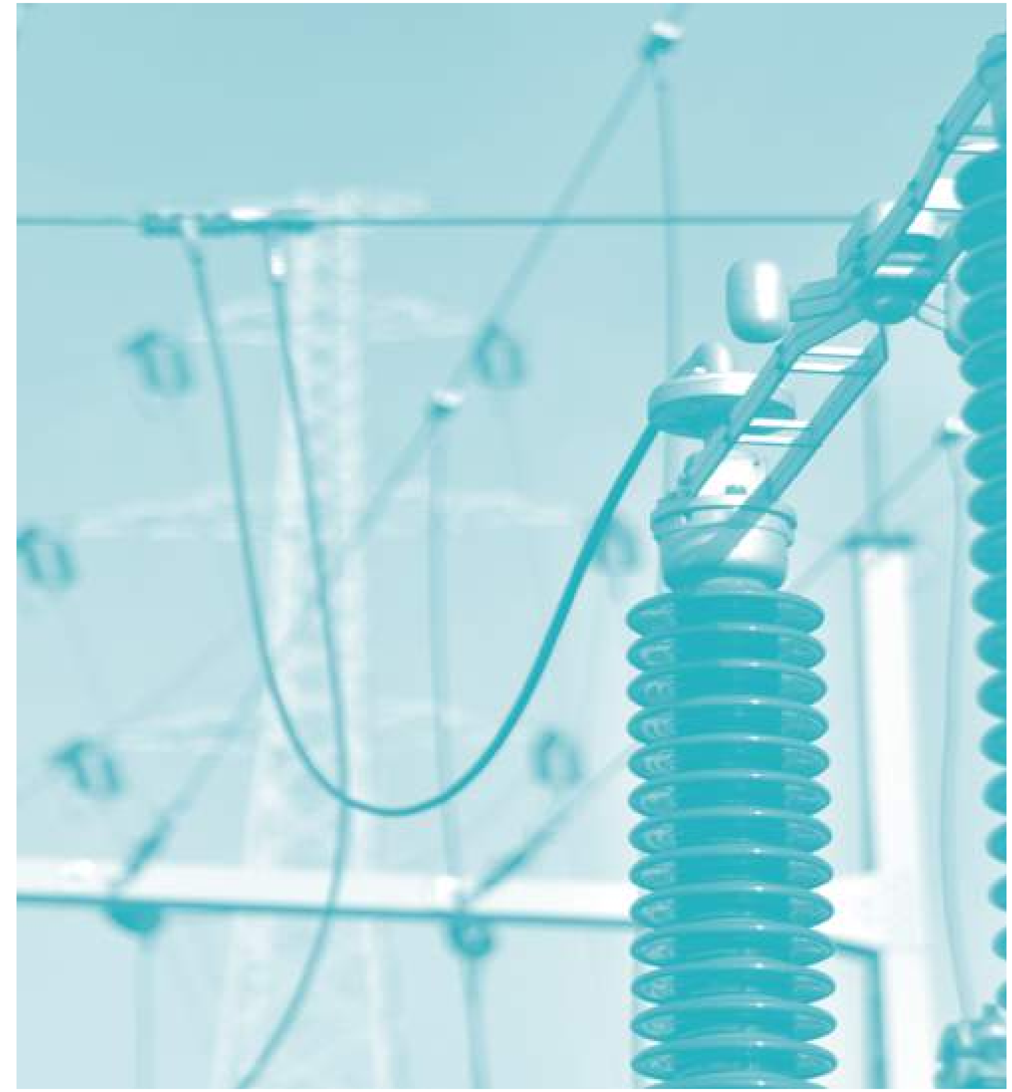
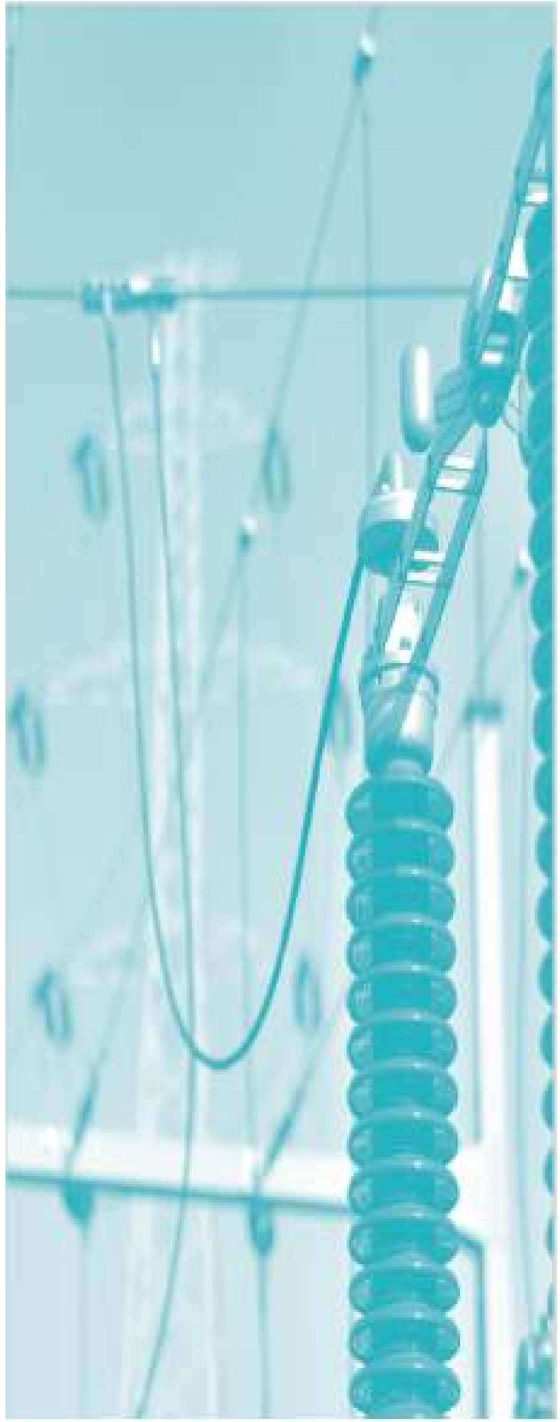




Energy Market Monitoring Report

April 2025

SEM committee



Market Results

Summary Dashboard

SEM committee

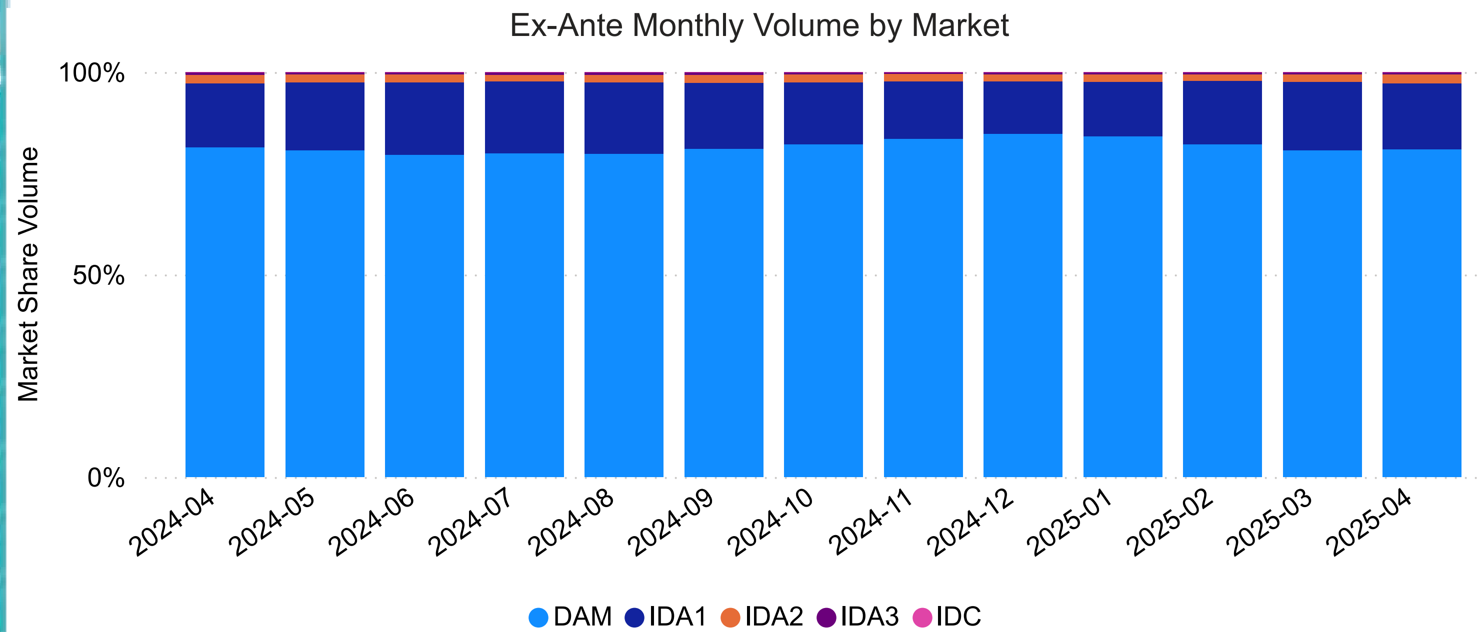
Monthly Averages	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25
DAM (€/MWh)	88.52	107.75	107.74	110.94	100.44	112.73	122.9	146.14	136.99	167.51	140.85	131.8	111.11
% Change from previous month	2%	22%	0%	3%	-9%	12%	9%	19%	-6%	22%	-16%	-6%	-16%
% Change from previous year	-30%	2%	-8%	15%	-6%	1%	-2%	19%	54%	68%	66%	52%	26%
Actual System Demand (MW)	4610	4356	4193	4279	4255	4467.76	4671	5085	5020	5256	5194	4951	4594
% Change from previous month	-5%	-6%	-4%	2%	-1%	5%	5%	9%	-1%	5%	-1%	-5%	-7%
% Change from previous year	3%	2%	0%	4%	2%	3%	3%	4%	3%	2%	5%	2%	0%
Actual Wind Generation (MW)	1496	894	1072	883	1437	1263	1668	1448	2040	1948	2509	1615	1278
% Change from previous month	-28%	-40%	20%	-18%	63%	-12%	32%	-13%	41%	-5%	29%	-36%	-21%
% Change from previous year	-3%	1%	22%	-33%	3%	-9%	22%	-20%	-17%	5%	25%	-22%	-15%
Gas Price p/therm	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
% Change from previous month	5%	7%	6%	-8%	13%	3%	14%	12%	0%	10%	0%	-18%	-16%
% Change from previous year	-29%	6%	5%	6%	2%	-5%	-6%	6%	32%	64%	94%	48%	18%
Carbon Price (€/Tonne)	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
% Change from previous month	9%	12%	-4%	-2%	5%	-8%	-2%	6%	0%	13%	0%	-10%	-6%
% Change from previous year	-30%	-16%	-20%	-23%	-17%	-21%	-22%	-12%	-7%	16%	36%	18%	1%
Coal Price ($/tonne)	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
% Change from previous month	6%	-10%	3%	-3%	15%	-5%	4%	1%	-6%	-4%	-6%	-5%	4%
% Change from previous year	-14%	-11%	-3%	-5%	5%	-5%	-9%	-1%	-4%	1%	6%	-12%	-14%
EWIC % Import Periods	81.94%	84.98%	85.90%	94.59%	85.29%	81.53%	71.32%	78.30%	67.64%	67.88%	43.01%	55.18%	82.85%
EWIC % Export Periods	4.86%	0.67%	3.72%	1.11%	7.56%	5.52%	10.31%	9.03%	11.49%	10.18%	13.91%	2.66%	1.98%
EWIC % Not Flow Periods	13.19%	14.35%	10.38%	4.30%	7.15%	12.95%	18.37%	12.67%	20.87%	21.94%	43.08%	42.16%	15.17%
Moyle % Import Periods	87.40%	94.96%	92.47%	96.77%	80.71%	91.98%	81.08%	82.47%	81.55%	78.53%	64.62%	79.24%	77.92%
Moyle % Export Periods	12.50%	5.27%	7.53%	3.23%	10.44%	7.60%	18.65%	17.50%	18.41%	21.27%	22.43%	6.16%	21.84%
Moyle % Not Flow Periods	0.10%	0.03%	0.00%	0.00%	8.84%	0.42%	0.28%	0.03%	0.03%	0.20%	12.95%	14.60%	0.24%
Greenlink % Import Periods	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68.97%	88.63%	80.14%
Greenlink % Export Periods	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.04%	9.49%	10.35%
Greenlink % Not Flow Periods	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.99%	1.88%	9.48%

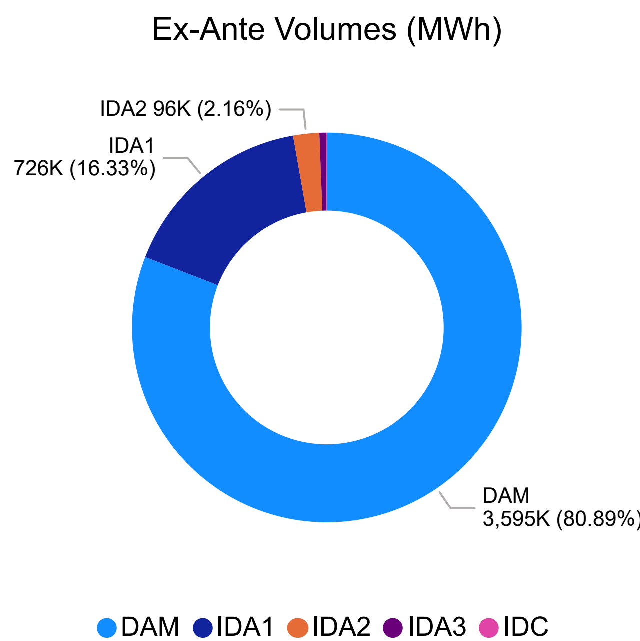
Market Volumes April 2025

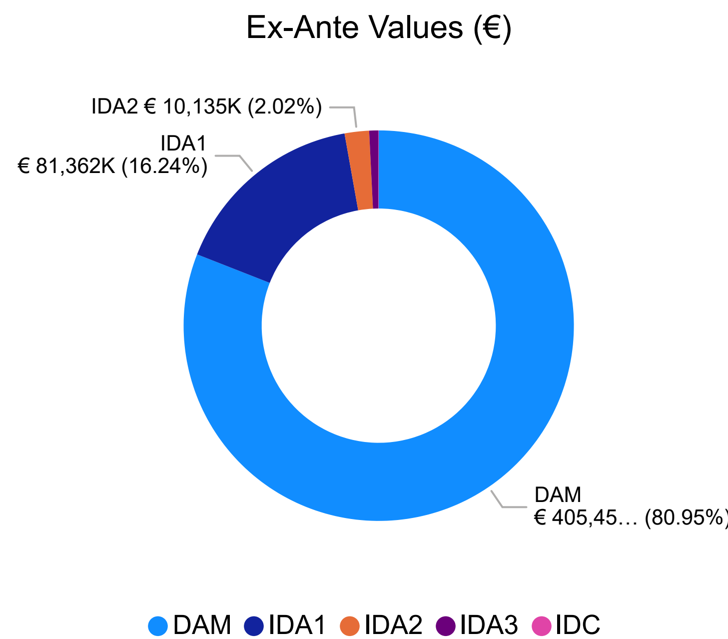
Daily Average Volume	MWh
DAM	119,849
IDA1	24,202
IDA2	3,202
IDA3	848
IDC	70

Total Monthly Volume	MWh
DAM	3,595,462
IDA1	726,068
IDA2	96,073
IDA3	25,447
IDC	1,827
Total	**4,444,877**

