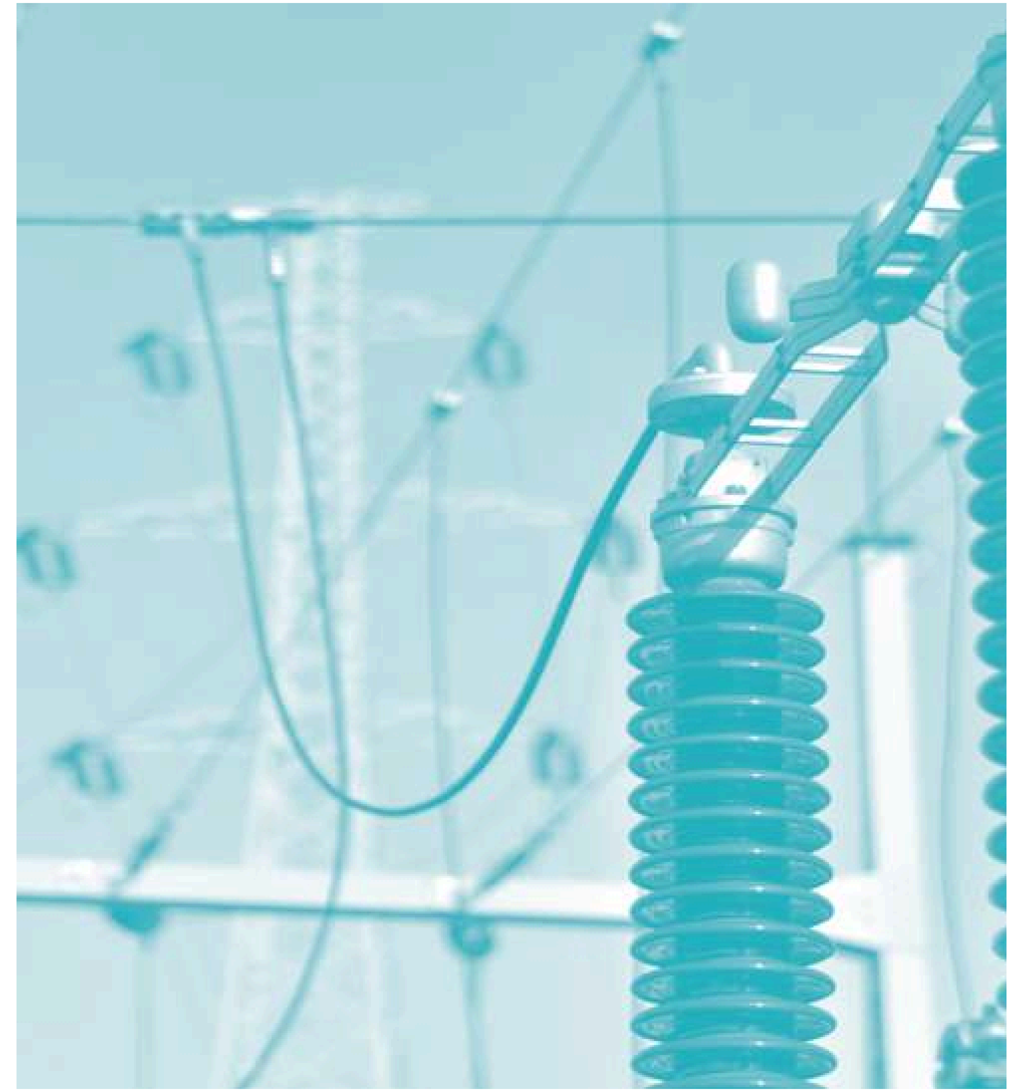
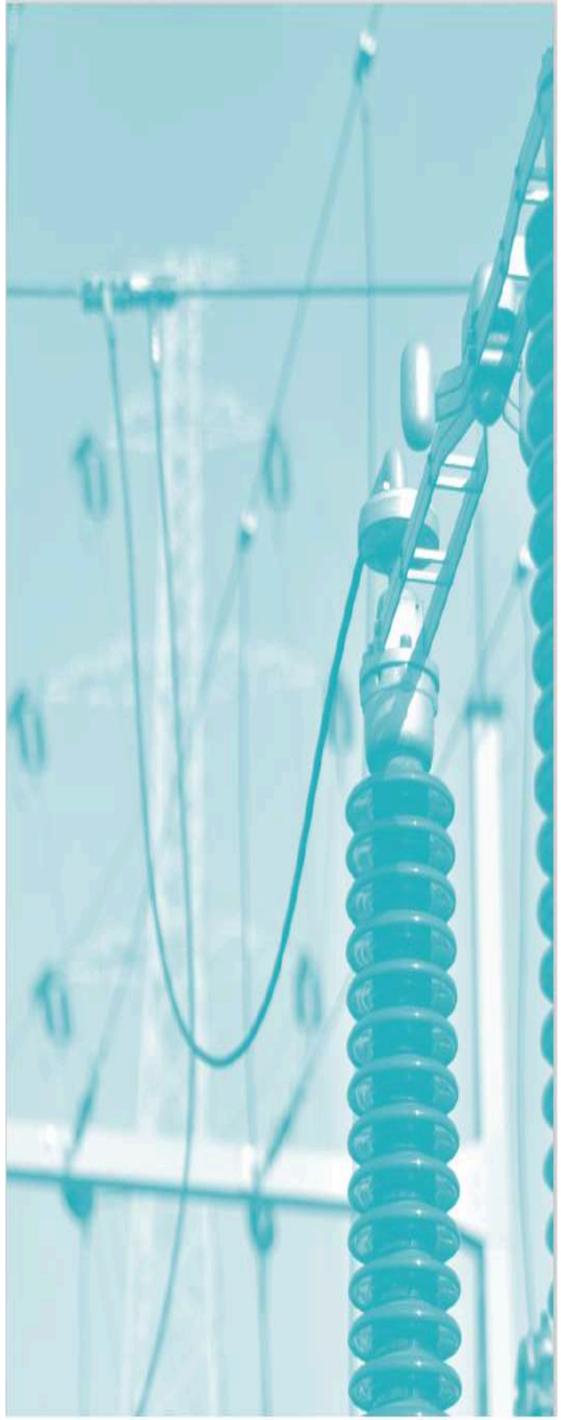




Energy Market Monitoring Report

July 2025

SEM committee



Market Results

Summary Dashboard

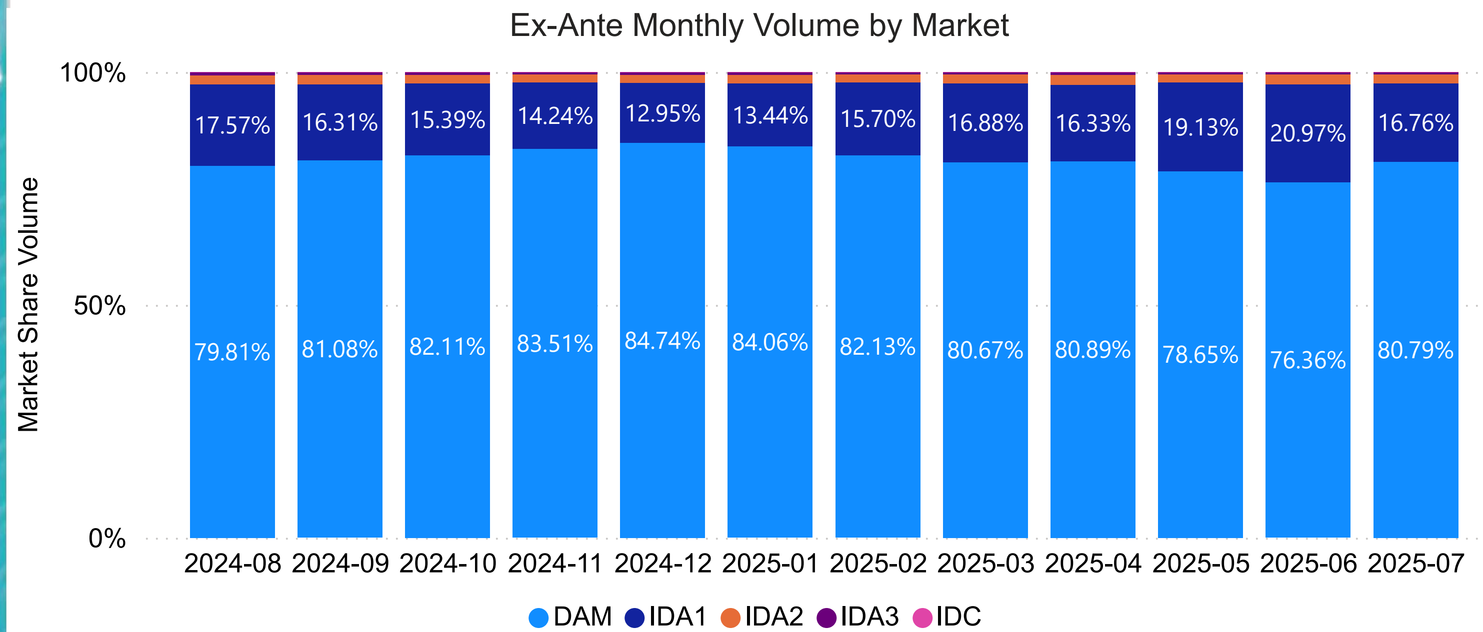
Monthly Averages	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25
DAM (€/MWh)	110.94	100.44	112.73	122.9	146.14	136.99	167.51	140.85	131.8	111.11	108.64	95.21	99.61
% Change from previous month	3%	-9%	12%	9%	19%	-6%	22%	-16%	-6%	-16%	-2%	-12%	5%
% Change from previous year	15%	-6%	1%	-2%	19%	54%	68%	66%	52%	26%	1%	-12%	-10%
Actual System Demand (MW)	4279	4255	4467.8	4671	5085	5020	5256	5194	4951	4594	4254	4413	4356
% Change from previous month	2%	-1%	5%	5%	9%	-1%	5%	-1%	-5%	-7%	-7%	4%	-1%
% Change from previous year	4%	2%	3%	3%	4%	3%	2%	5%	2%	0%	-2%	5%	2%
Actual Wind Generation (MW)	883	1437	1263	1668	1448	2040	1948	2509	1615	1278	933	1306	1057
% Change from previous month	-18%	63%	-12%	32%	-13%	41%	-5%	29%	-36%	-21%	-27%	40%	-19%
% Change from previous year	-33%	3%	-9%	22%	-20%	-17%	5%	25%	-22%	-15%	4%	22%	20%
Gas Price p/therm	75.07	84.71	86.94	99.04	111	111.22	122.85	123.04	100.94	84.72	81.82	86.38	80.69
% Change from previous month	-8%	13%	3%	14%	12%	0%	10%	0%	-18%	-16%	-3%	6%	-7%
% Change from previous year	6%	2%	-5%	-6%	6%	32%	64%	94%	48%	18%	7%	6%	7%
Carbon Price (€/Tonne)	67.00	70.12	64.86	63.51	67.15	67.05	75.87	76.08	68.39	63.96	71.00	73.14	71.03
% Change from previous month	-2%	5%	-8%	-2%	6%	0%	13%	0%	-10%	-6%	11%	3%	-3%
% Change from previous year	-23%	-17%	-21%	-22%	-12%	-7%	16%	36%	18%	1%	0%	7%	6%
Coal Price ($/tonne)	105.93	121.36	114.96	119.65	120.84	113.32	109.23	102.88	97.91	101.46	95.80	102.44	105.83
% Change from previous month	-3%	15%	-5%	4%	1%	-6%	-4%	-6%	-5%	4%	-6%	7%	3%
% Change from previous year	-5%	5%	-5%	-9%	-1%	-4%	1%	6%	-12%	-14%	-10%	-6%	0%
EWIC % Import Periods	94.59%	85.29%	81.53%	71.32%	78.30%	67.64%	67.88%	43.01%	55.18%	27.15%	78.36%	68.26%	45.83%
EWIC % Export Periods	1.11%	7.56%	5.52%	10.31%	9.03%	11.49%	10.18%	13.91%	2.66%	1.81%	0.77%	2.05%	1.31%
EWIC % Not Flow Periods	4.30%	7.15%	12.95%	18.37%	12.67%	20.87%	21.94%	43.08%	42.16%	71.04%	20.87%	29.69%	52.86%
Moyle % Import Periods	96.77%	80.71%	91.98%	81.08%	82.47%	81.55%	78.53%	64.62%	79.24%	78.16%	93.88%	78.85%	57.29%
Moyle % Export Periods	3.23%	10.44%	7.60%	18.65%	17.50%	18.41%	21.27%	22.43%	6.16%	6.08%	6.08%	16.70%	24.33%
Moyle % Not Flow Periods	0.00%	8.84%	0.42%	0.28%	0.03%	0.03%	0.20%	12.95%	14.60%	15.76%	0.03%	4.44%	18.38%
Greenlink % Import Periods	NA	NA	NA	NA	NA	NA	NA	68.97%	88.63%	80.17%	93.78%	90.76%	91.23%
Greenlink % Export Periods	NA	NA	NA	NA	NA	NA	NA	25.04%	9.49%	10.35%	5.58%	7.36%	7.83%
Greenlink % Not Flow Periods	NA	NA	NA	NA	NA	NA	NA	5.99%	1.88%	9.48%	0.64%	1.88%	0.94%

