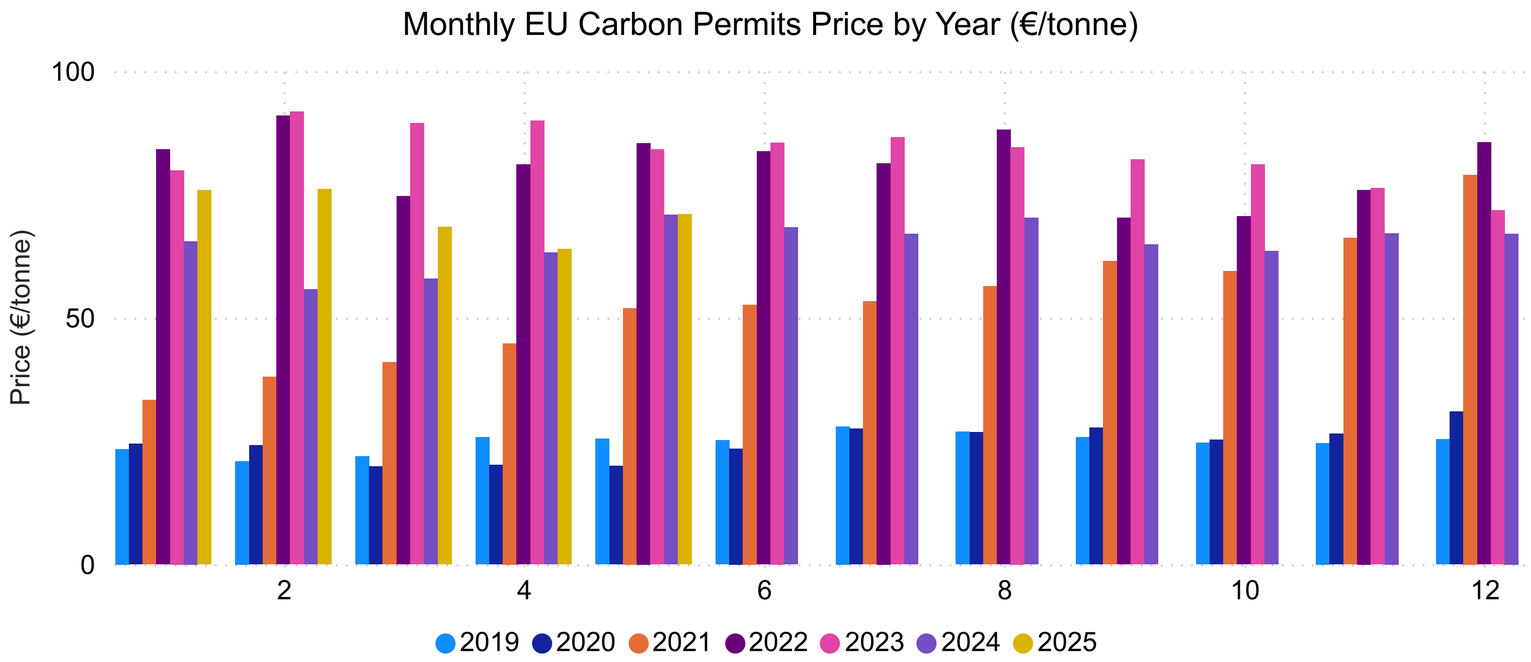
€ 73.47
Monthly High