Total Market Value	€
DAM	€ 405,451,557
IDA1	€ 81,361,709
IDA2	€ 10,134,679
IDA3	€ 3,716,057
IDC	€ 211,740
Total	**€ 500,875,742**







SEM committee

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 April 2025

€ 111.11
Average DAM Price

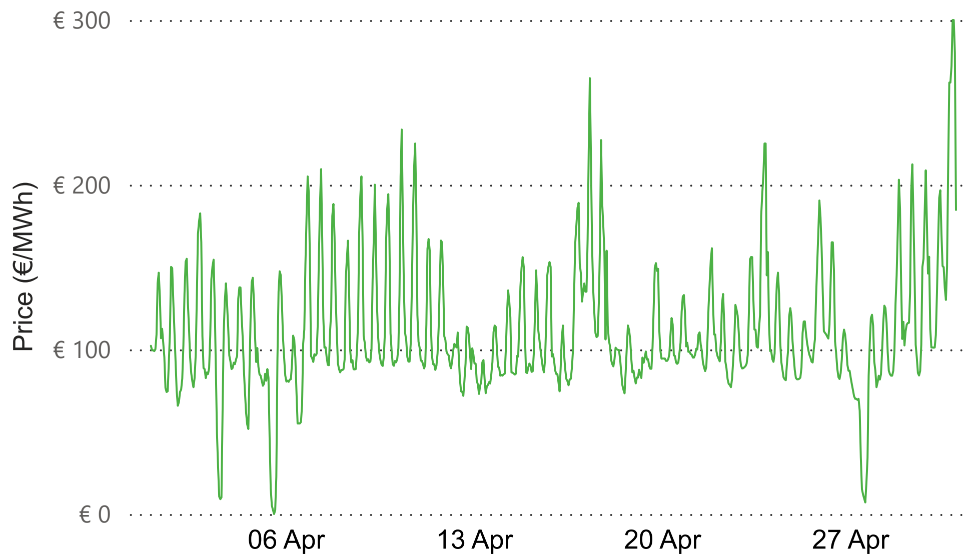
€ 0.00
Min DAM Price

€ 300.00
Max DAM Price

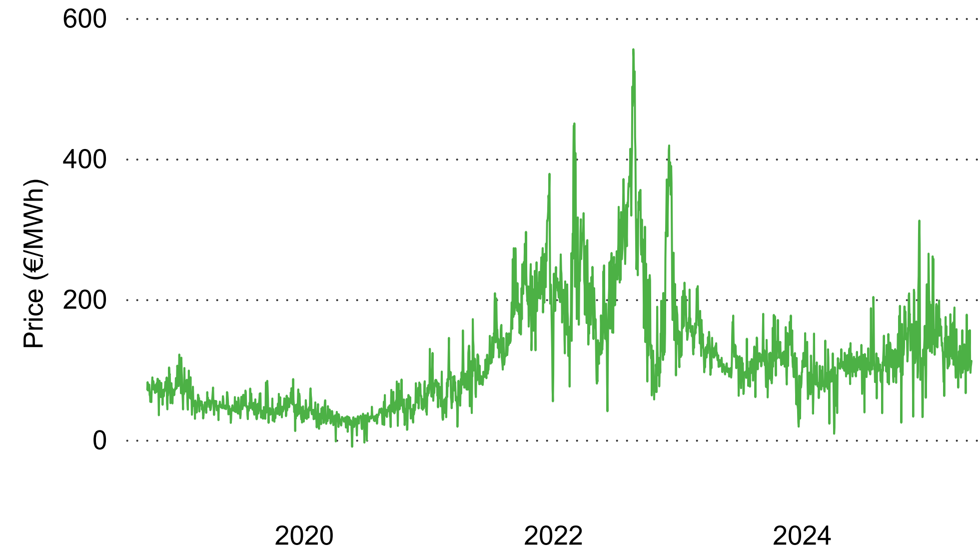
The most frequent price range for April was between €80 and €120.

SEM committee

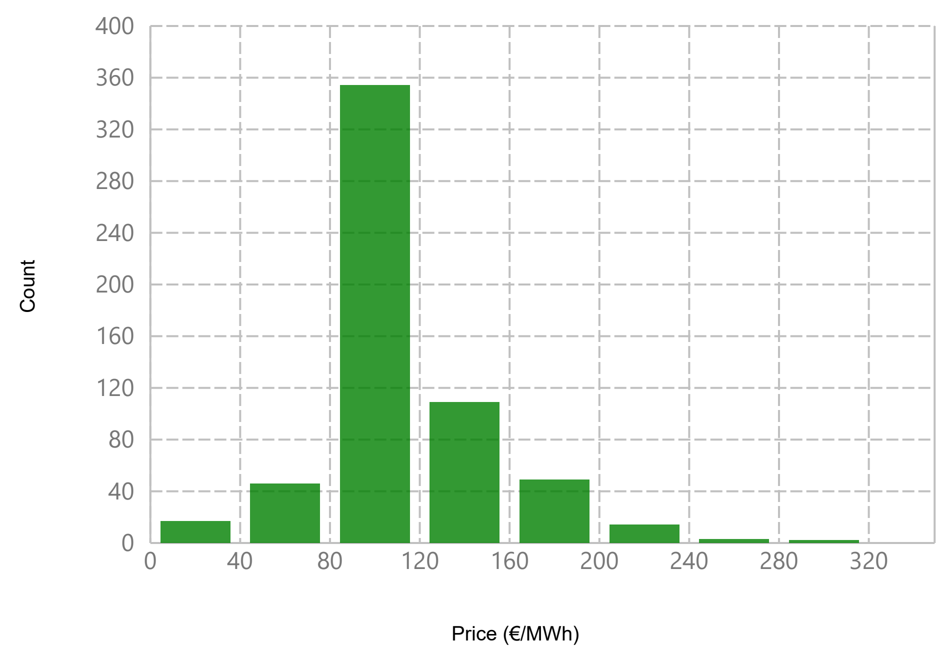
DAM Prices



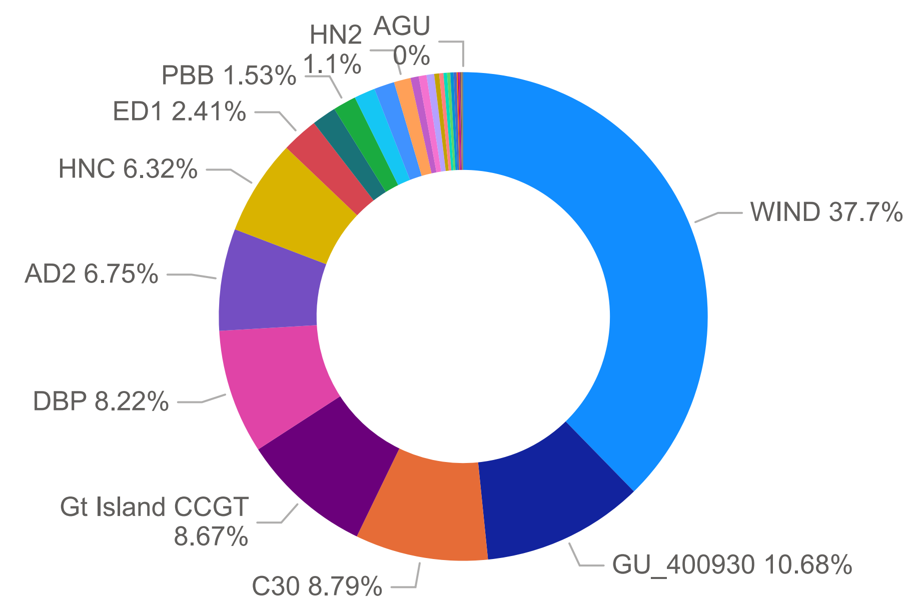
Historic Daily Average DAM Prices



Histogram of DAM Prices



DAM Sell Side Generator Order Results



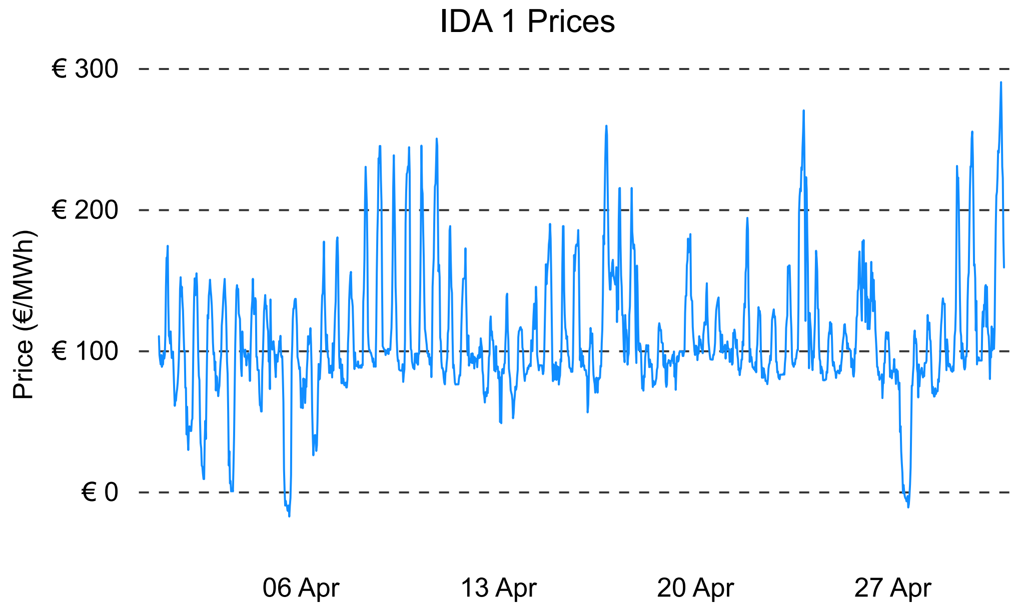
Intraday Market April 2025

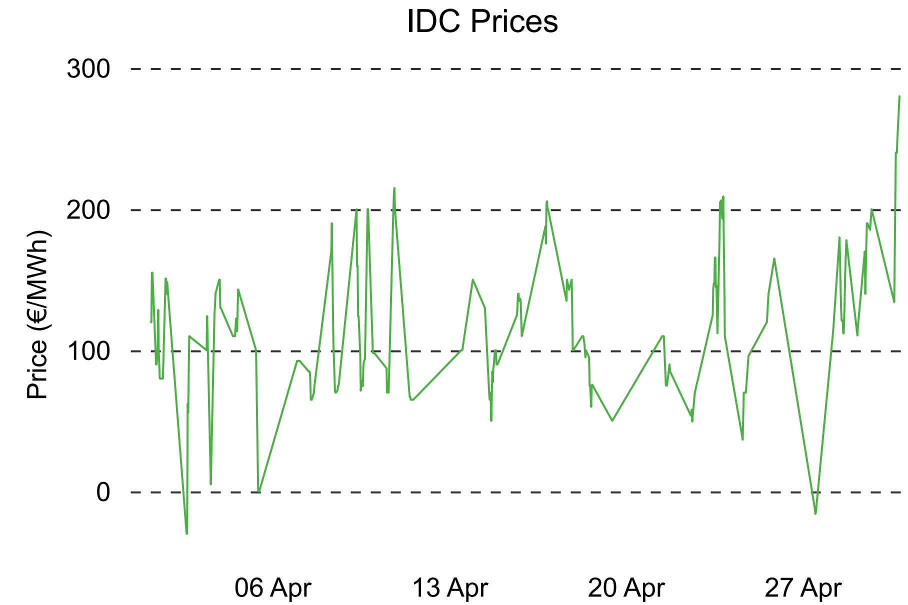
€ 108.10
Average IDA1 Price

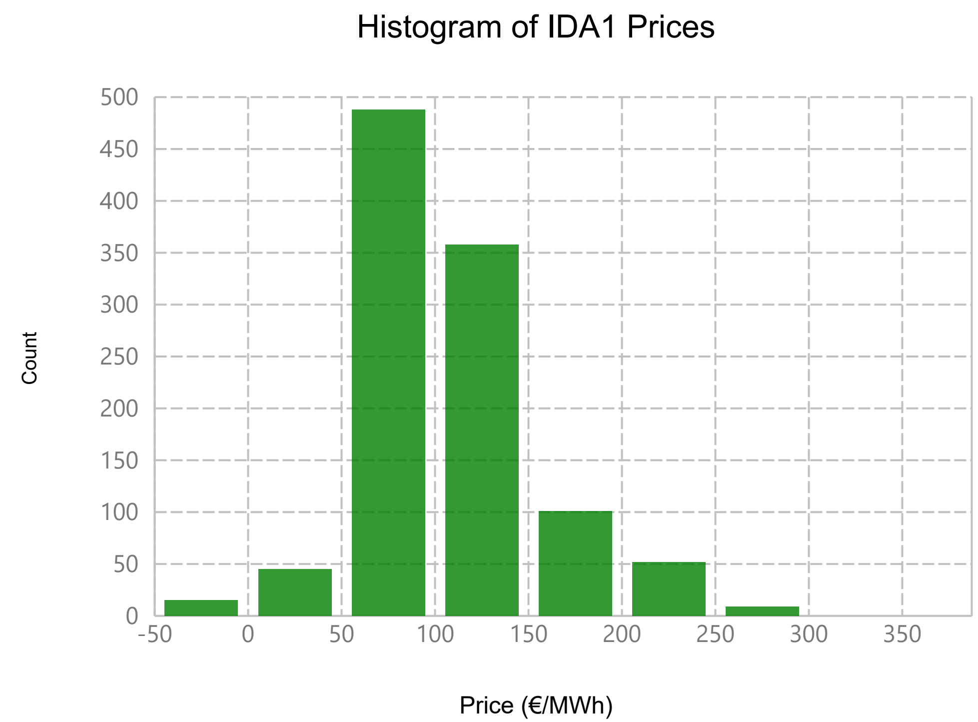
-€ 17.79
Min IDA1 Price

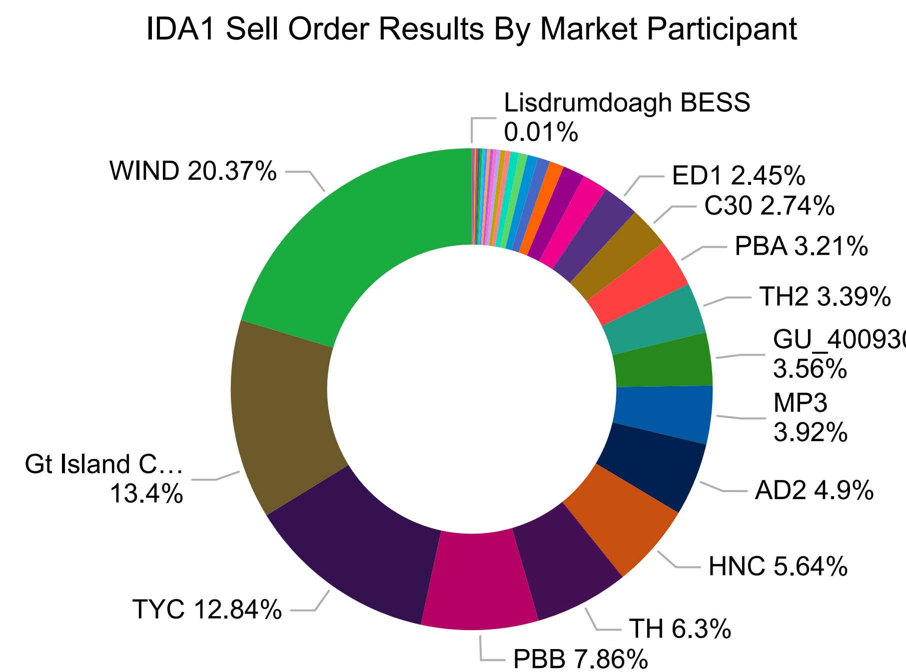
€ 290.00
Max IDA1 Price

The most frequent price range for April was between €50 and €100.