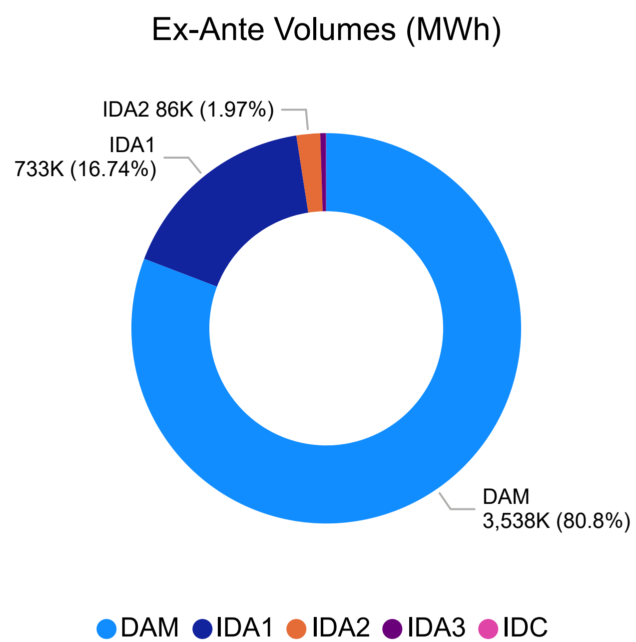
Market Volumes July 2025

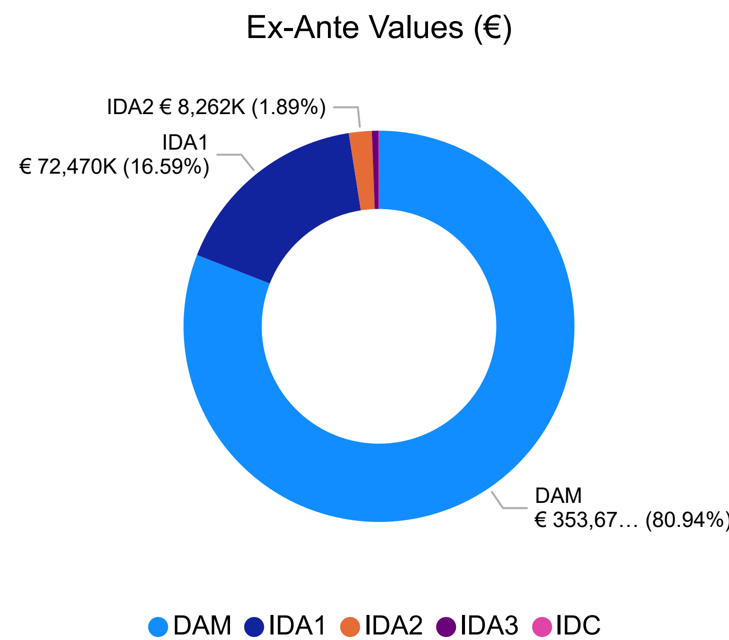
Daily Average Volume	MWh
DAM	114,136
IDA1	23,645
IDA2	2,776
IDA3	662
IDC	41

Total Monthly Volume	MWh
DAM	3,538,207
IDA1	732,998
IDA2	86,055
IDA3	20,510
IDC	980
Total	**4,378,750**

Total Market Value	€
DAM	€ 353,677,954
IDA1	€ 72,470,344
IDA2	€ 8,261,505
IDA3	€ 2,421,257
IDC	€ 127,452
Total	**€ 436,958,512**







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
July 2025

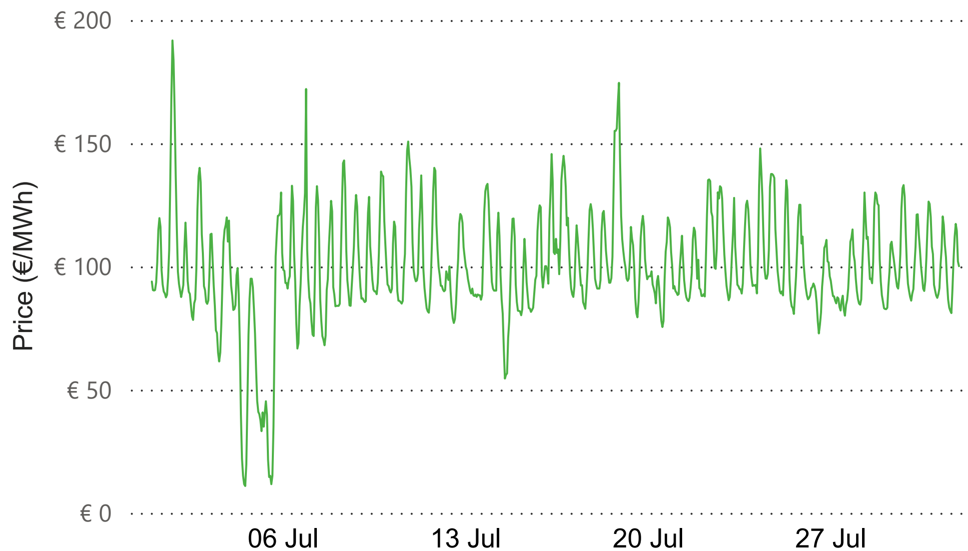
€ 99.61
Average DAM Price

€ 10.87
Min DAM Price

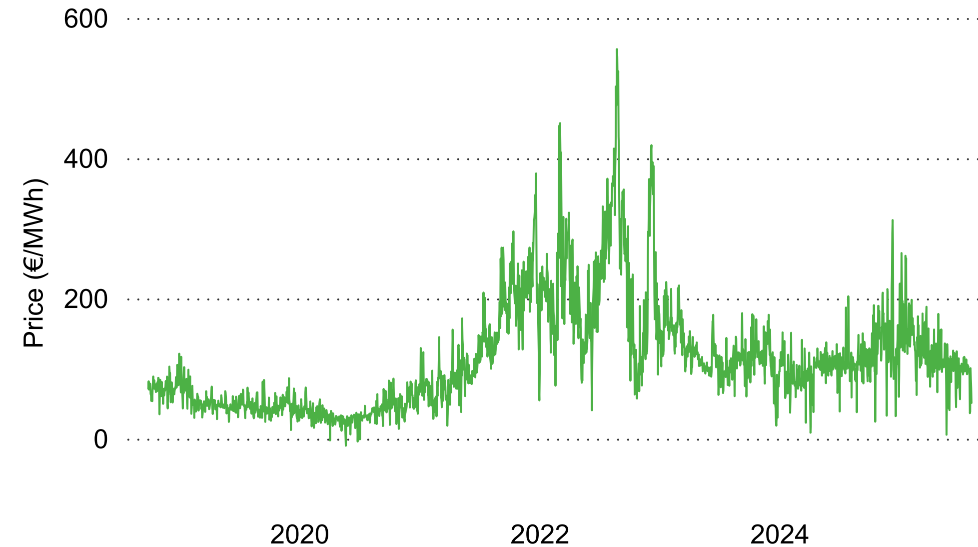
€ 191.70
Max DAM Price

The most frequent price range for the month was between €90 and €120.