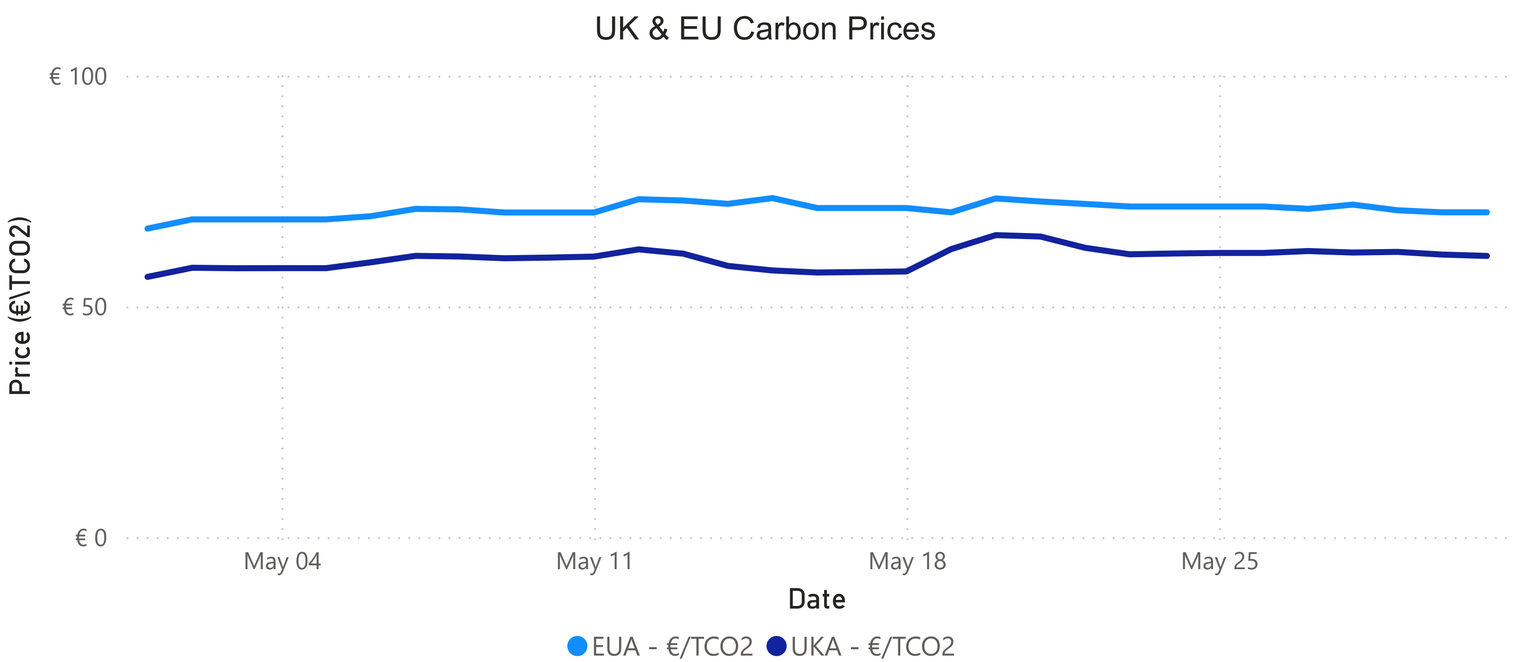
UK Carbon Prices (€/tonne)