SEM vs GB DAM April 2025

SEM Day Ahead Price

€ 111.11
Average DAM Price

€ 0.00
Min DAM Price

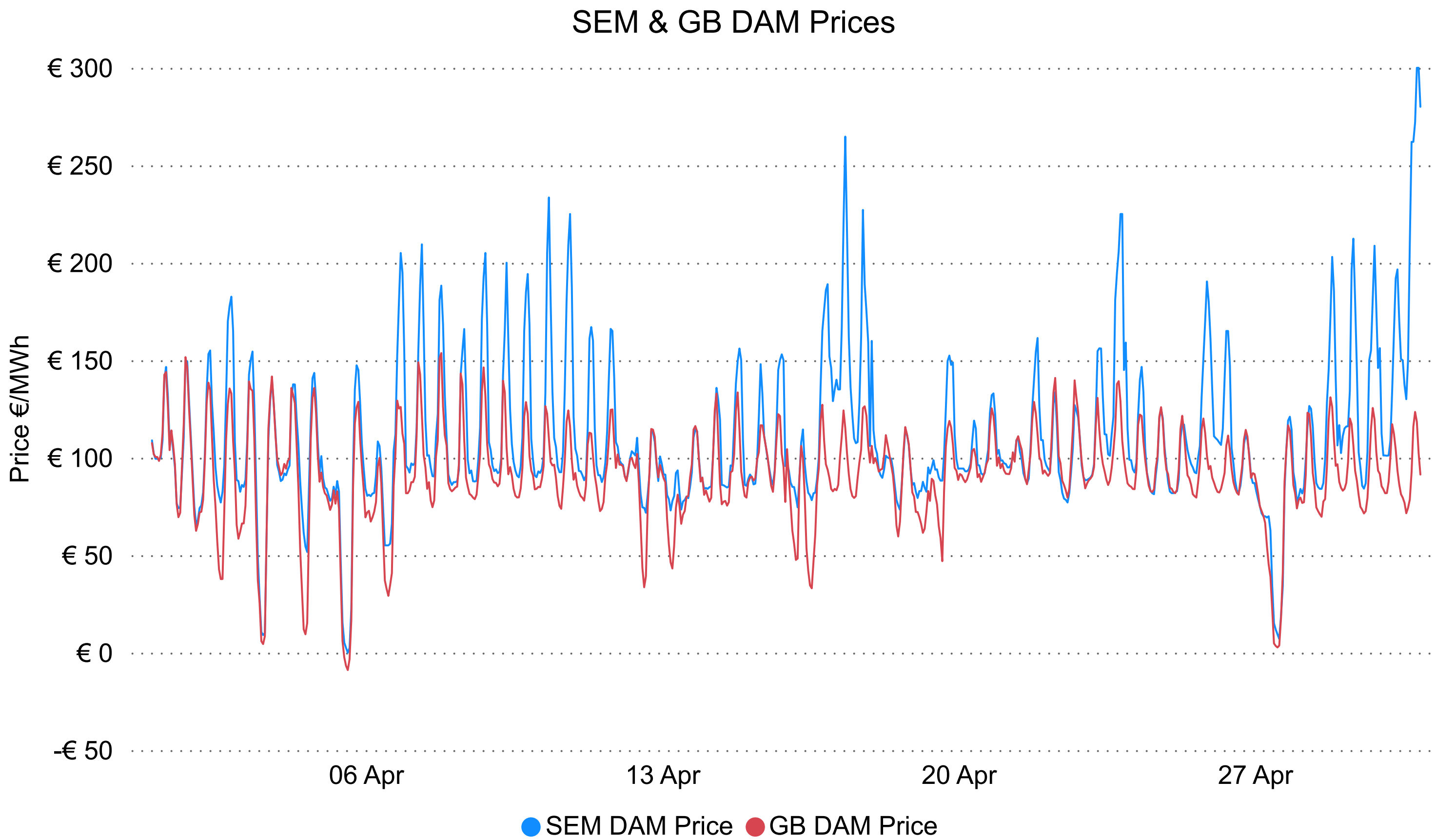
€ 300.00
Max DAM Price

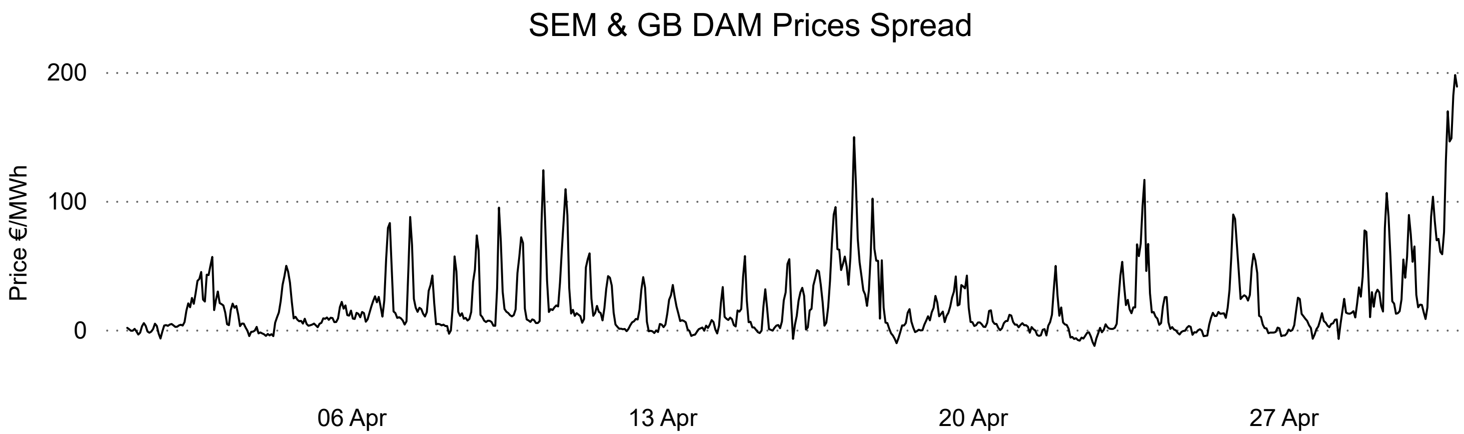
GB Day Ahead Price

€ 91.69
Average Price

-€ 8.95
Min Price

€ 153.66
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.

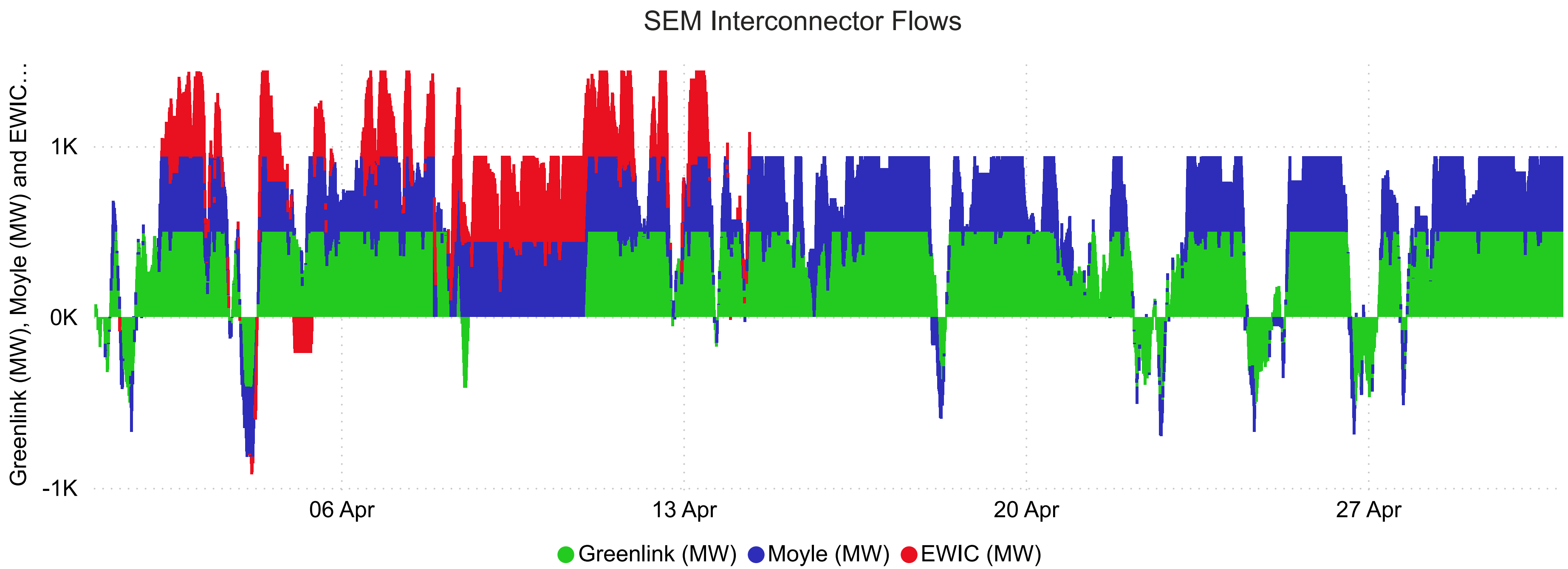
Periods of significant spreads between the two markets are generally correlated with periods of very low wind in the SEM.

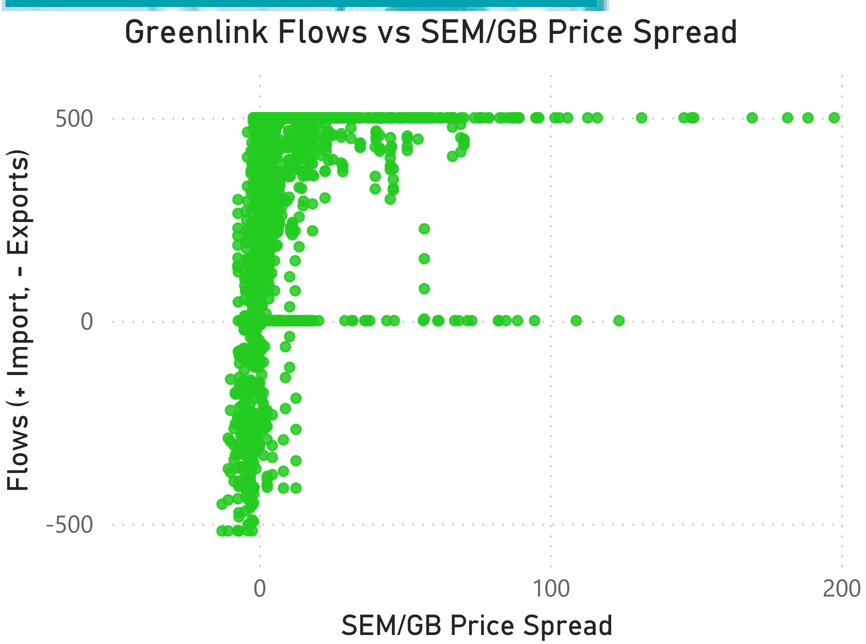
The MMU is investigating this matter further and will come back to the SEMC in the foreseeable future with more information on this front.

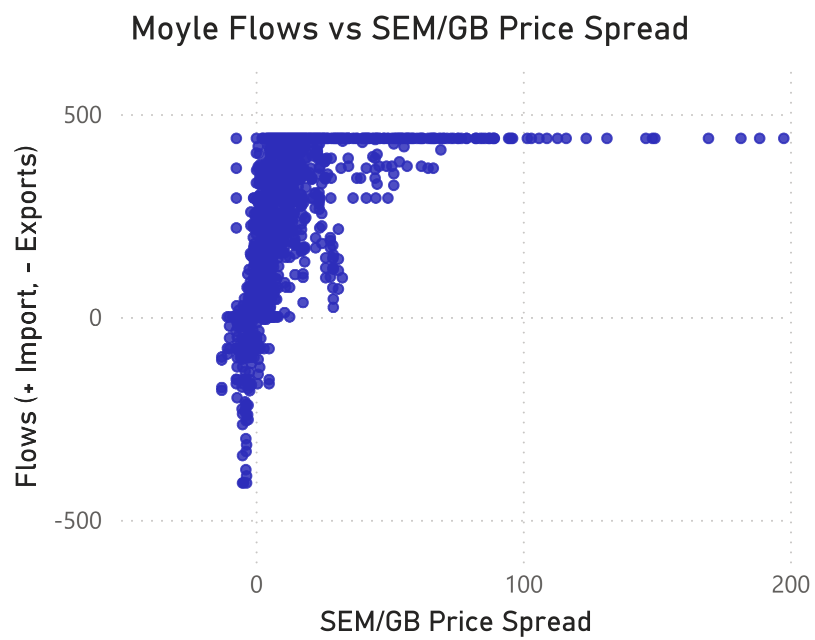
SEM Interconnectors April 2025

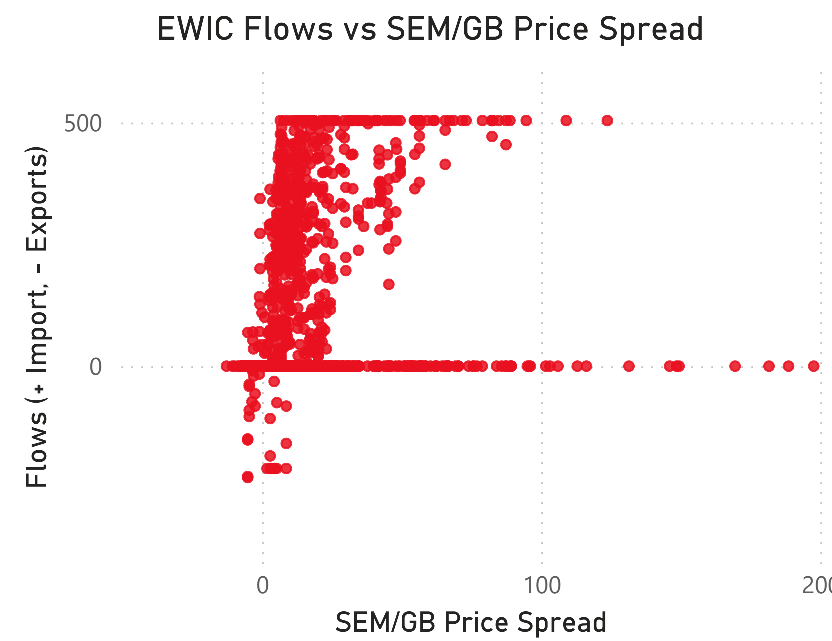
Due to higher average day-ahead prices in the SEM compared to GB, interconnectors operated largely in a net import position.

Planned maintenance at the East-West Interconnector restricted interconnector capacity between GB and the SEM.