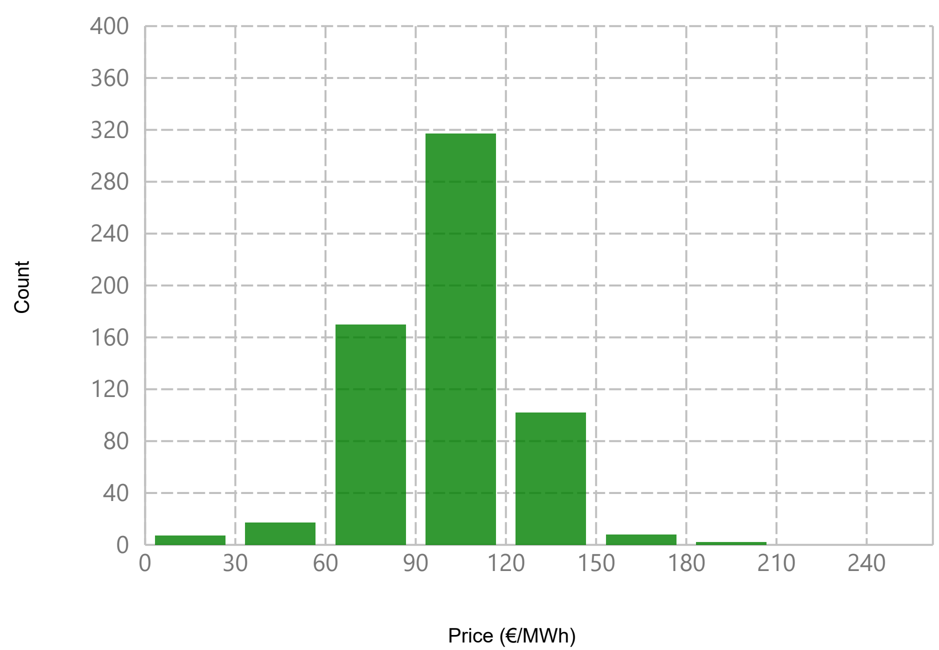
DAM Prices



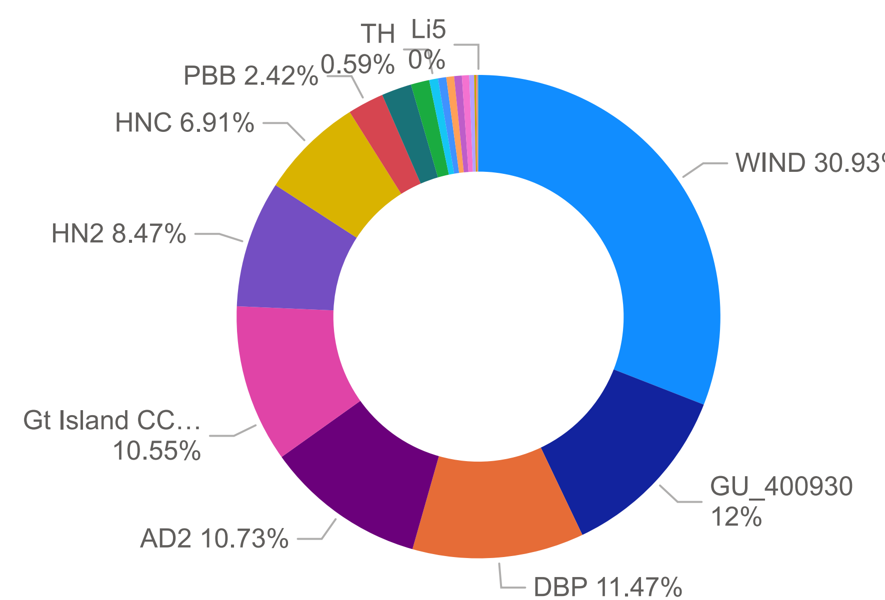
Historic Daily Average DAM Prices



Histogram of DAM Prices



DAM Sell Side Generator Order Results



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Intraday Market July 2025

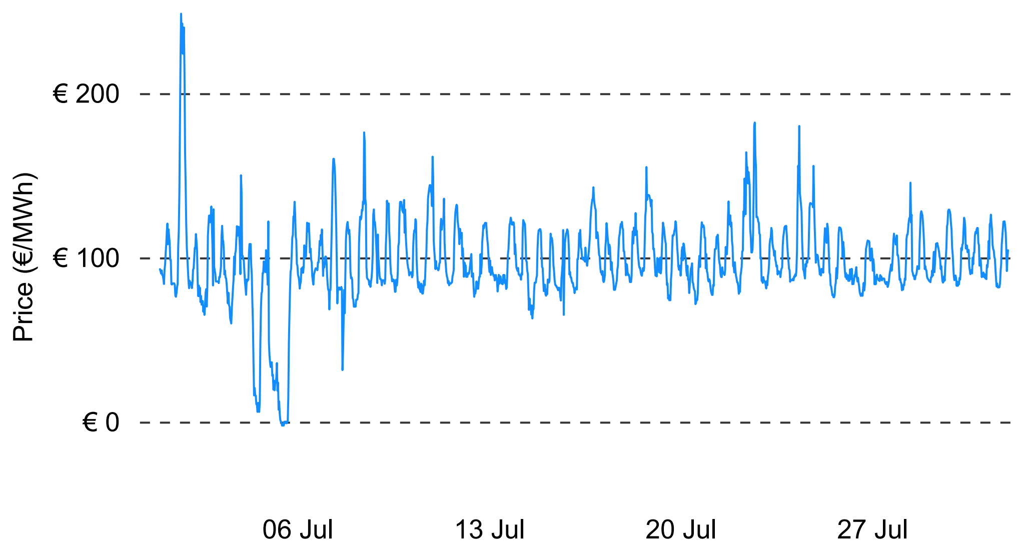
€ 97.67
Average IDA1 Price

-€ 2.38
Min IDA1 Price

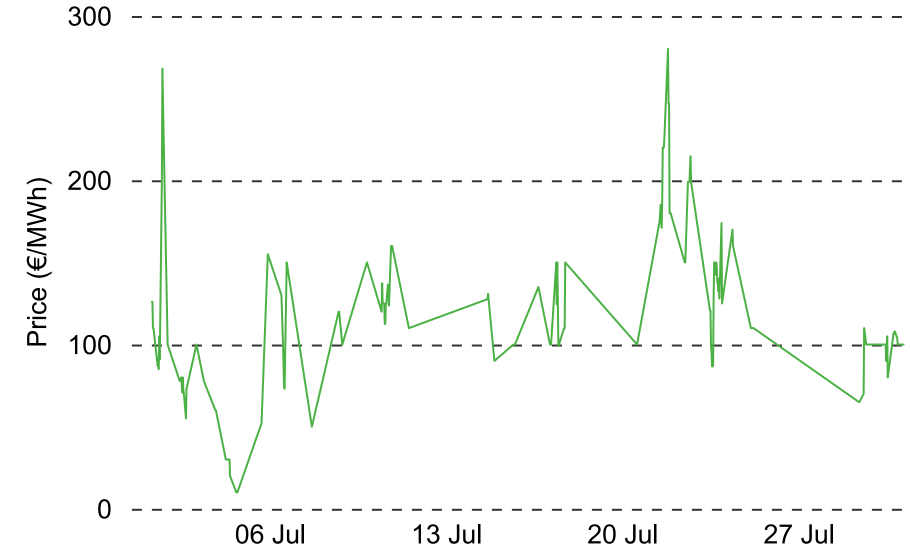
€ 248.35
Max IDA1 Price

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

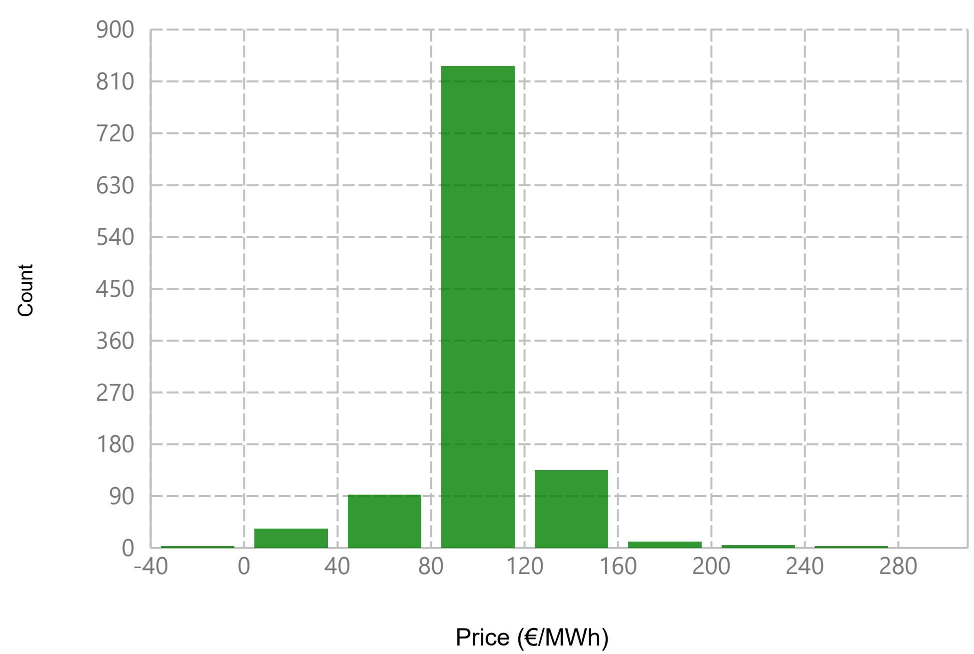
IDA 1 Prices



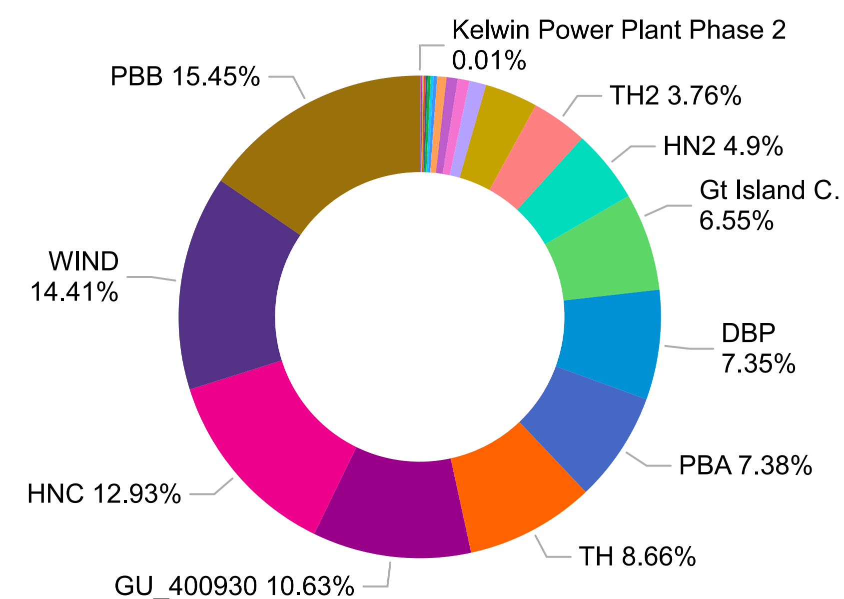
IDC Prices



Histogram of IDA1 Prices



IDA1 Sell Order Results By Market Participant



SEM vs GB DAM July 2025

SEM Day Ahead Price

€ 99.61
Average DAM Price

€ 10.87
Min DAM Price

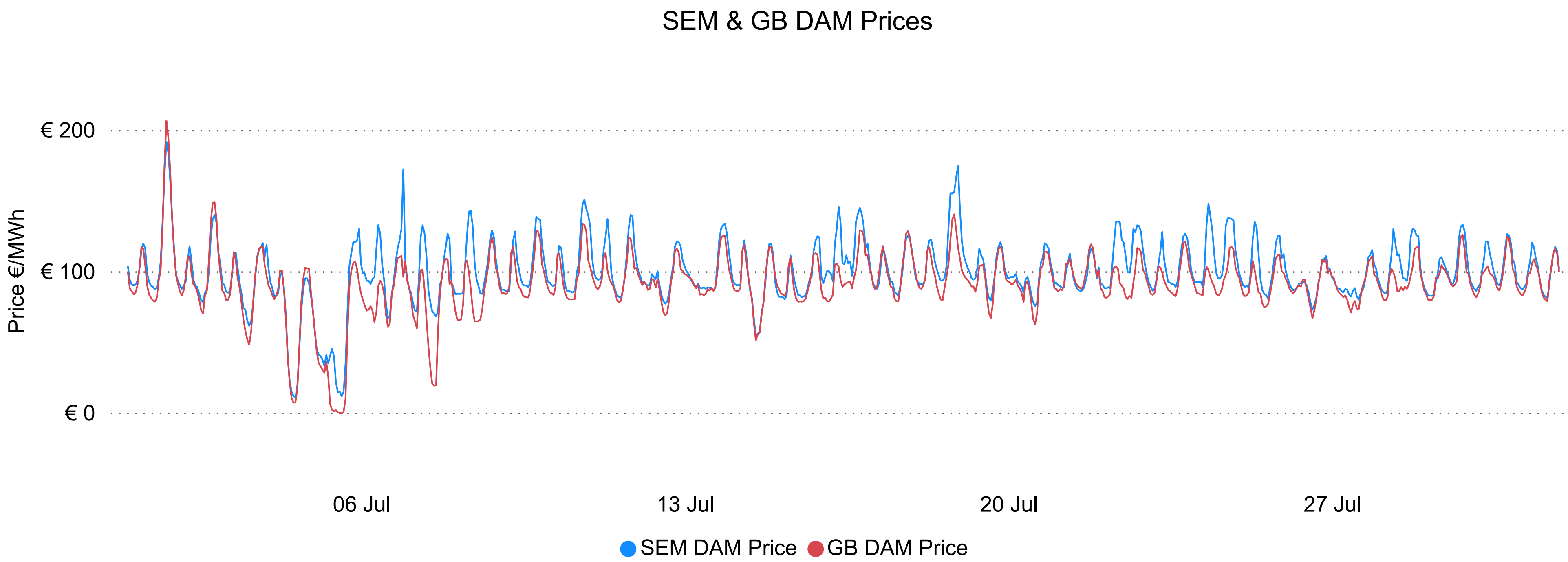
€ 191.70
Max DAM Price

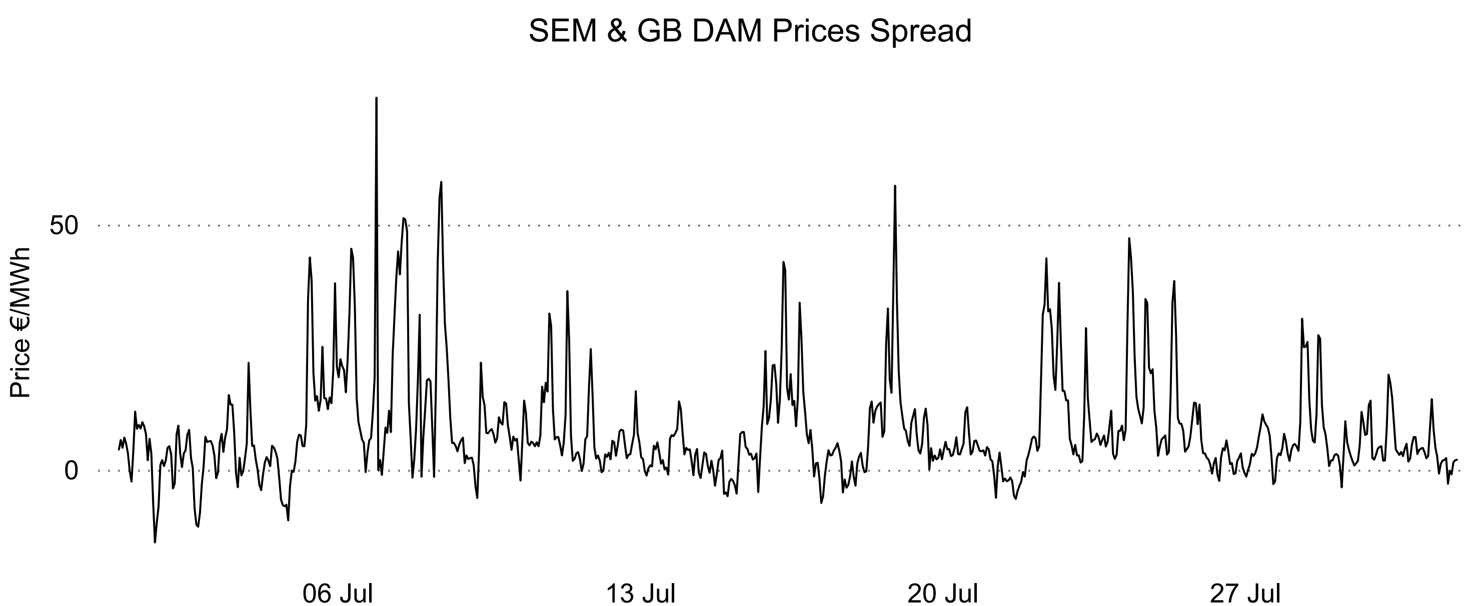
GB Day Ahead Price

€ 91.54
Average Price

-€ 0.42
Min Price

€ 206.53
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.