€ 60.48
Monthly Average

€ 56.40
Monthly Low

€ 65.45
Monthly High





Carbon Prices

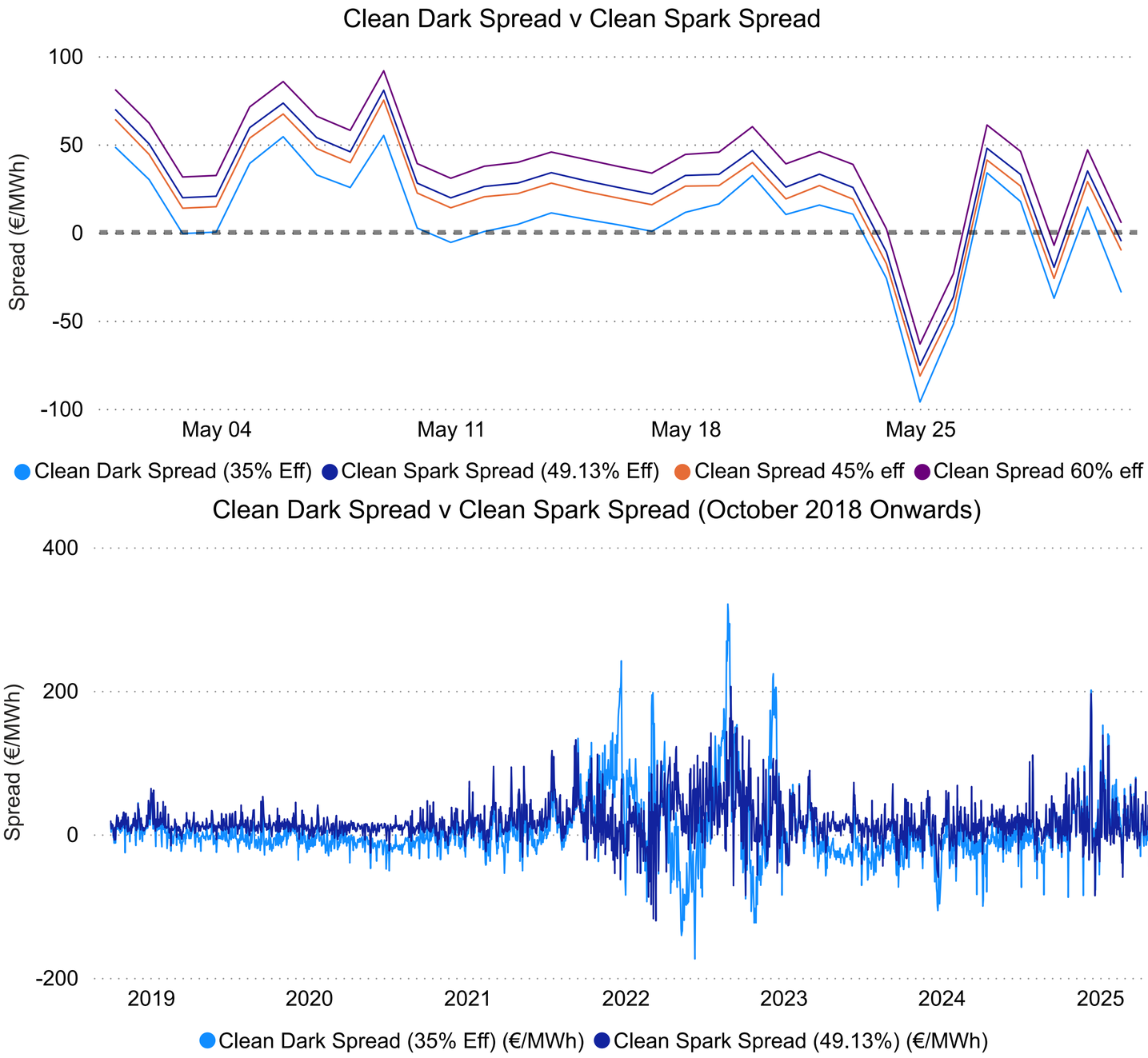
Carbon prices averaged €71/tonne, with an 11% increase on average from last month driven by low wind output.

Carbon prices are heavily reliant on wind output levels. However, with above normal temperatures this reduces power-for-heating requirements across Europe and limits stronger gains across the scheme.

Spark Spreads
May 2025

Clean Dark Spread indicates the average revenue a coal power station can expect from generating a unit of electricity during 'baseload' operation, after fuel and carbon costs.

Clean Spark Spread indicates the average revenue a gas power station can expect from generating a unit of electricity during 'baseload' operation, after fuel and carbon costs.



Clean Dark Spread vs Clean Spark Spread

As expected, gas proved to be more profitable than coal during the month.

Clean Spark Spread remained generally positive throughout the entire duration. However, there were a few occurrences of negative Spark Spread on periods after the 25 May. This is attributed to strong wind generation and weekend demand. With a minimum DAM price of -€23.50/MWh on the 25 May and an estimated Short-run marginal cost for a CCGT (49.13% Eff) of €82/MWh, the theoretical Spark Spread would therefore be -€105.50/MWh.