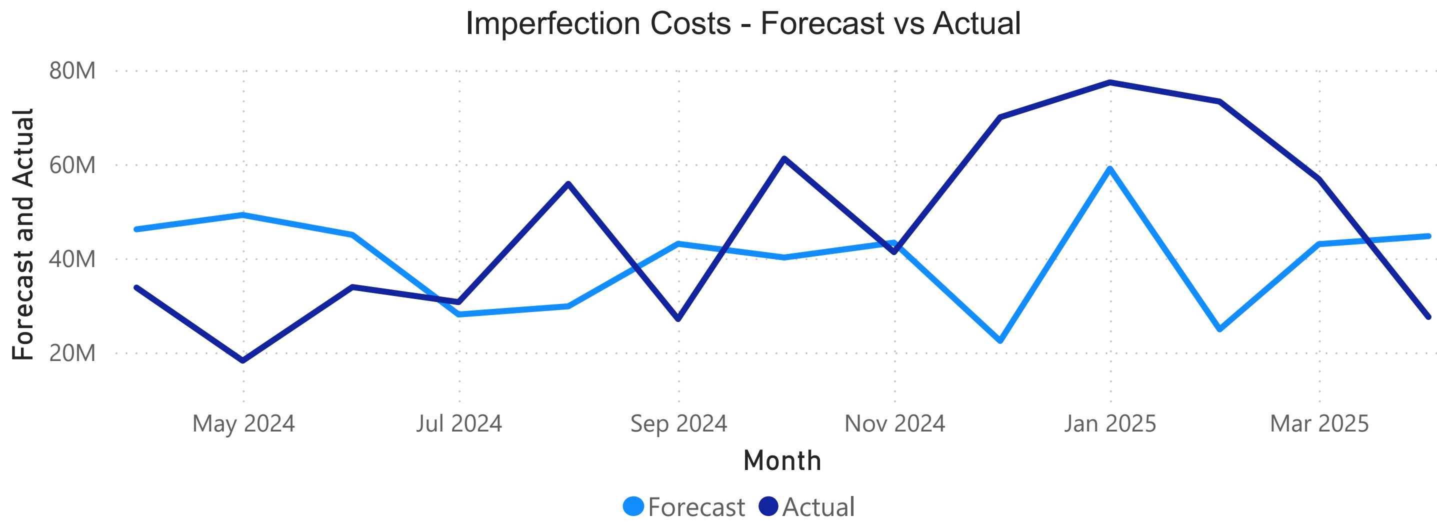




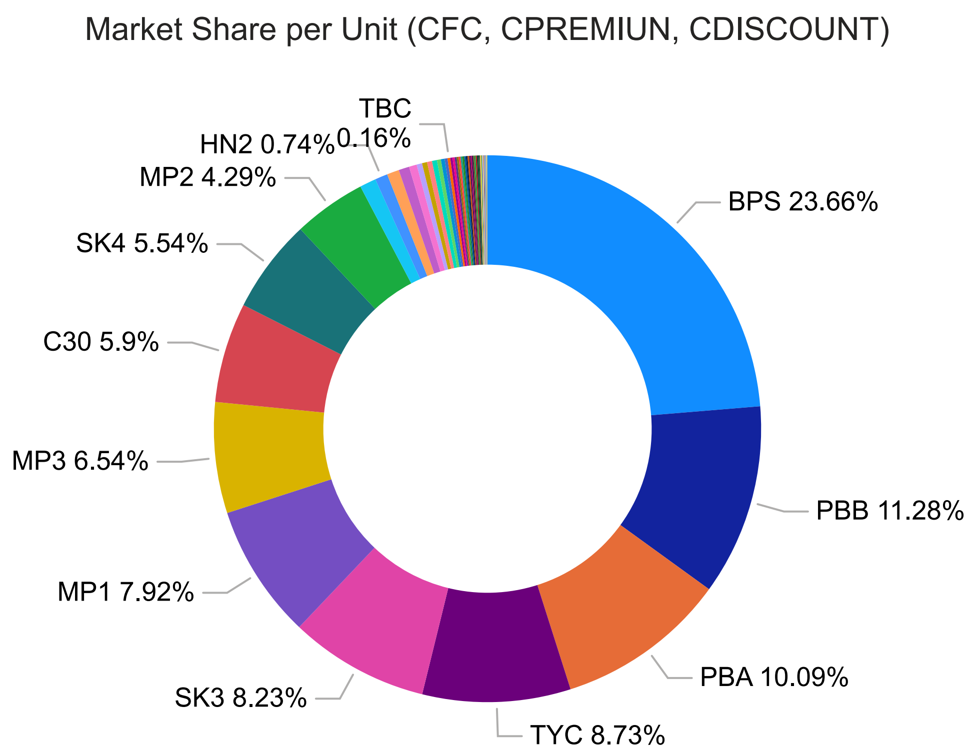
Balancing Market
April 2025

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	15,722.65
CAOOPO	154,831.81
CCURL	-1,259,179.22
CDISCOUNT	12,937,087.91
CFC	4,077,882.98
CPREMIUM	12,844,629.98
CTEST	-145,646.15
CUNIMB	-1,125,862.79
Total	**27,499,467.17**



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 followed by PBB (Poolbeg B).

Balancing Market
April 2025

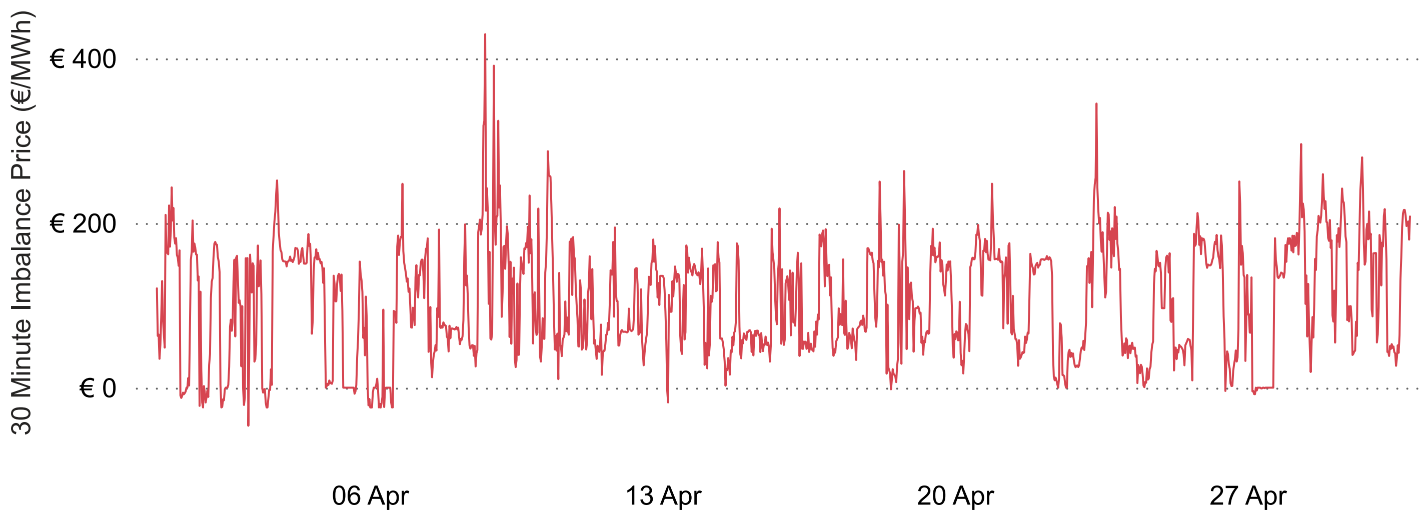
30 Minutes Imbalance Price

€ 103.39
Average Price

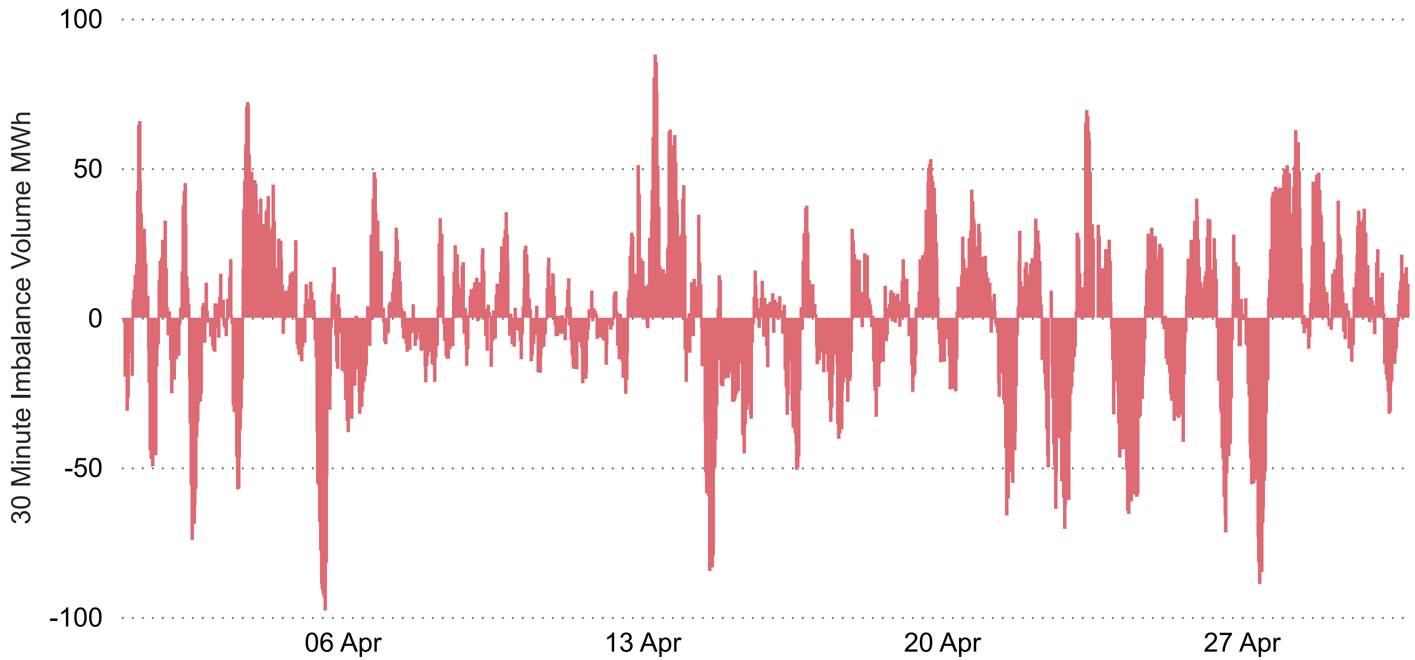
-€ 46.28
Lowest Price

€ 429.34
Highest Price

30 Minute Imbalance Prices



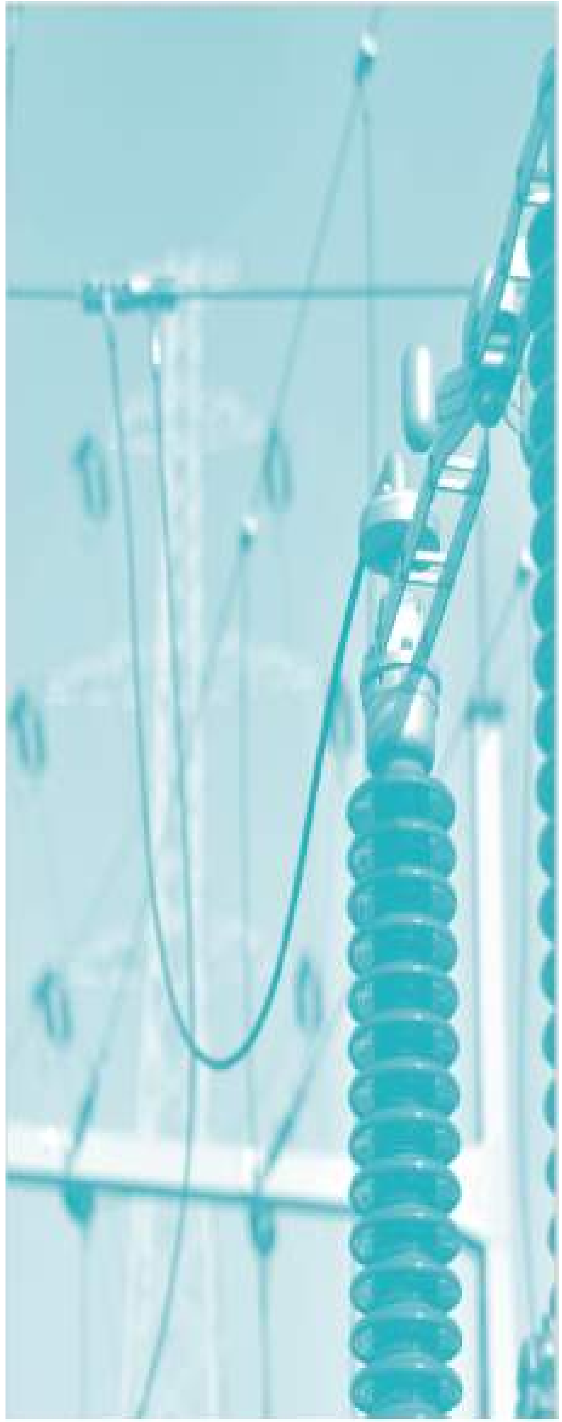
30 Minute Imbalance Volume



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 April 2025

SEM Demand

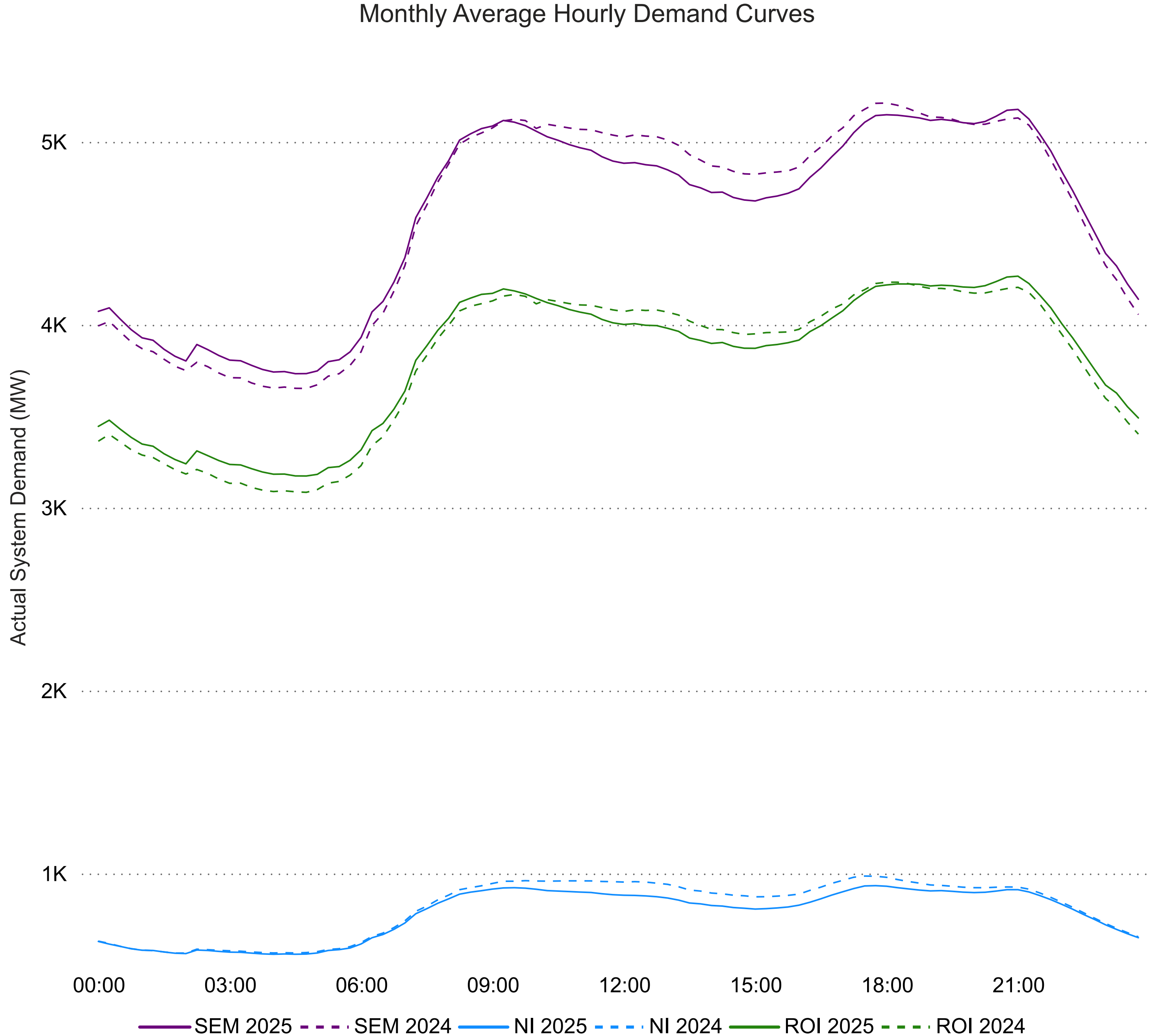
4,593.55 SEM Average 2025	4,603.78 SEM Average 2024
3,732.57 SEM Min 2025	3,651.97 SEM Min 2024
5,177.60 SEM Max 2025	5,212.20 SEM Max 2024

NI Demand

780.44 NI Average 2025	811.72 NI Average 2024
558.67 NI Min 2025	565.27 NI Min 2024
933.70 NI Max 2025	986.27 NI Max 2024

ROI Demand

3,813.12 ROI Average 2025	3,792.09 ROI Average 2024
3,173.33 ROI Min 2025	3,084.00 ROI Min 2024
4,265.73 ROI Max 2025	4,232.80 ROI Max 2024



SEM Demand

The graph indicates a 0.22% decrease in all-island demand compared to the same period last year.