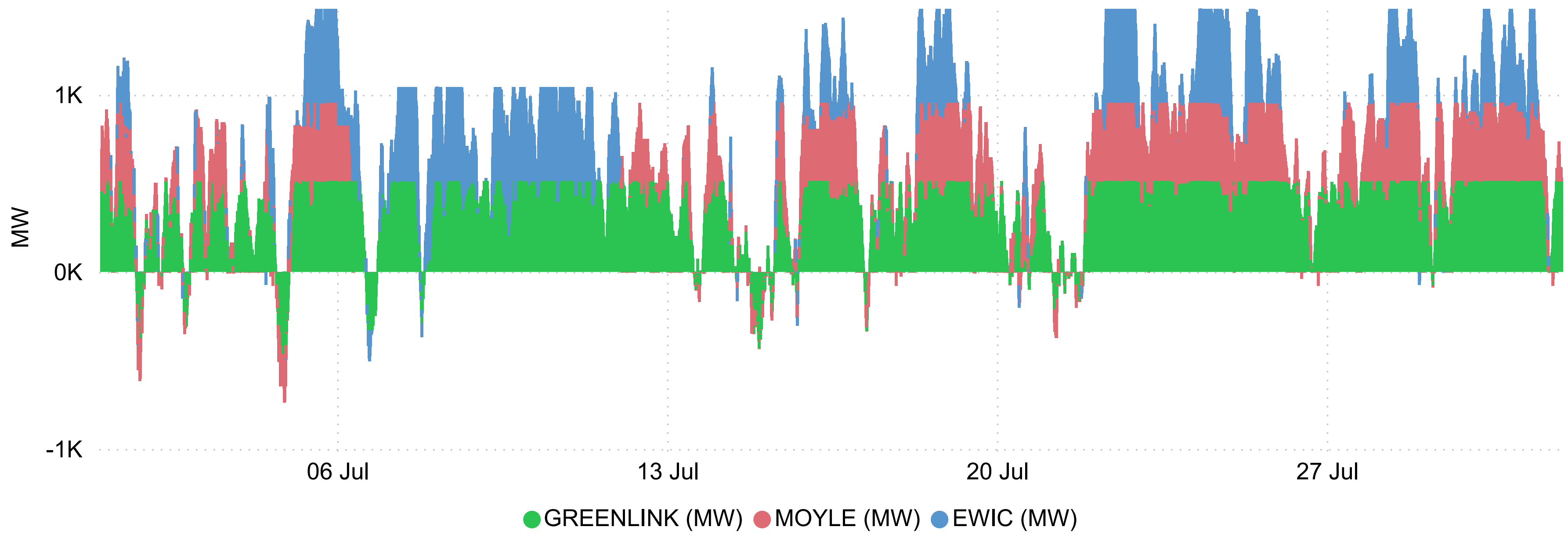
SEM Interconnectors July 2025

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.

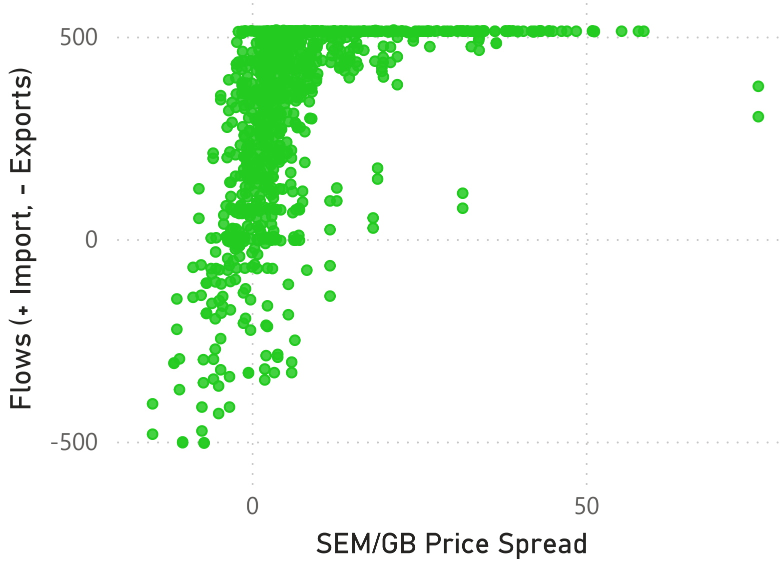
Export flows on interconnectors were also observed occasionally when strong wind output resulted in oversupply in the SEM.

Also, Moyle interconnector was unavailable for planned maintenance from 07:00 on 6 July to 22:00 on 11 July.

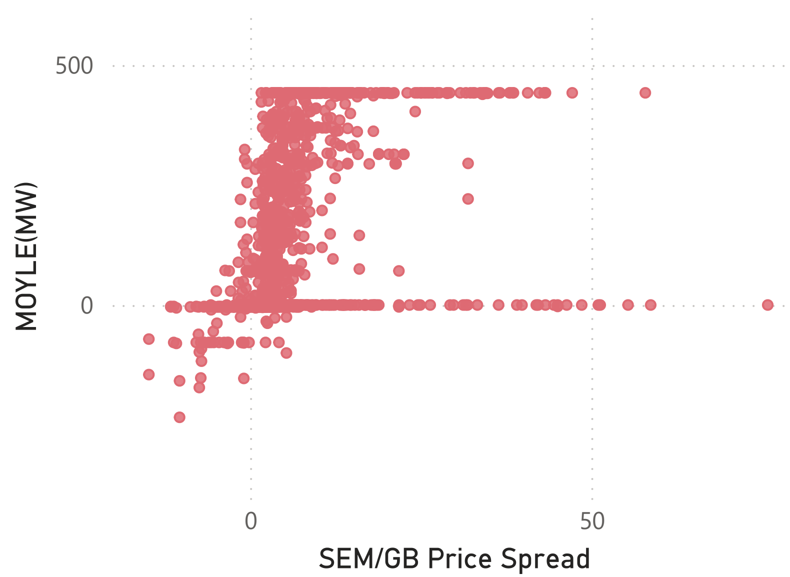
SEM Interconnector Flows



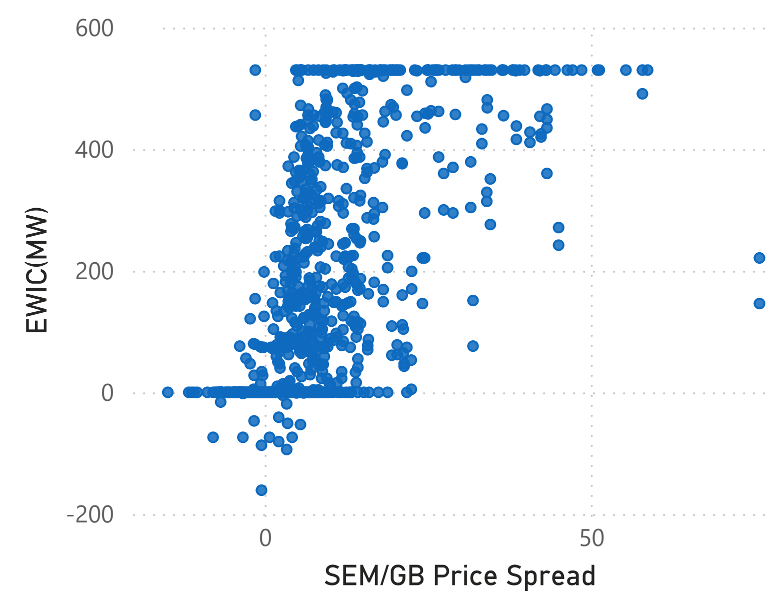
Greenlink Flows vs SEM/GB Price Spread



Moyle Flows vs SEM/GB Price Spread



EWIC Flows vs SEM/GB Price Spread

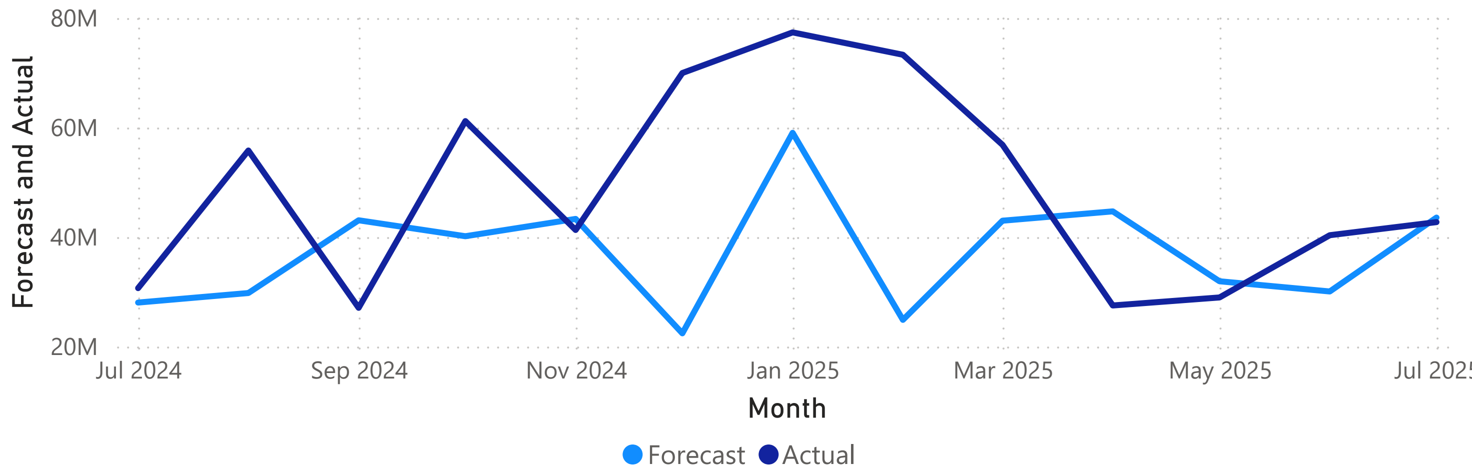


Balancing Market July 2025

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.

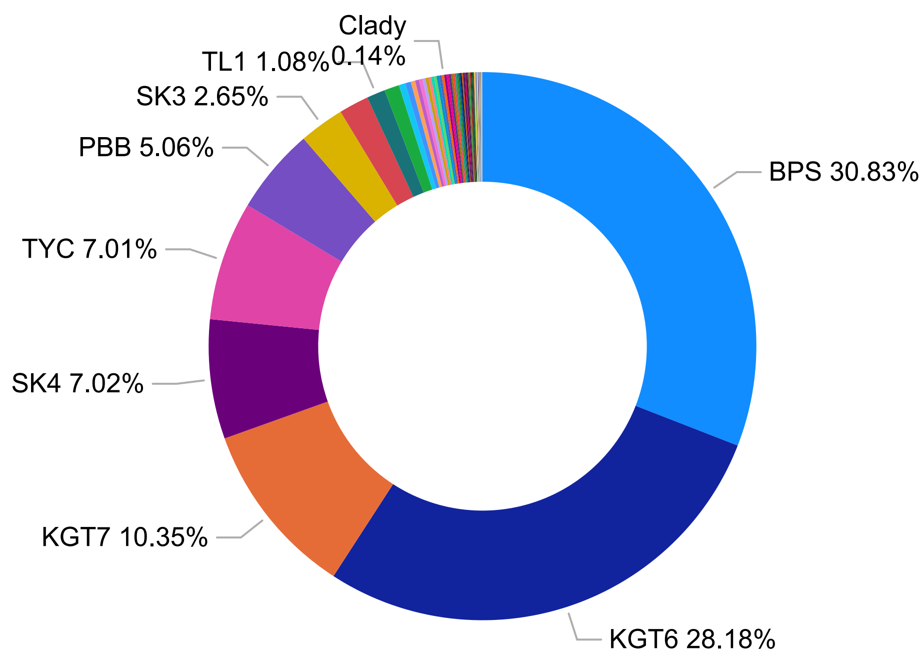
Generators can be constrained ‘on' or ‘up' if the market schedule indicated they were to be run at lower levels than actually happened. Or they could be constrained ‘down' or ‘off' if they were to be run at a higher level than happened in reality. There is always an overall net cost to the system associated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

Imperfection Costs - Forecast vs Actual



Determinant Name	Value €
CABBPO	44,037.35
CAOOPO	-64,042.33
CCURL	-179,101.55
CDISCOUNT	16,795,981.25
CFC	14,138,061.06
CPREMIUM	12,618,240.42
CTEST	-6,957.45
CUNIMB	-623,062.08
Total	**42,723,156.66**

Market Share per Unit (CFC, CPREMIUN, CDISCOUNT)



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 followed by KGT6 (EP Killroot Ltd).

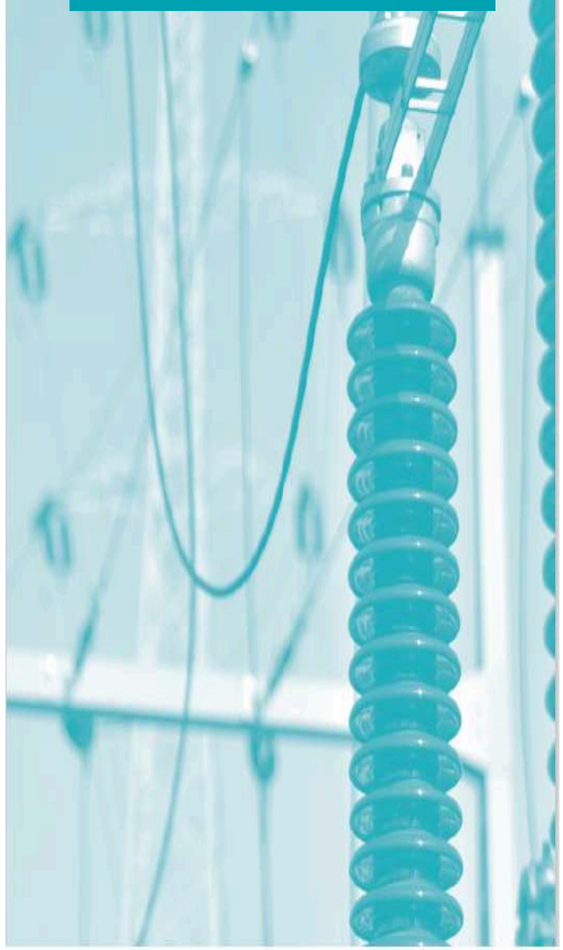
Balancing Market July 2025

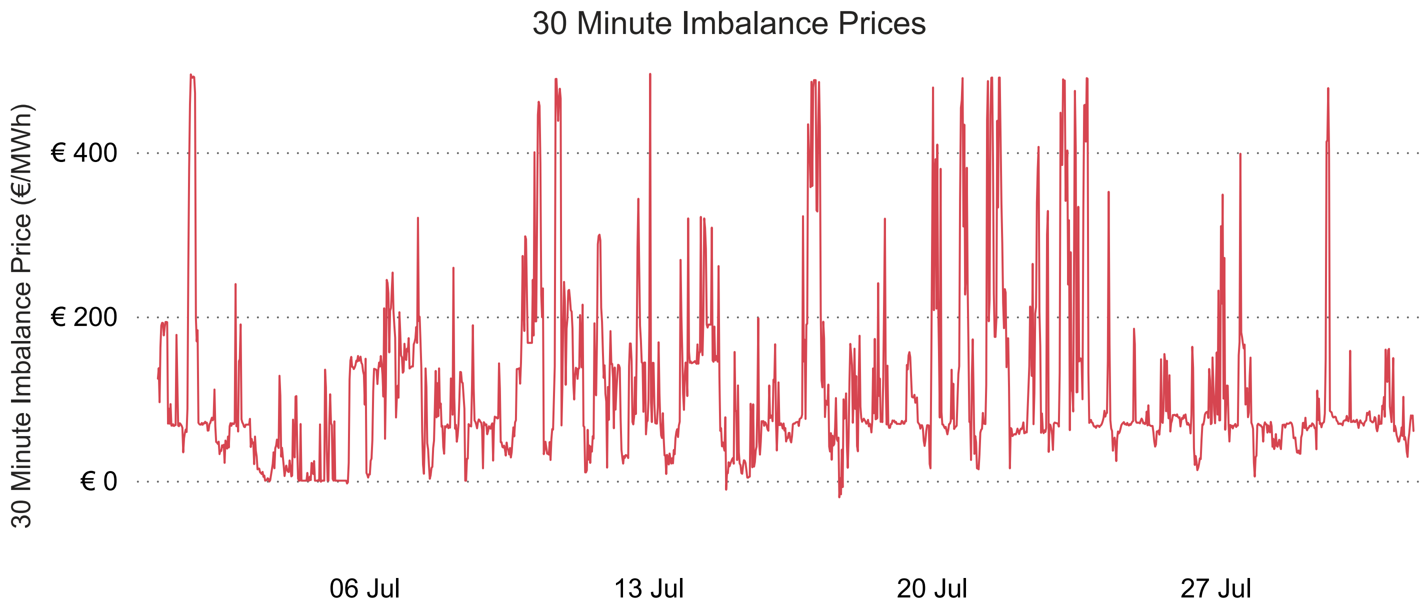
30 Minutes Imbalance Price

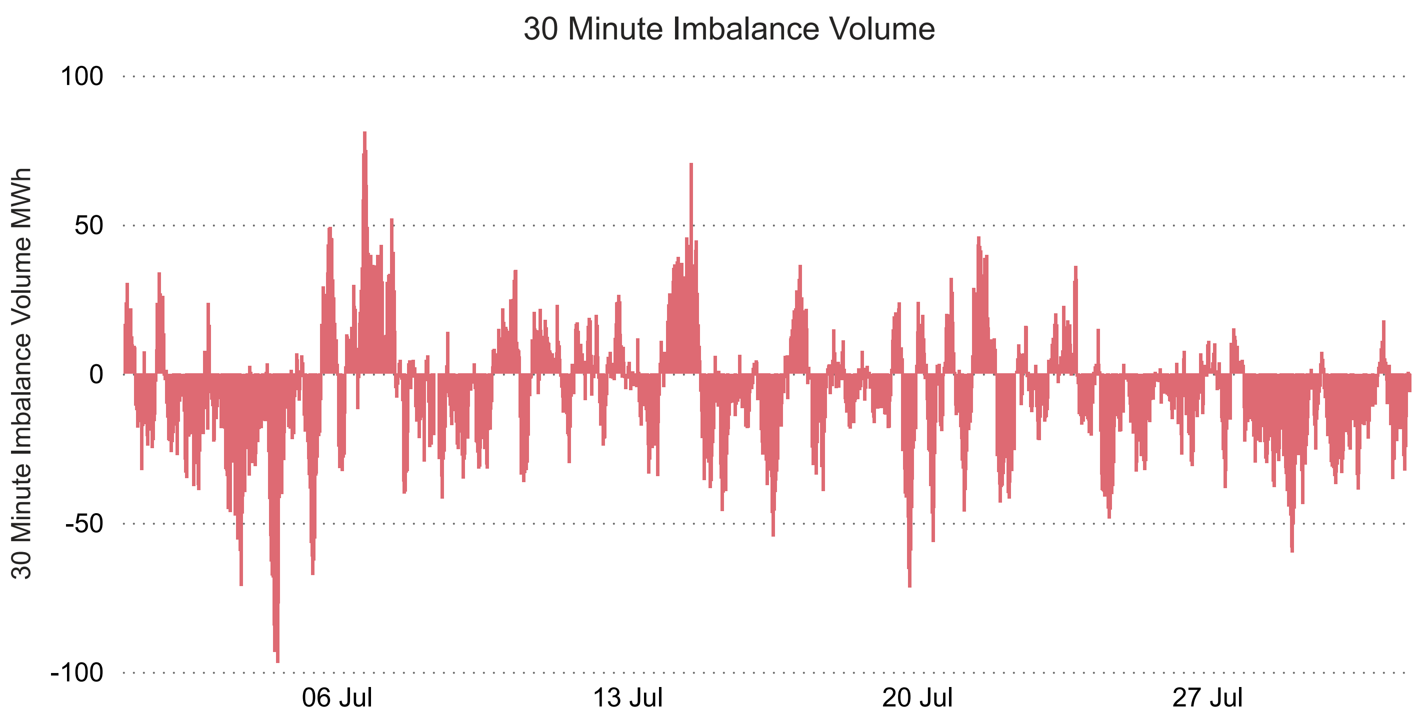
€ 108.85
Average Price

-€ 20.32
Lowest Price

€ 495.34
Highest Price



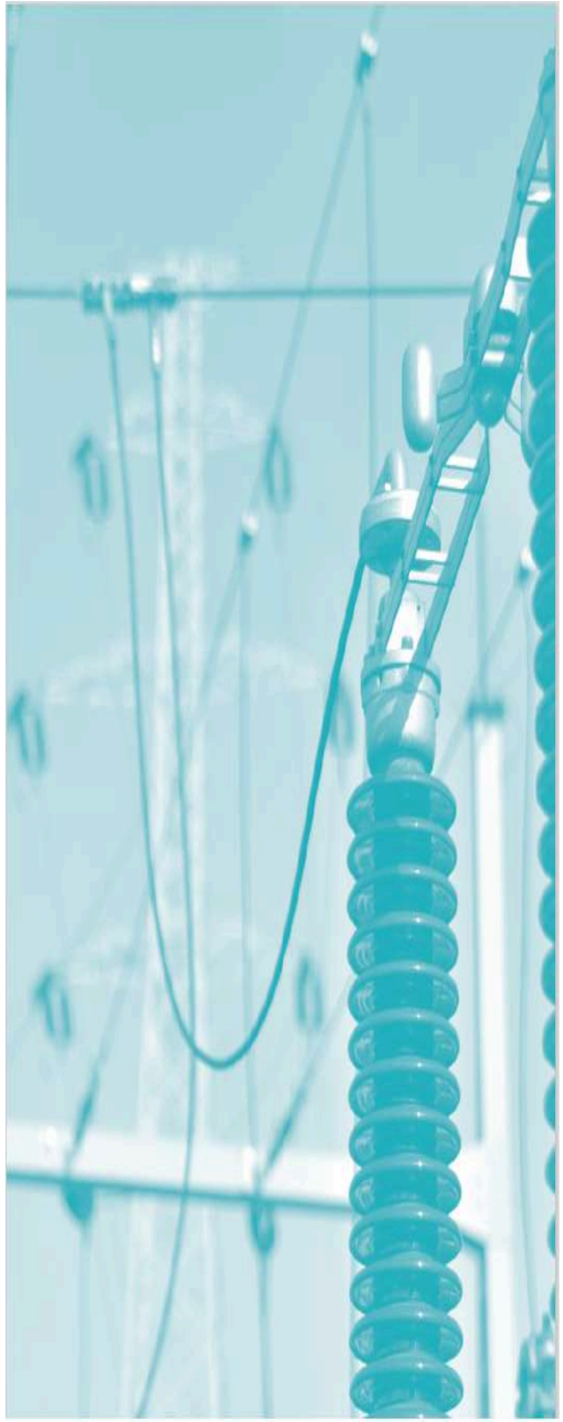




Imbalance Price & Volumes

The average Imbalance (BM) Price this month was higher than the Day Ahead Price. Also, 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
July 2025

SEM Demand

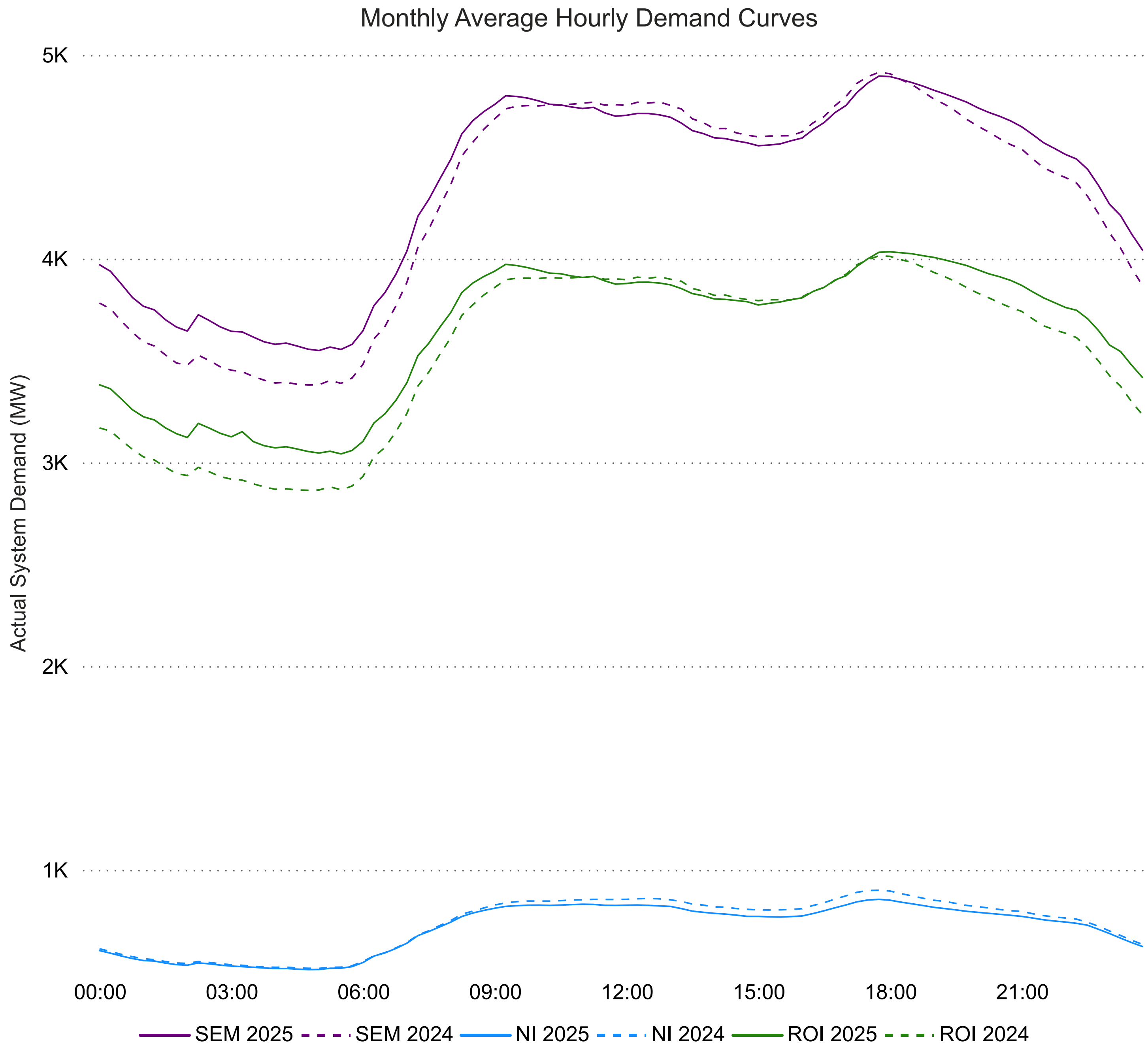
4,356.02 SEM Average 2025	4,279.36 SEM Average 2024
3,549.12 SEM Min 2025	3,380.48 SEM Min 2024
4,896.25 SEM Max 2025	4,914.71 SEM Max 2024