NI demand experienced a 3.85% decrease compared to the same period last year.

ROI demand increased by 0.55% 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 rooftop solar generation and reduce demand from the grid.

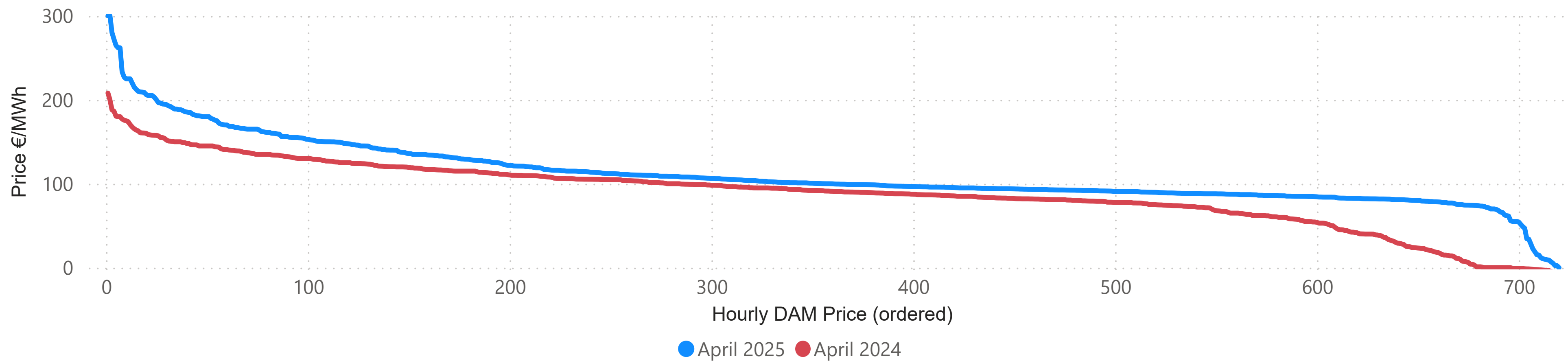
Duration Curves April 2025

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

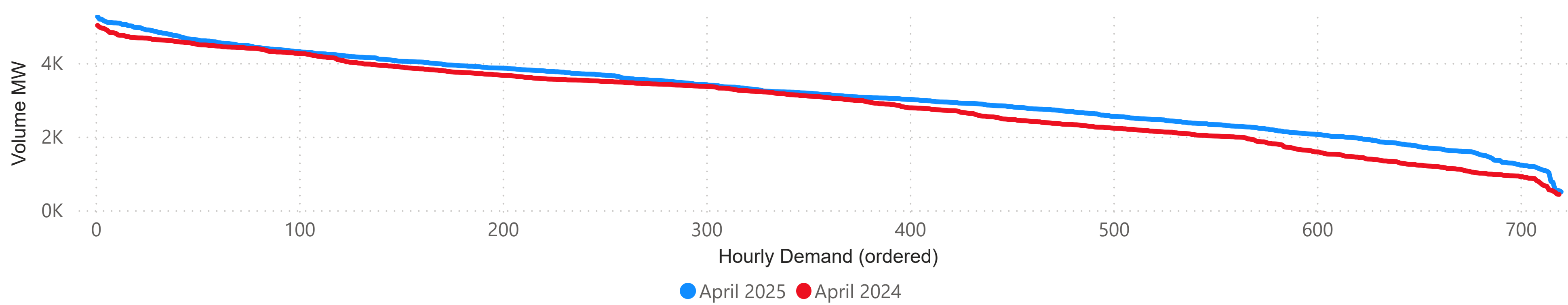
Residual Duration
The residual demand curve shows the ordered hourly demand level across the month which can't be met by renewable generation.

Price against Residual Demand
Shows the residual demand for each period relative to the DAM price for that period.

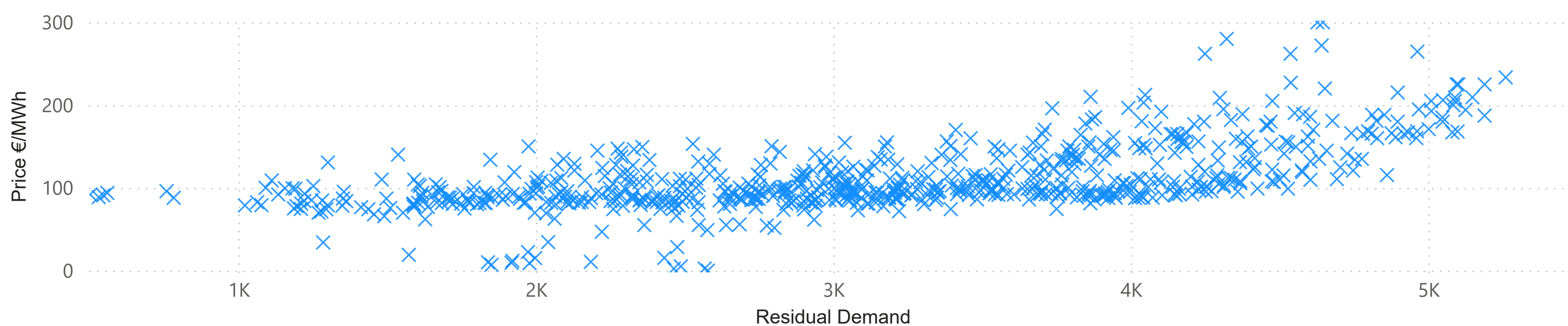
Price Duration Curve SEM



Residual Demand Duration Curve SEM



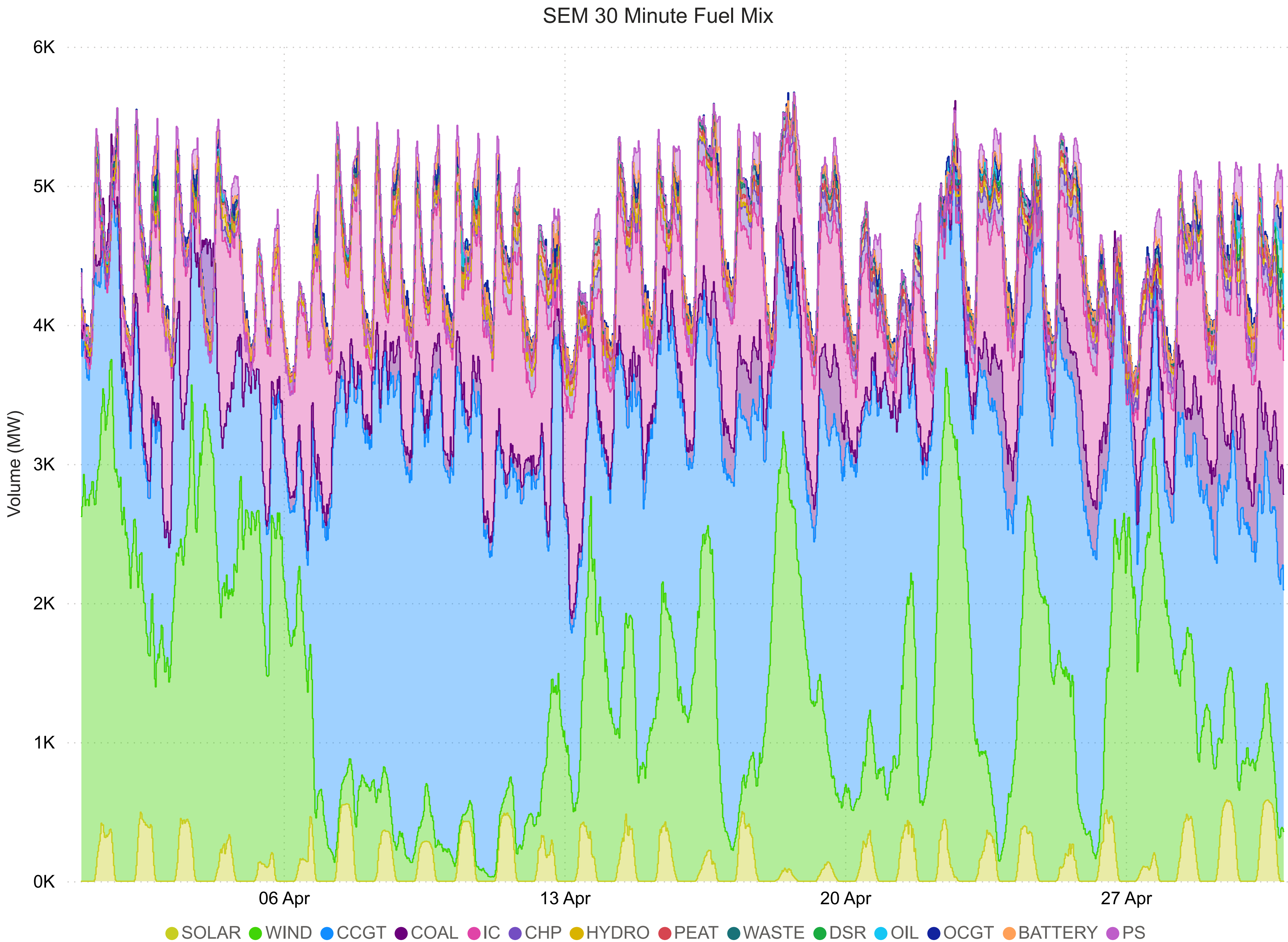
DAM Price against Residual Demand



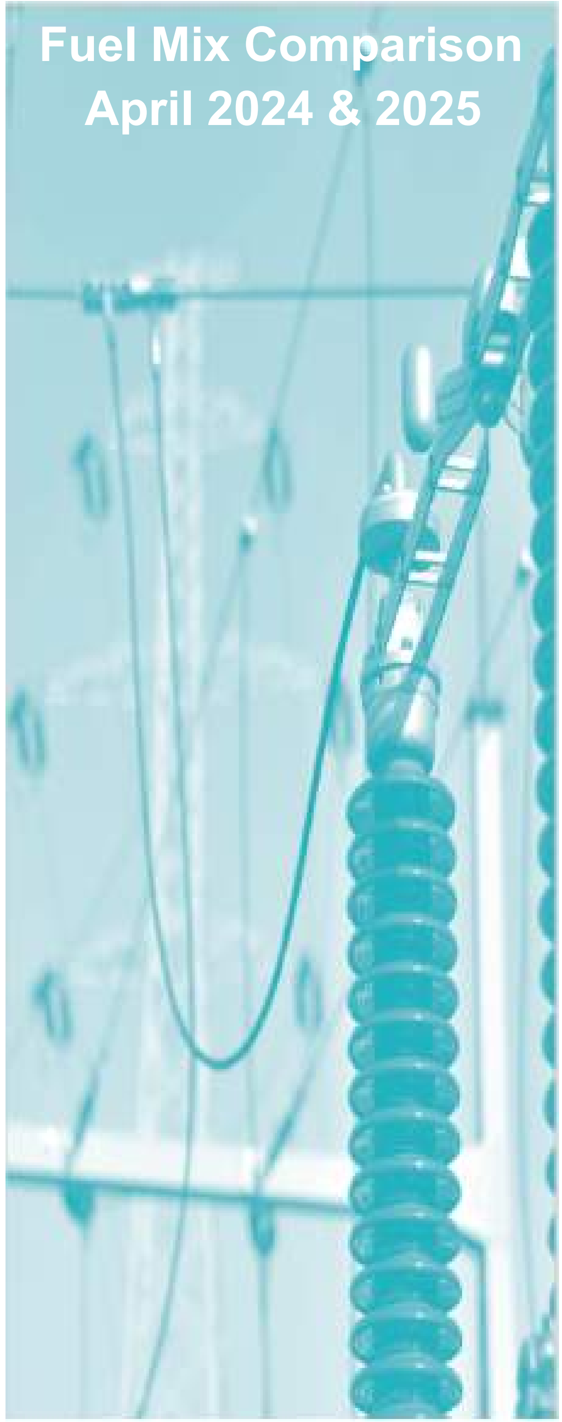
Fuel Mix April 2025

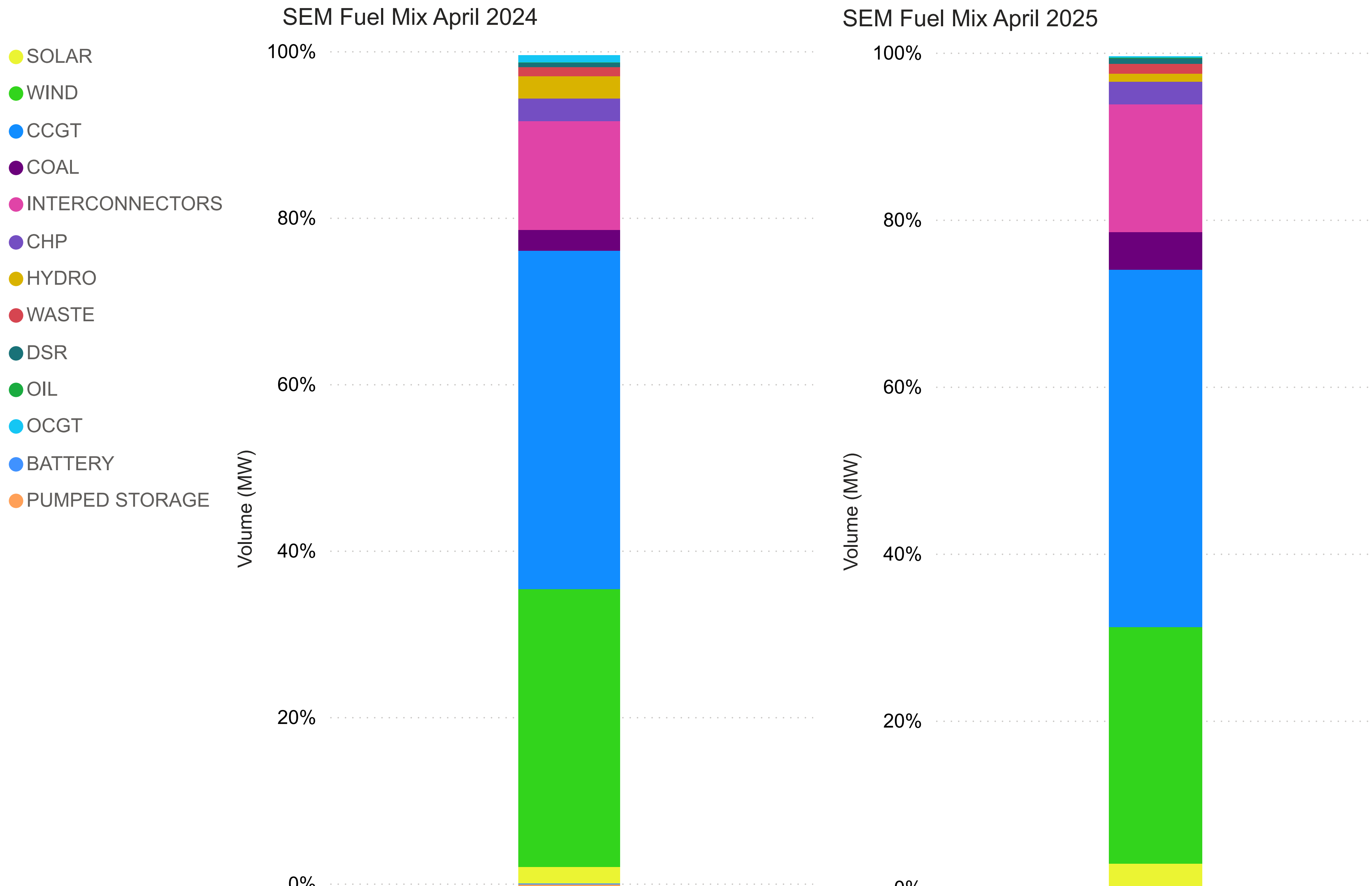
Fuel Type	Avg Monthly	Per. Monthly
CCGT	1936	42.6%
WIND	1282	28.2%
INTERCONNECTORS	691	15.2%
COAL	205	4.5%
SOLAR	129	2.9%
CHP	123	2.7%
PEAT	56	1.2%
WASTE	52	1.2%
HYDRO	45	1.0%
DSR	30	0.7%
OCGT	7	0.2%
OIL	4	0.1%
BATTERY	-7	-0.2%
PUMPED STORAGE	-13	-0.3%