NI Demand

714.09 NI Average 2025	734.54 NI Average 2024
510.77 NI Min 2025	516.77 NI Min 2024
855.45 NI Max 2025	900.19 NI Max 2024

ROI Demand

3,641.12 ROI Average 2025	3,544.82 ROI Average 2024
3,041.82 ROI Min 2025	2,863.23 ROI Min 2024
4,033.75 ROI Max 2025	4,014.39 ROI Max 2024



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SEM Demand

The graph indicates a 2% increase in all-island demand compared to the same period last year.

ROI demand increased by 2.7% relative to the same period last year. Due to increased solar adoption, ROI's demand now exhibits a midday dip (Commonly referred to as the 'duck curve' effect).

On the other hand, NI demand experienced a 2.8% decrease compared to the same period last year.

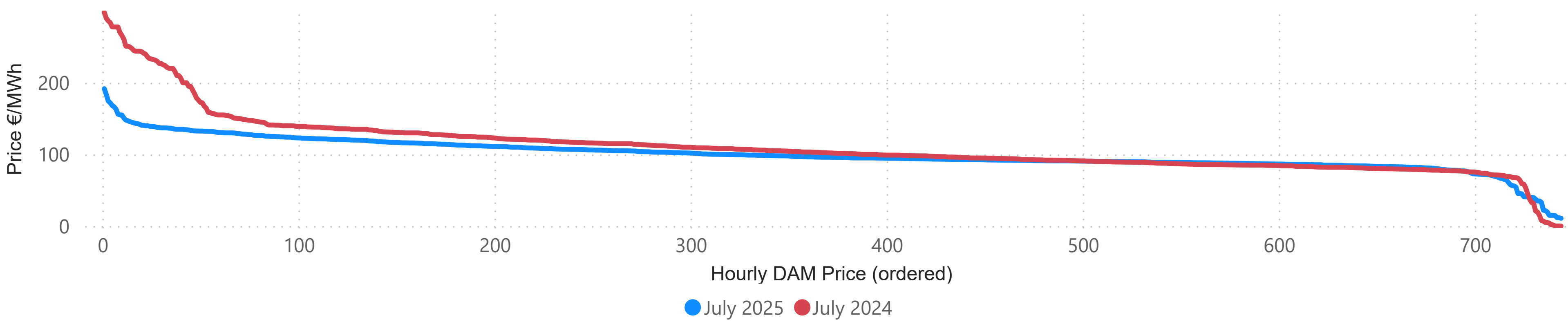
Duration Curves July 2025

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

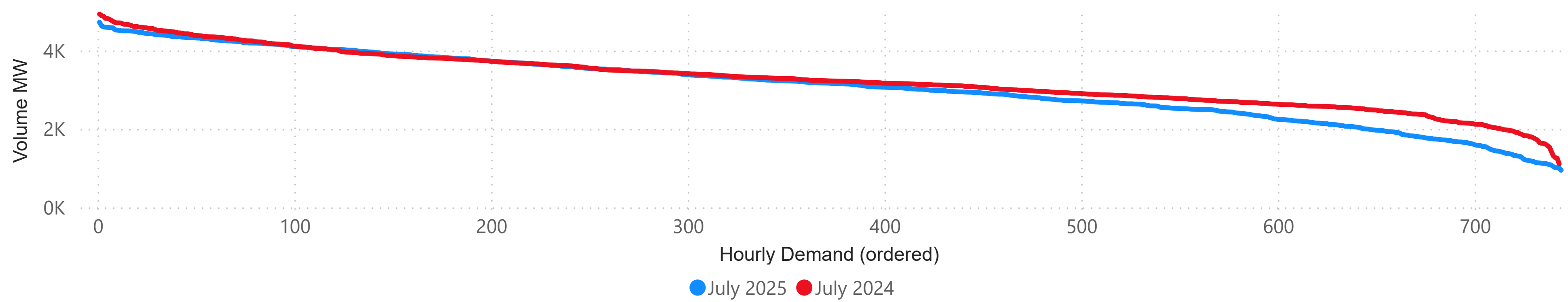
Residual Duration
The residual demand curve shows the ordered hourly demand level across the month which can't be met by renewable generation.