Fuel Type	Max Monthly	Min Monthly
CCGT	3481	772
WIND	3432	31
INTERCONNECTORS	1492	-886
COAL	758	0
SOLAR	585	0
OCGT	264	0
OIL	219	0
PUMPED STORAGE	218	-230
BATTERY	198	-161
CHP	164	72
DSR	151	0
HYDRO	124	0
PEAT	110	0
WASTE	82	17



Fuel Mix Comparison April 2024 & 2025





North-South Tie Line April 2025

Average Flow NI to ROI (MW)

-244.53

Average Flow ROI to NI (MW)

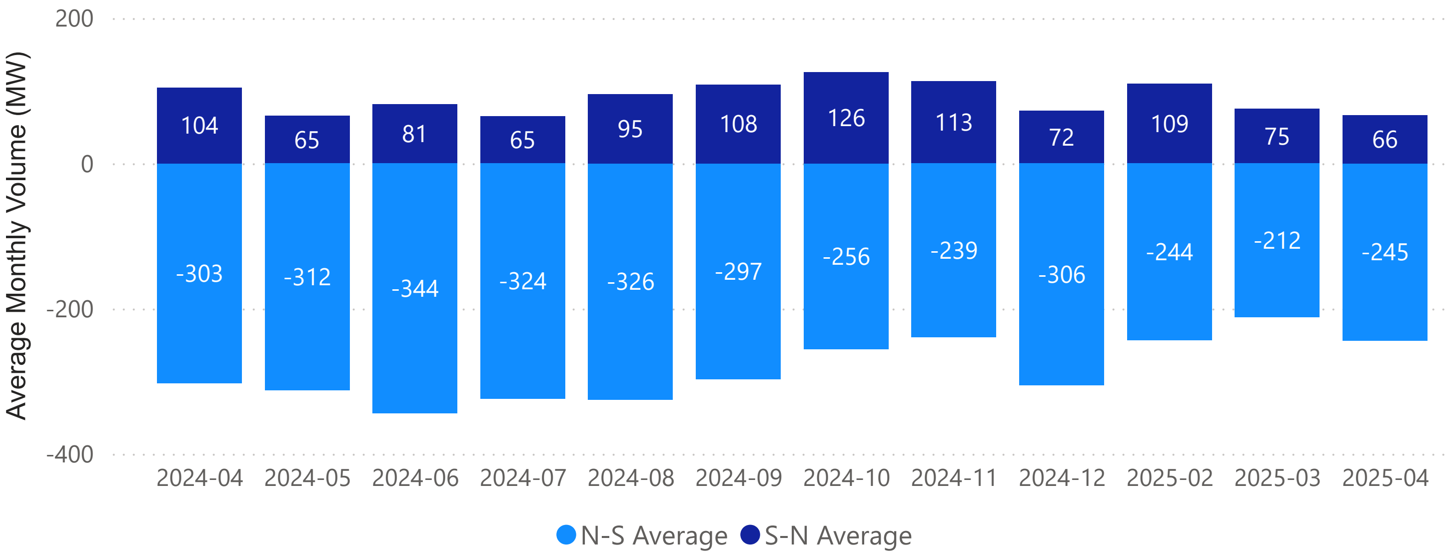
66.34

Average Net Flow NI to ROI (MW)

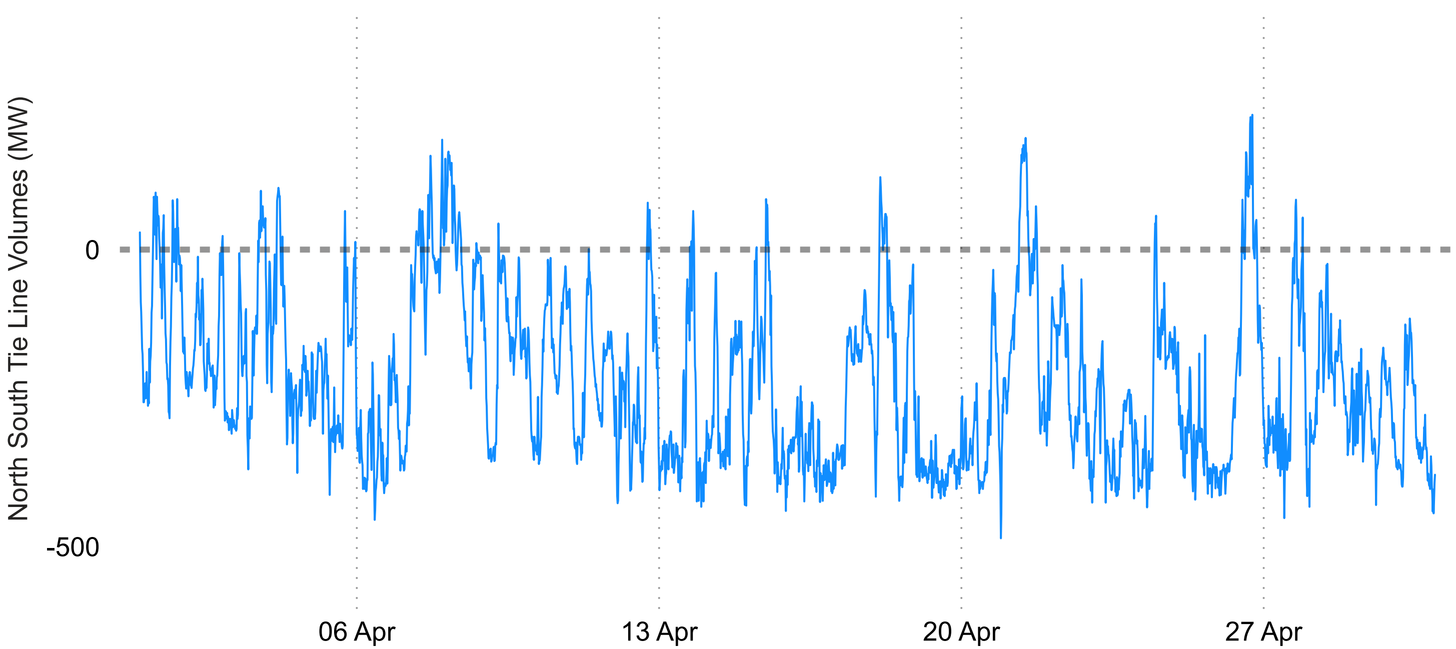
-218.79

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

Average Flows N-S Tie Line Long Term Trend



North South TIe Line Volumes 15 minute periods



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.

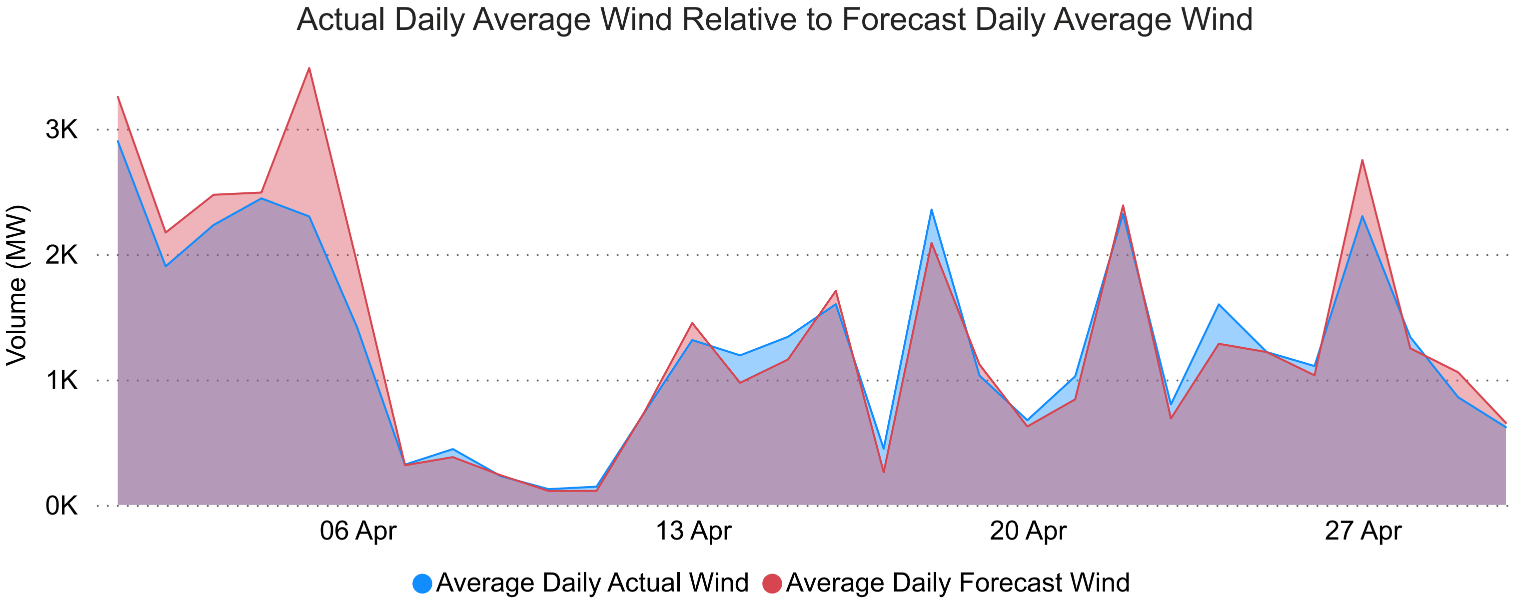
Wind Generation April 2025

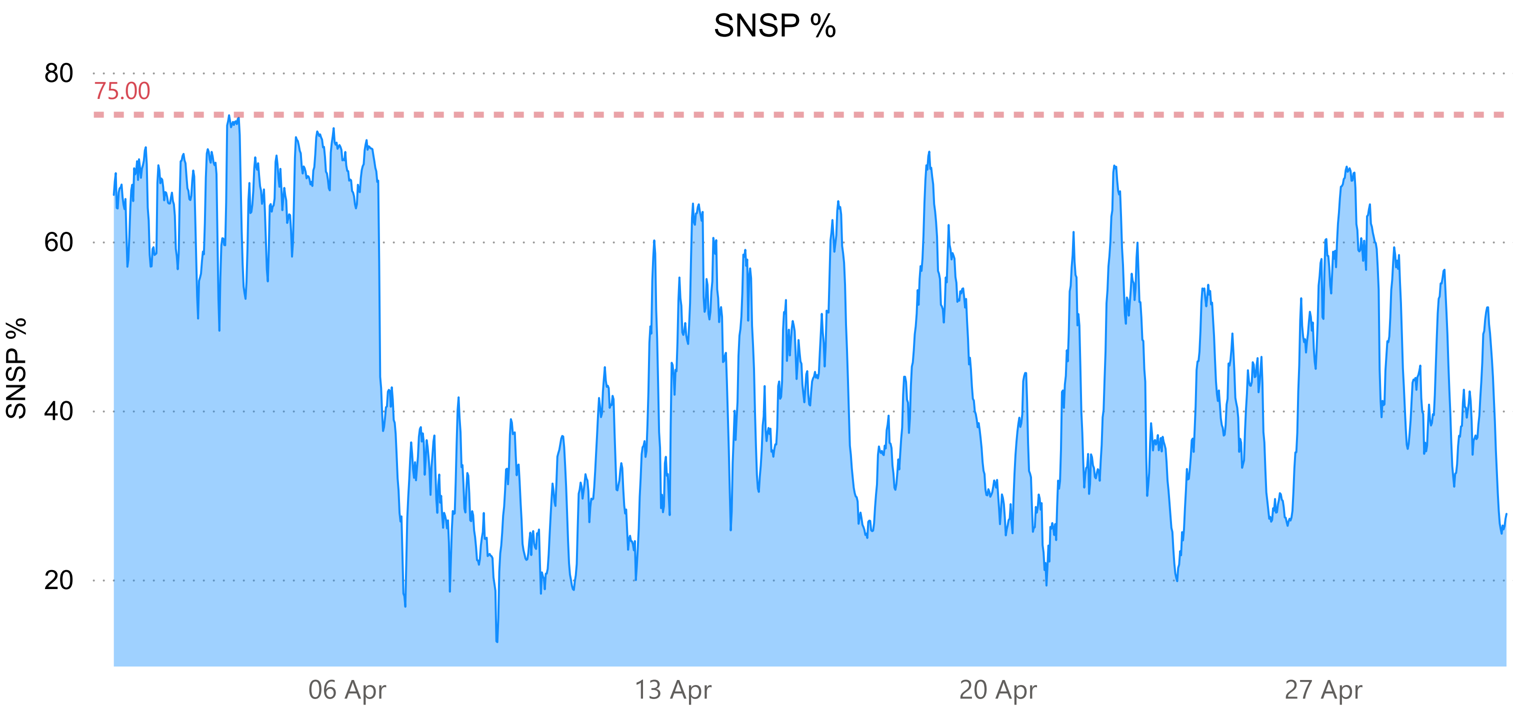
Average Daily Actual Wind (MW)
1,278

Average Daily Forecast Wind (MW)
1,341

Min SNSP%
12.59

Max SNSP%
74.94





Wind Generation

Average wind generation decreased by 21% from last month and by 15% compared to the same period last year.

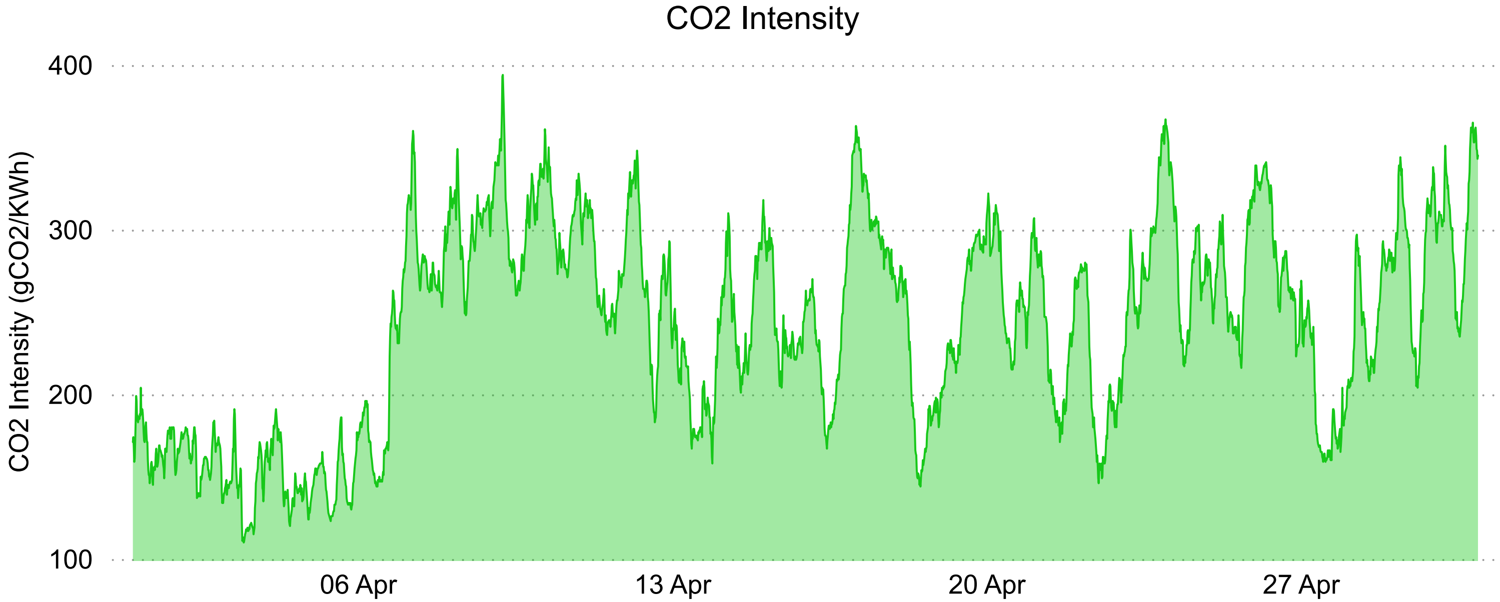
SNSP

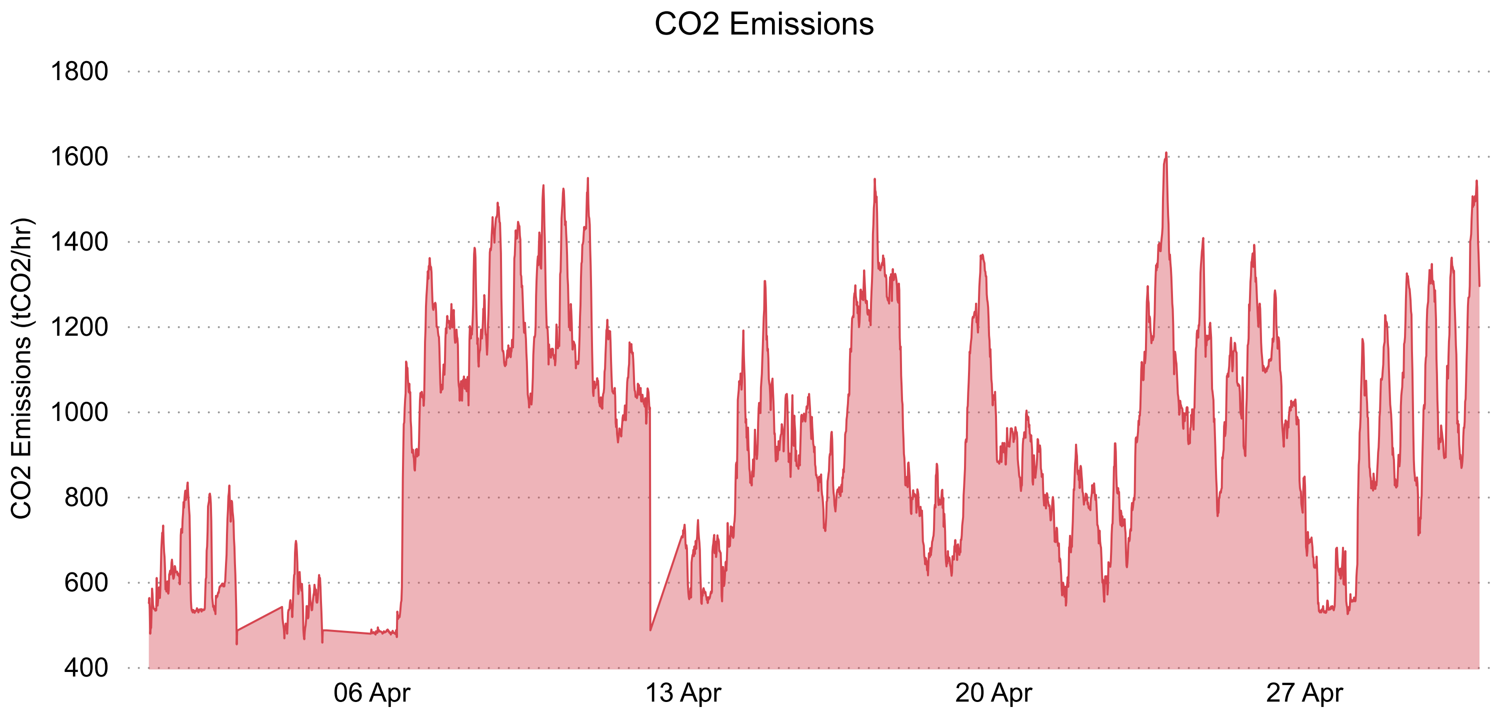
SNSP is closely linked to wind generation and as such follows the same trend across the month.

CO_2 April 2025

CO2 Intensity (gCO2/kWh)
242.00 Average
110 Lowest
394 Highest

CO2 Emissions (tCO2/hr)
943 Average
453 Lowest
1608 Highest



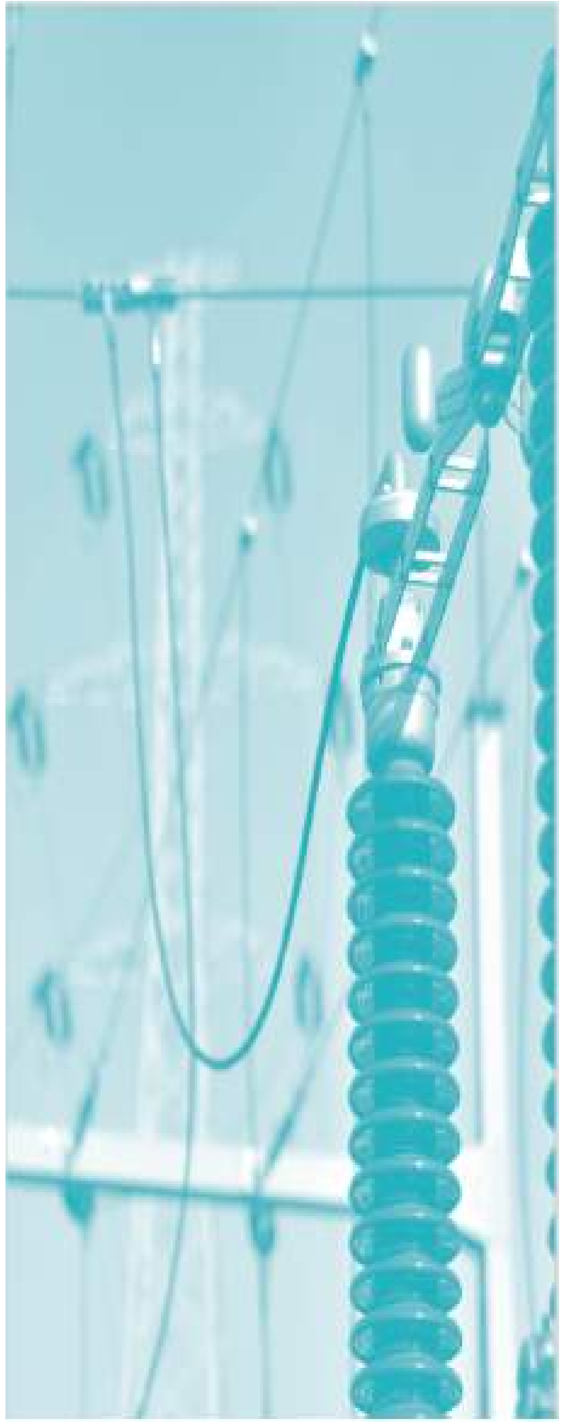


CO_2 Intensity

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.



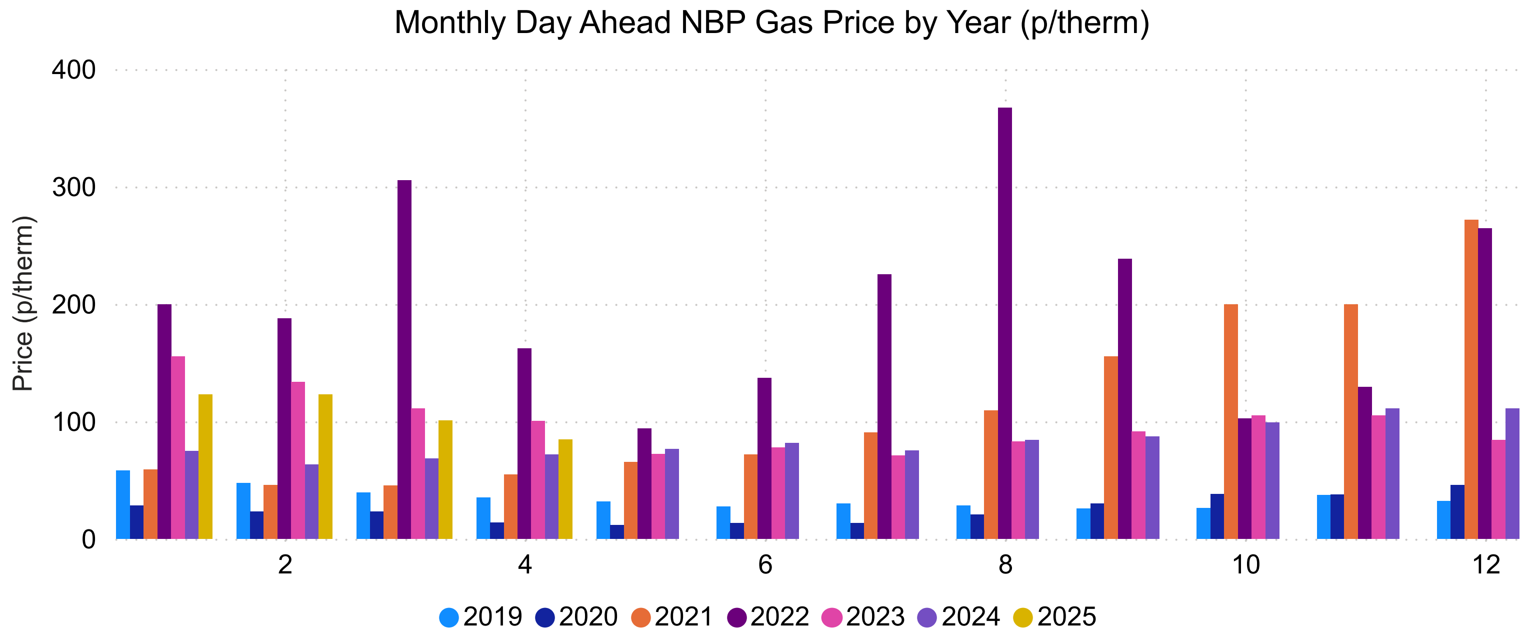
Fuel Costs and Spreads

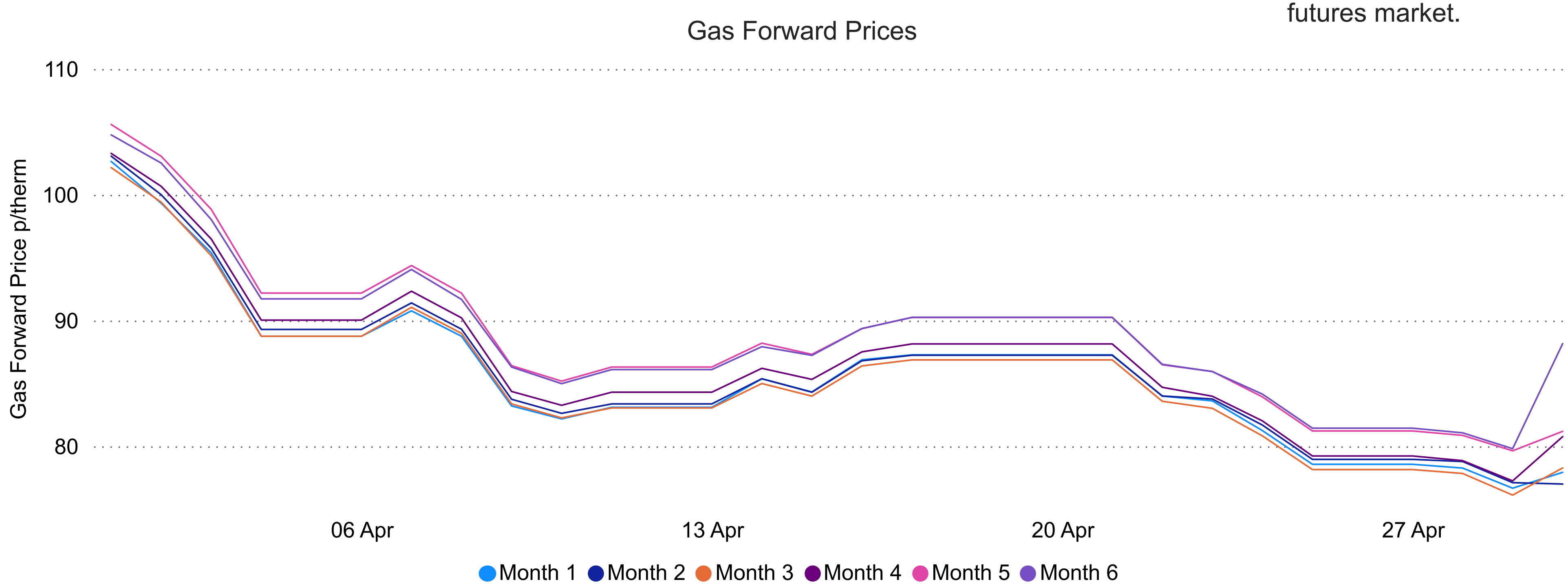
Gas Price April 2025

84.72
Monthly Average (p/therm)

76.35
Monthly Low (p/therm)

102.20
Monthly High (p/therm)





SEM committee

Gas Prices

There was a 16% decrease on average in Gas Prices compared to last month. Gas prices fell constantly throughout April to their 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 April 2025