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

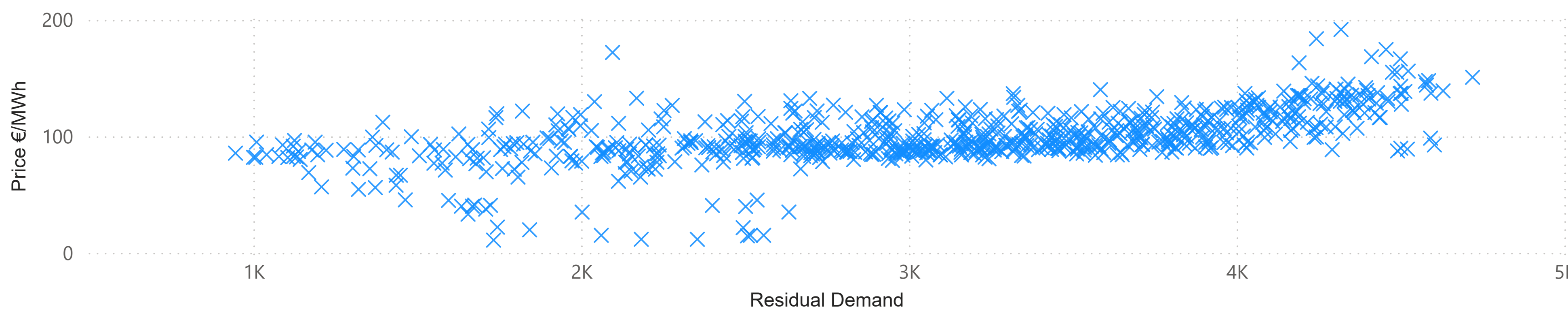
Price Duration Curve SEM



Residual Demand Duration Curve SEM



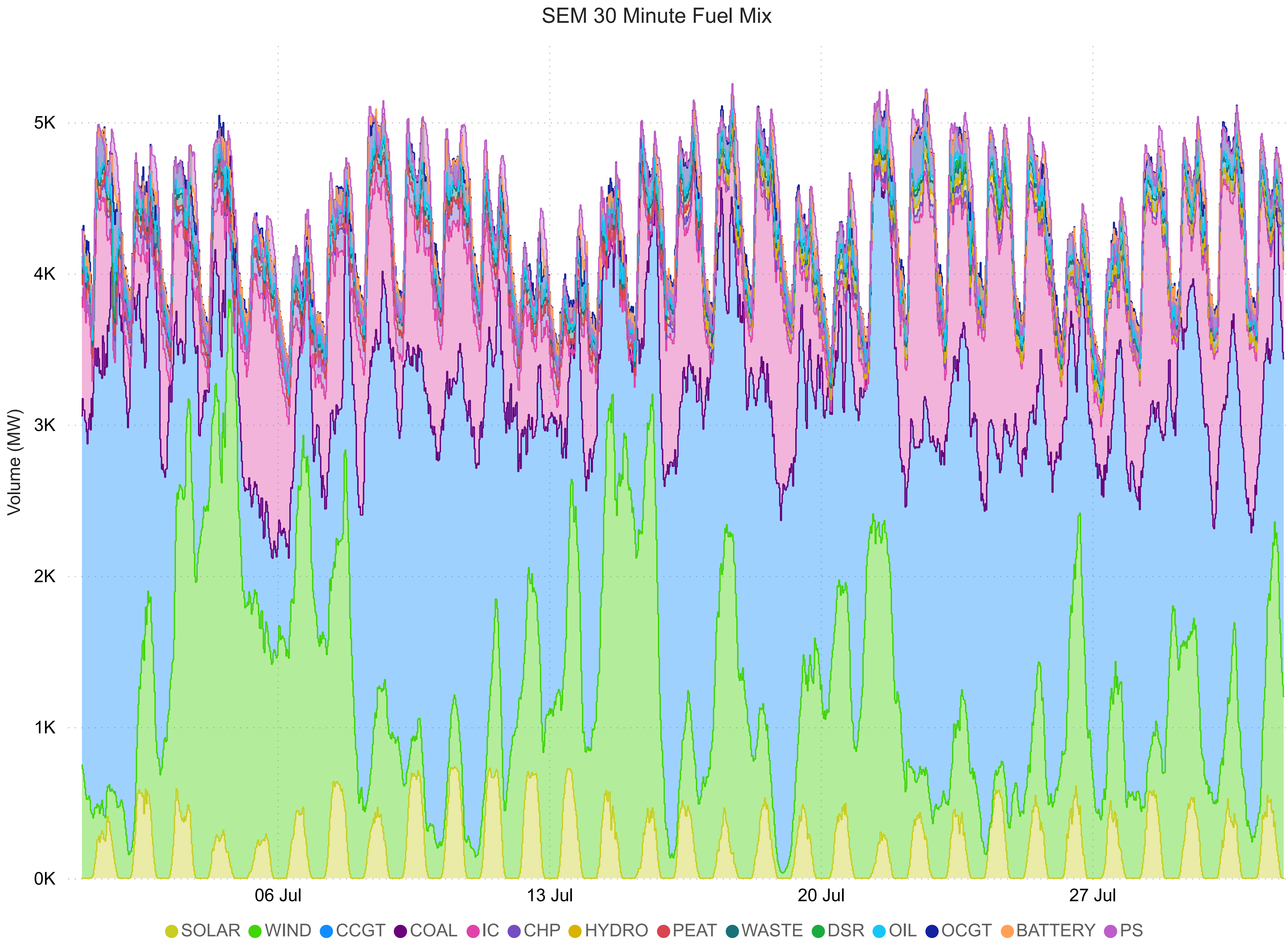
DAM Price against Residual Demand



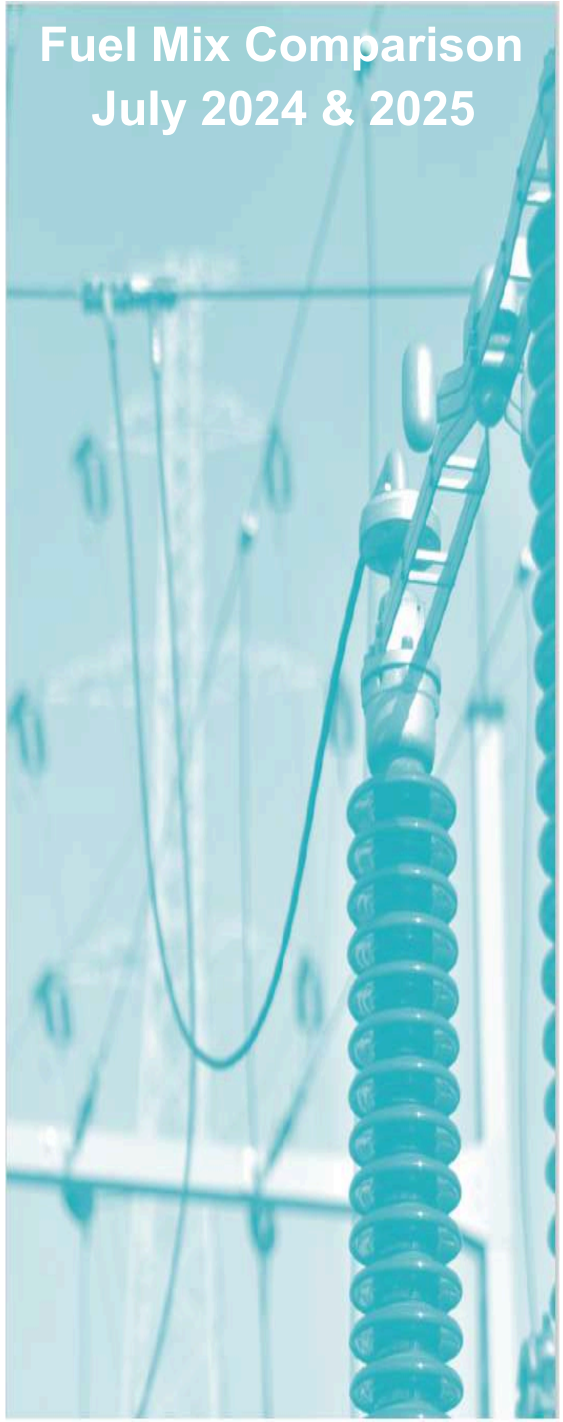
Fuel Mix
July 2025

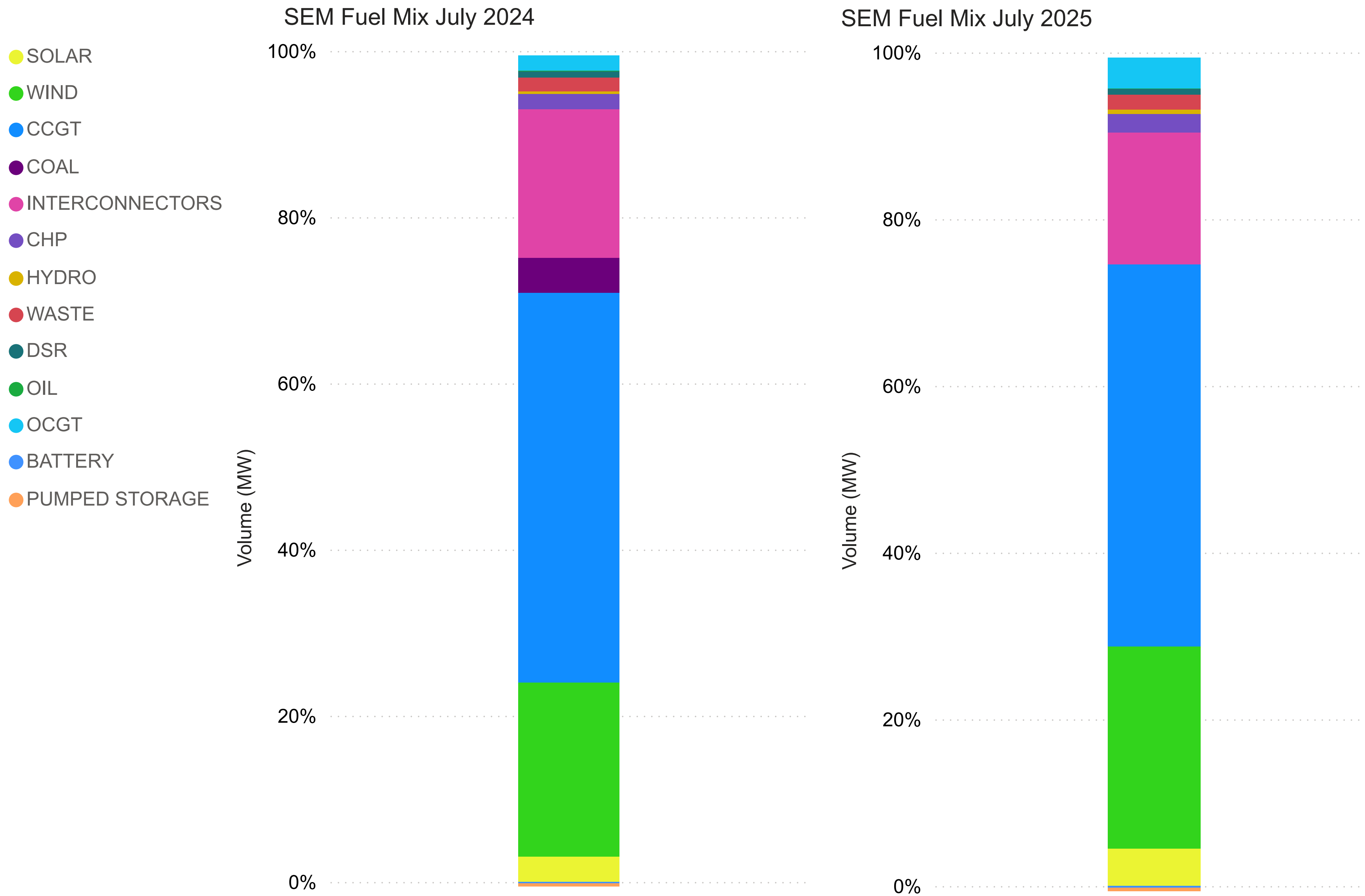
Fuel Type	Avg Monthly	Per. Monthly
CCGT	2002	46.4%
WIND	1057	24.5%
INTERCONNECTORS	690	16.0%
SOLAR	196	4.5%
OCGT	161	3.7%
CHP	97	2.2%
WASTE	78	1.8%
DSR	31	0.7%
HYDRO	23	0.5%
OIL	2	0.1%
COAL	0	0.0%
PEAT	0	0.0%
BATTERY	-8	-0.2%
PUMPED STORAGE	-18	-0.4%

Fuel Type	Max Monthly	Min Monthly
WIND	3749	15
CCGT	3484	662
INTERCONNECTORS	1494	-726
SOLAR	738	0
OCGT	417	144
PUMPED STORAGE	291	-299
OIL	287	0
BATTERY	222	-140
CHP	161	0
HYDRO	82	0
WASTE	81	61
DSR	47	0
COAL	1	0
PEAT	0	0



Fuel Mix Comparison July 2024 & 2025





North-South Tie Line
July 2025

Average Flow NI to ROI (MW)

-169.58

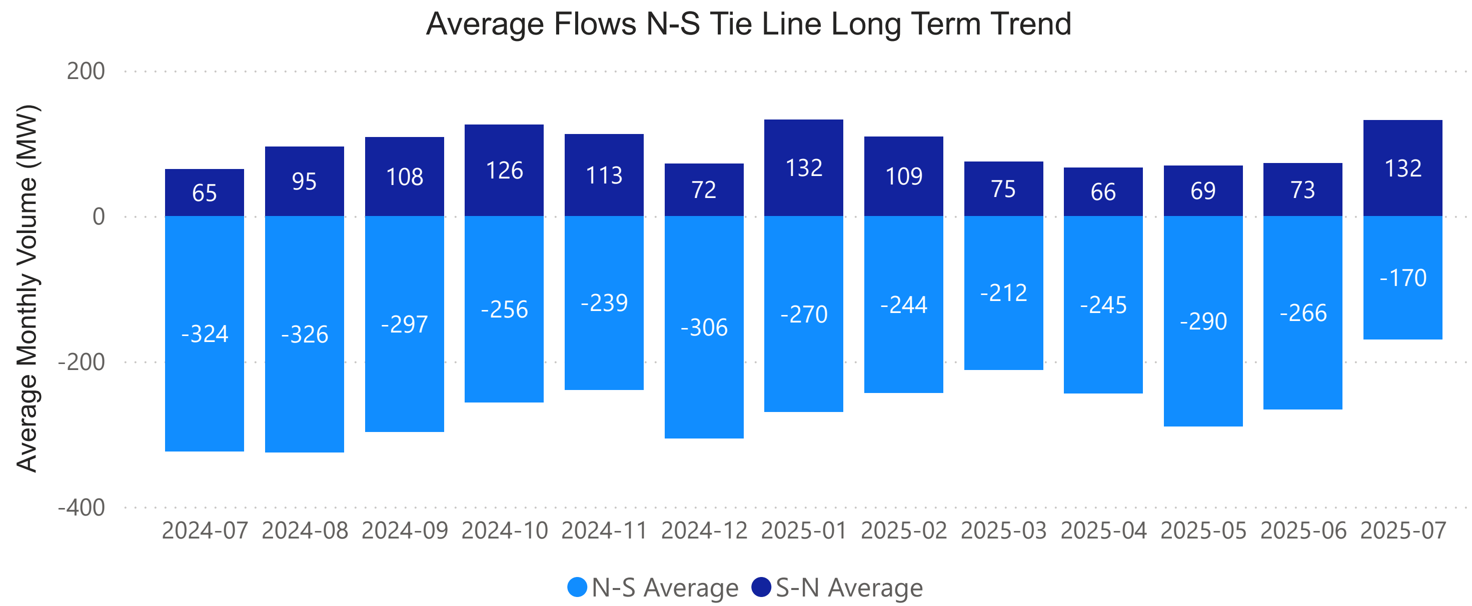
Average Flow ROI to NI (MW)

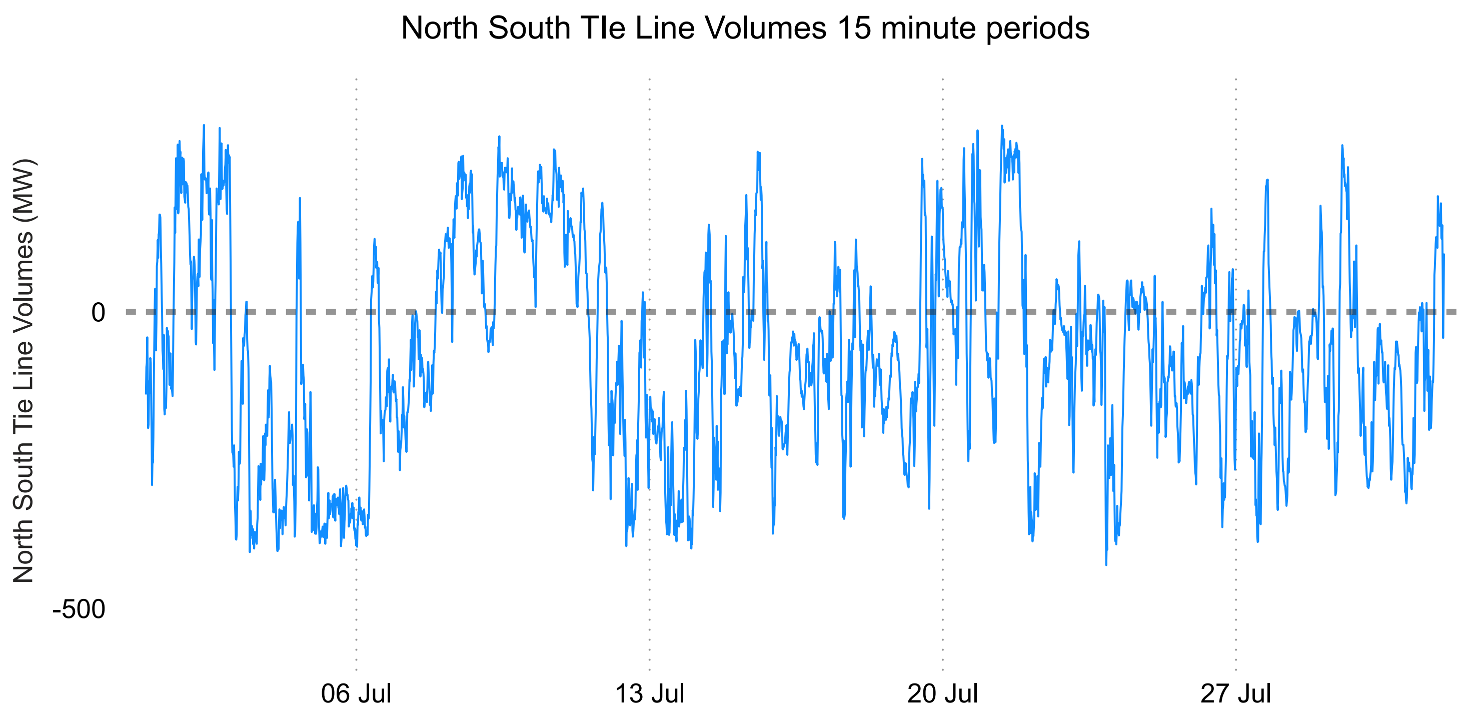
131.90

Average Net Flow NI to ROI (MW)

-68.93

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





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North South Tie Line

Flows across the N-S Tie Line were predominantly in the North to South direction. This has been the long term trend. Reasons for this trend are outlined below:

•When wind penetration is high in NI, there is often a surplus of power as the TSOs must run a minimum number of thermal units in NI to address transmission constraints in the system.

• Demand in ROI has been growing at a faster pace than in NI.