Coal Prices Per Tonne

$101.46
Monthly Average

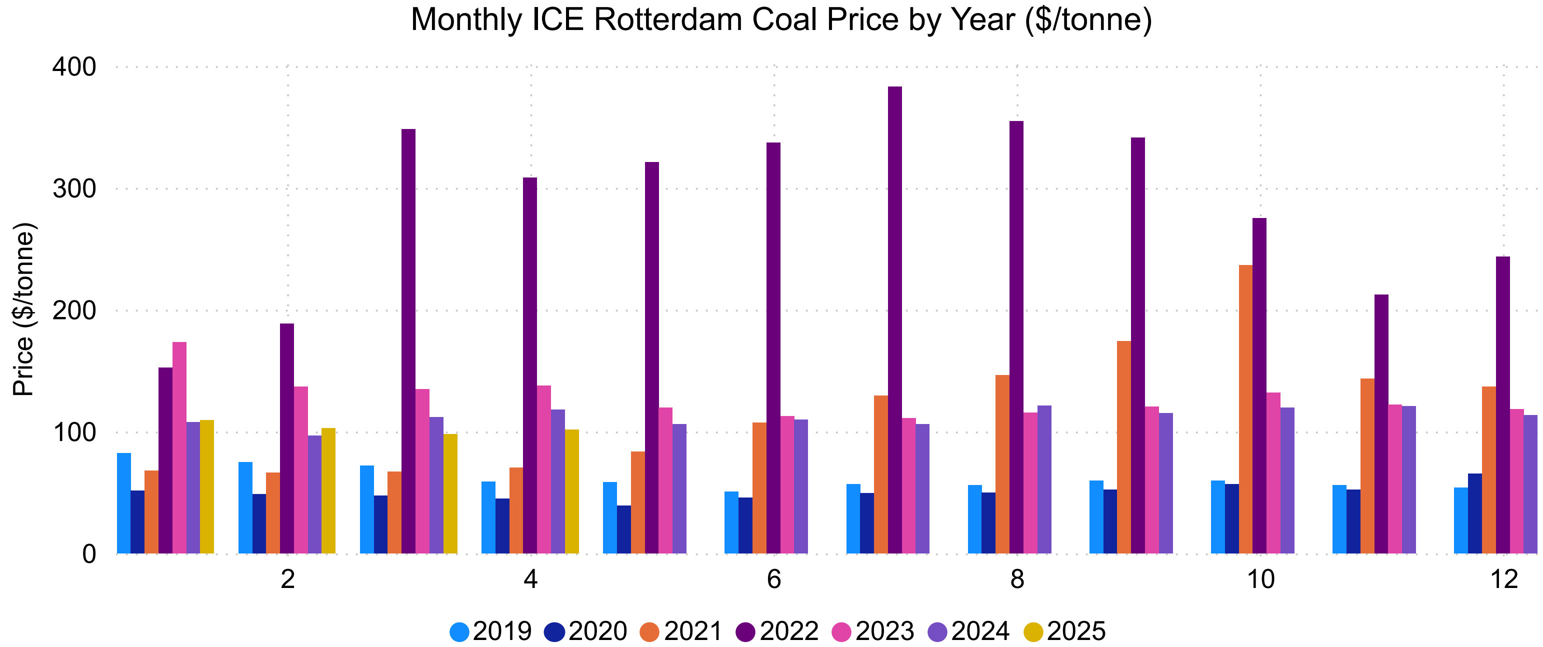
$92.20
Monthly Low

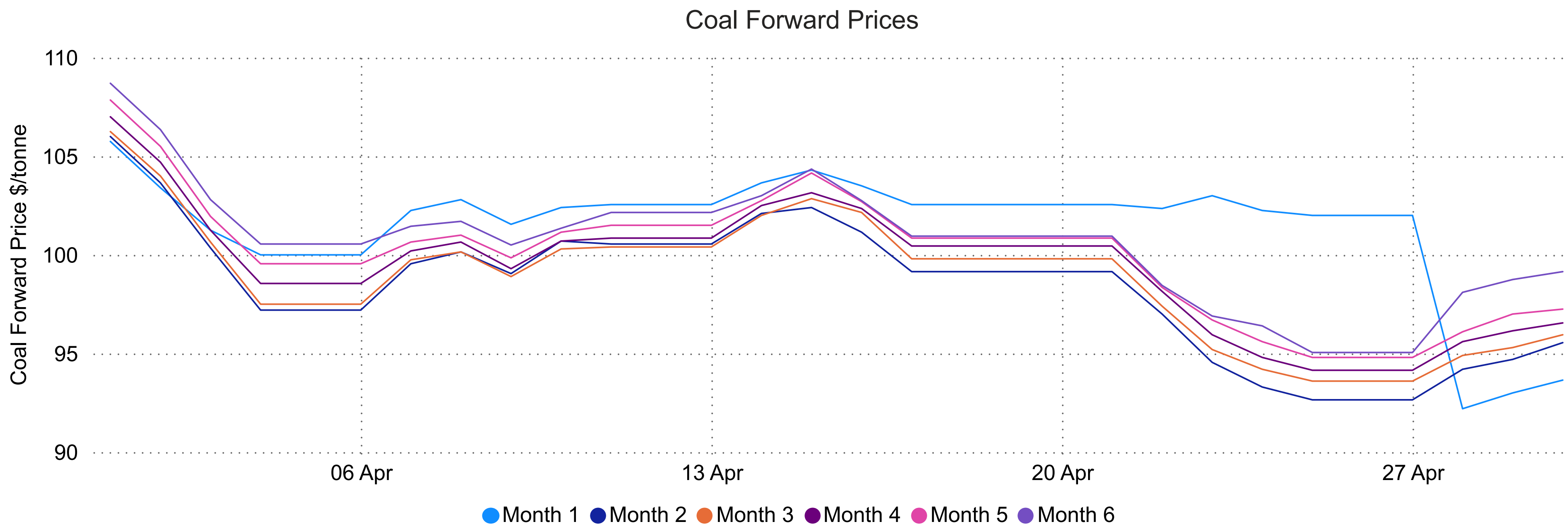
$105.75
Monthly High

SEM committee

Coal Prices

Coal prices averaged $101.46/tonne, increasing 4% from the previous month, however, this is a notable 14% decrease on the previous year.





Carbon Price
April 2025

EU Carbon Prices (€/tonne)

€ 63.96
Monthly Average

€ 60.00
Monthly Low

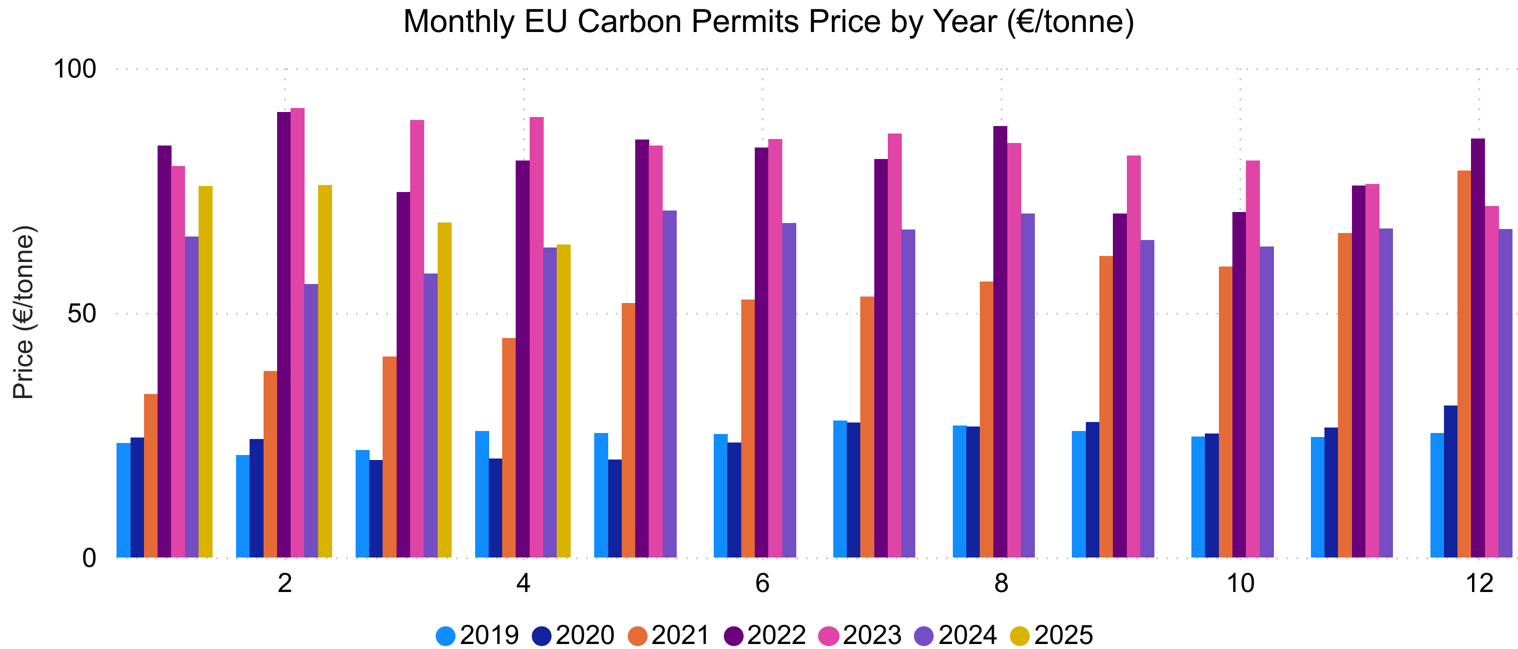
€ 68.59
Monthly High

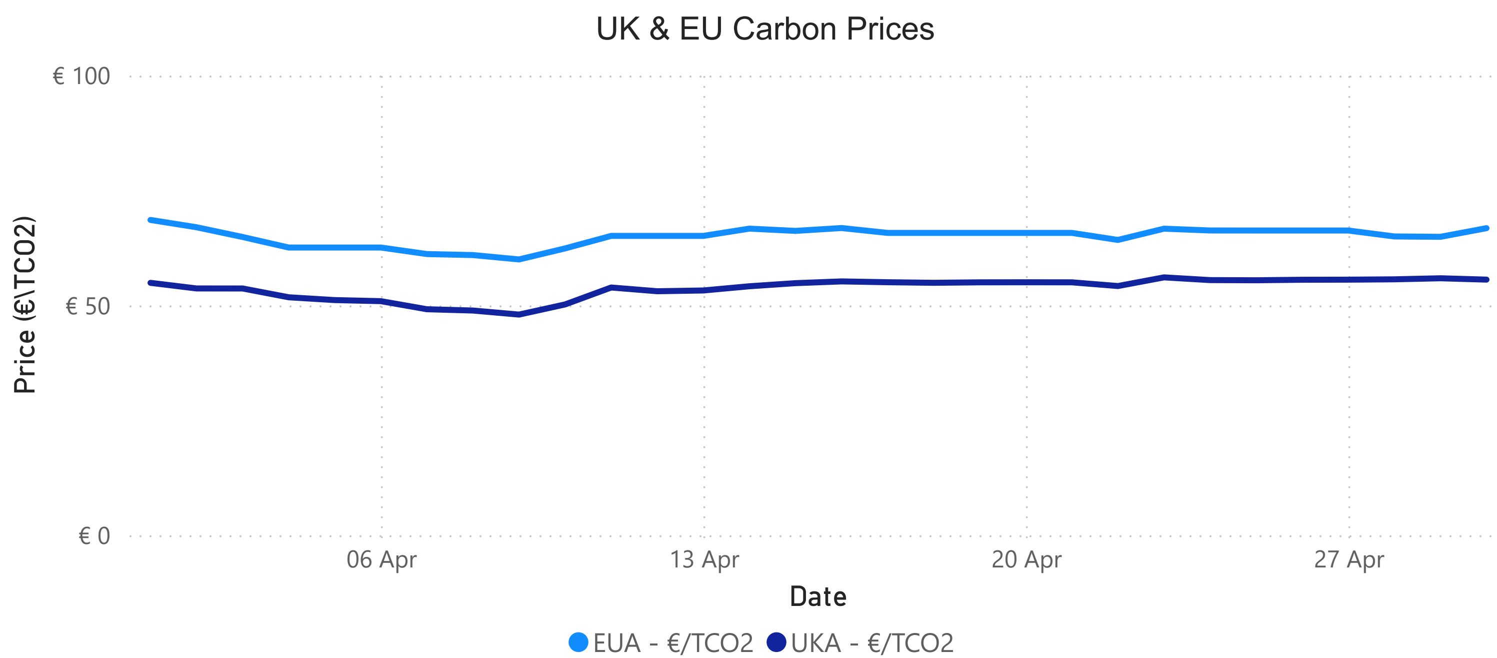
UK Carbon Prices (€/tonne)

€ 53.72
Monthly Average

€ 48.00
Monthly Low

€ 56.10
Monthly High





SEM committee

Carbon Prices

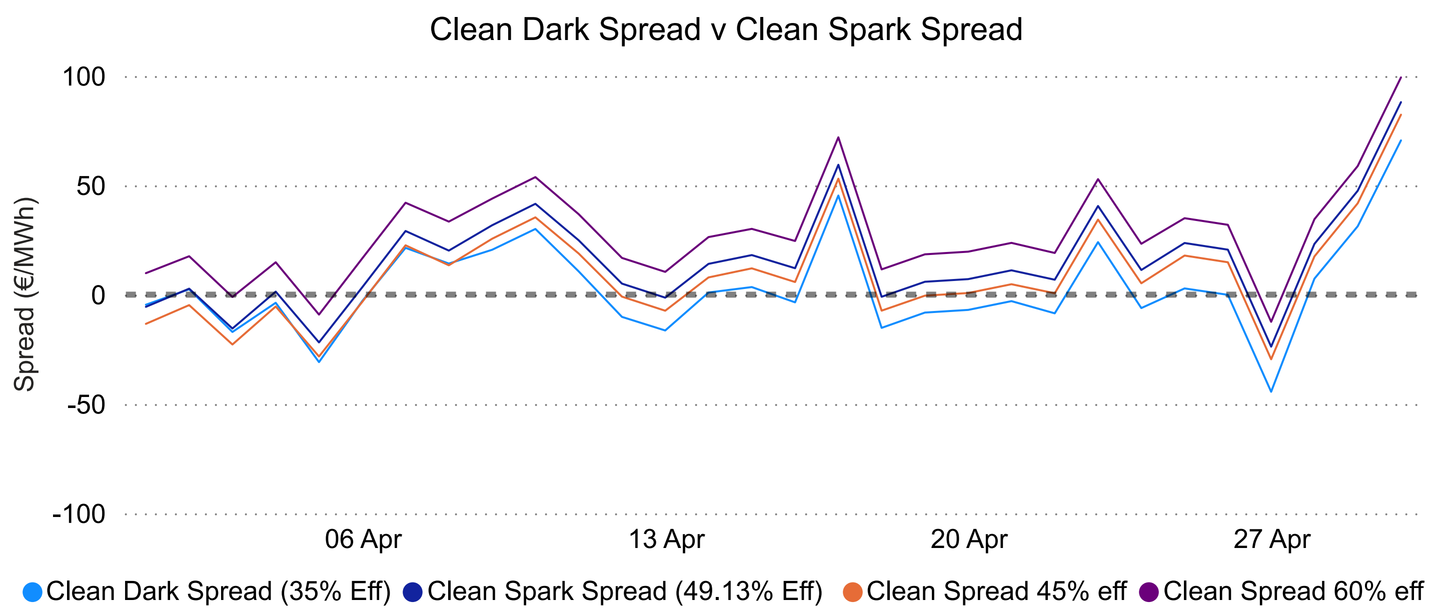
Carbon prices averaged €63.96/tonne, with a 6% drop from the last month average.

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
April 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 vs Clean Spark Spread

Spreads were generally consistent across the month.