Wind Generation July 2025

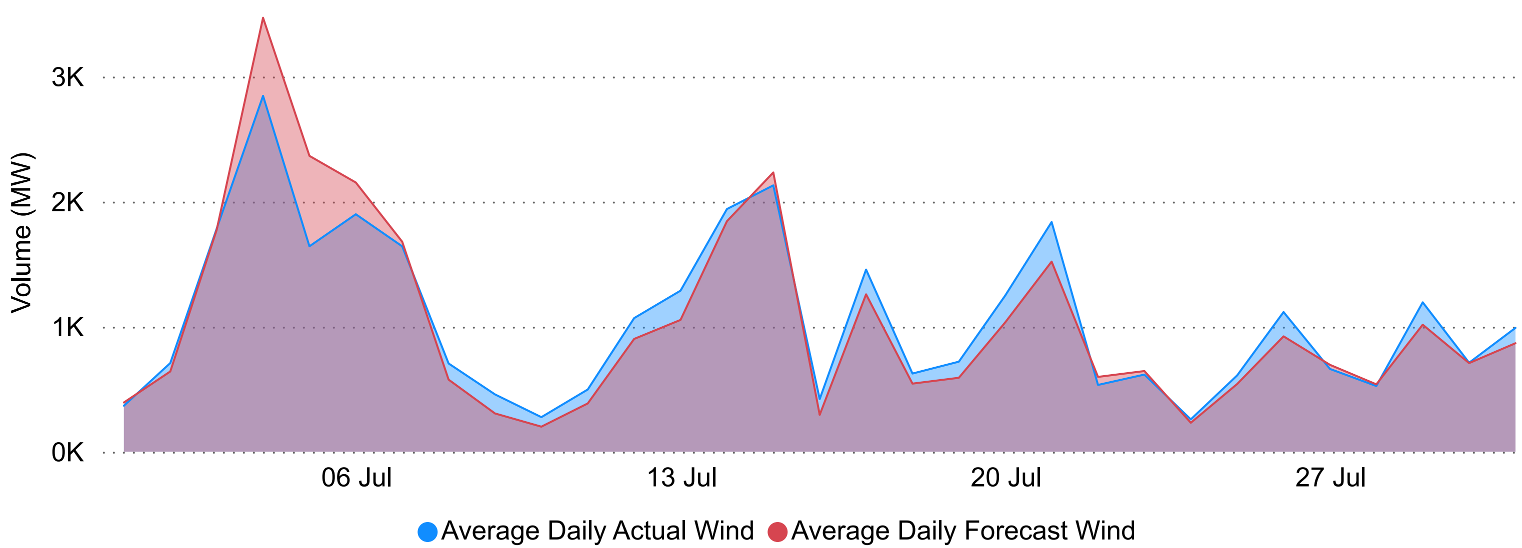
Average Daily Actual Wind (MW)
1,057

Average Daily Forecast Wind (MW)
1,032

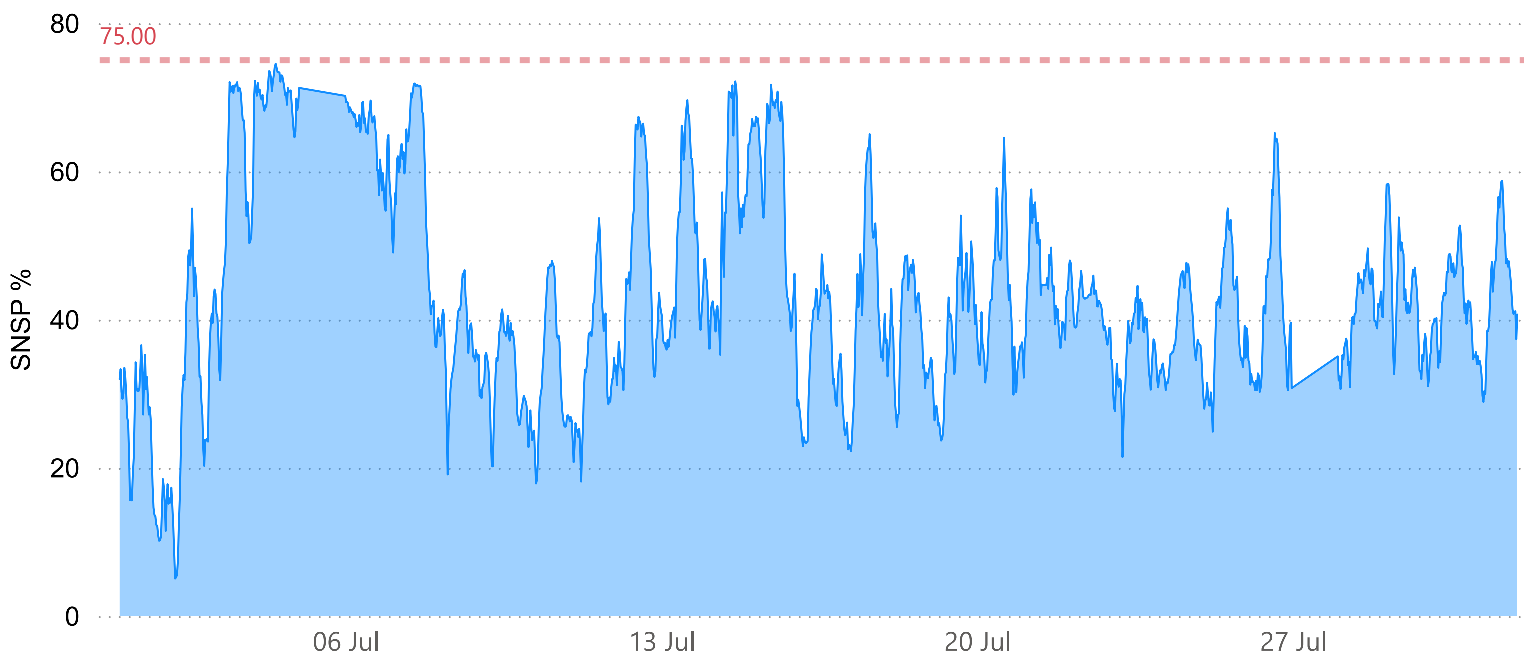
Min SNSP%
5.06

Max SNSP%
74.54

Actual Daily Average Wind Relative to Forecast Daily Average Wind



SNSP %



Wind Generation

Average wind output decreased by 19% from last month but increased by 20% 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 July 2025

CO2 Intensity (gCO2/kWh)

194.82
Average

84
Lowest

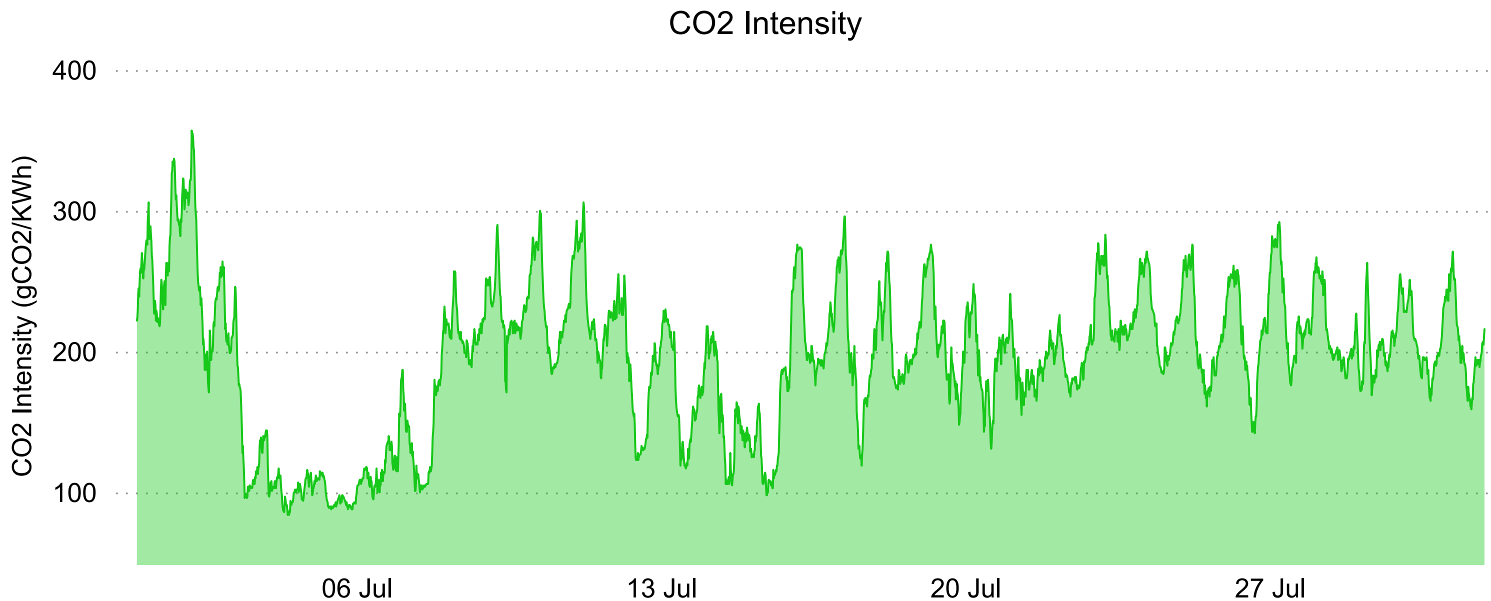
357
Highest

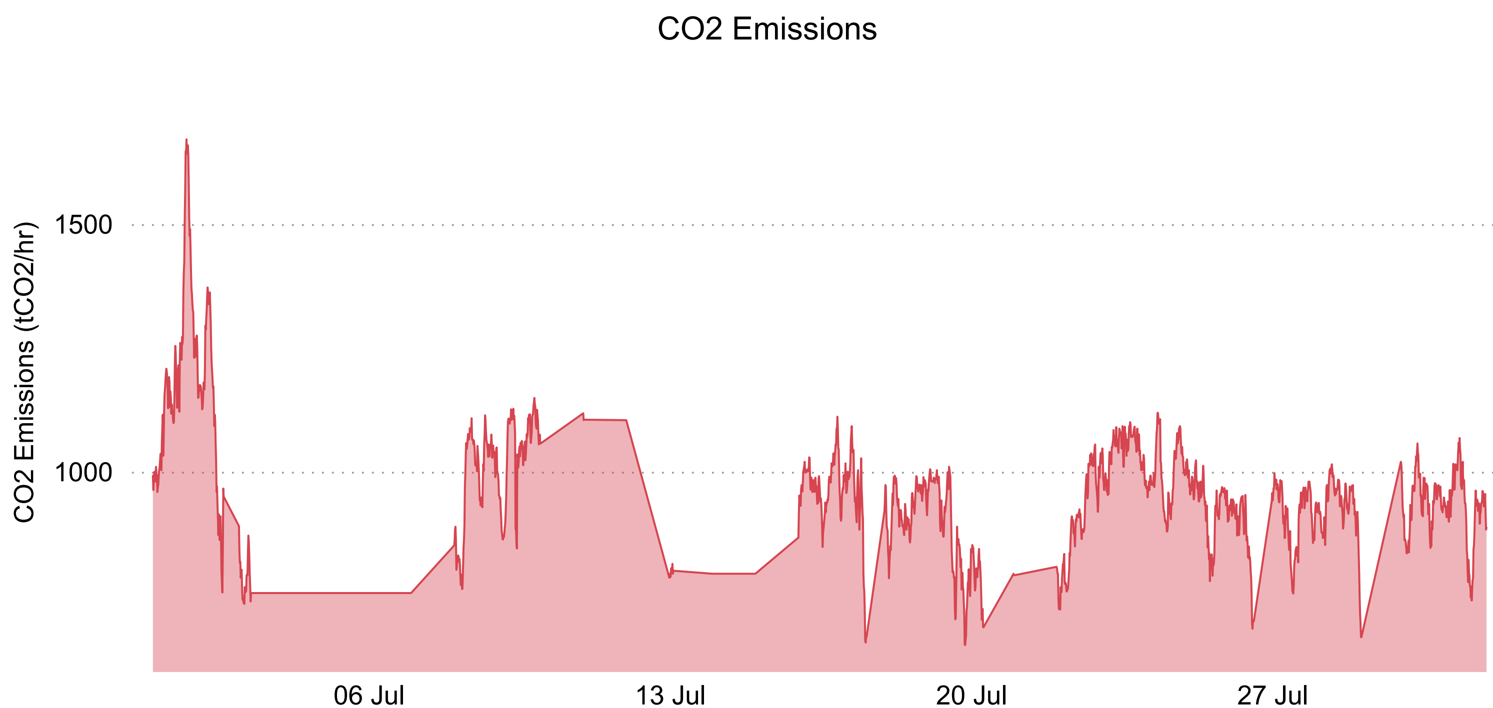
CO2 Emissions (tCO2/hr)

963.58
Average

650
Lowest

1671
Highest





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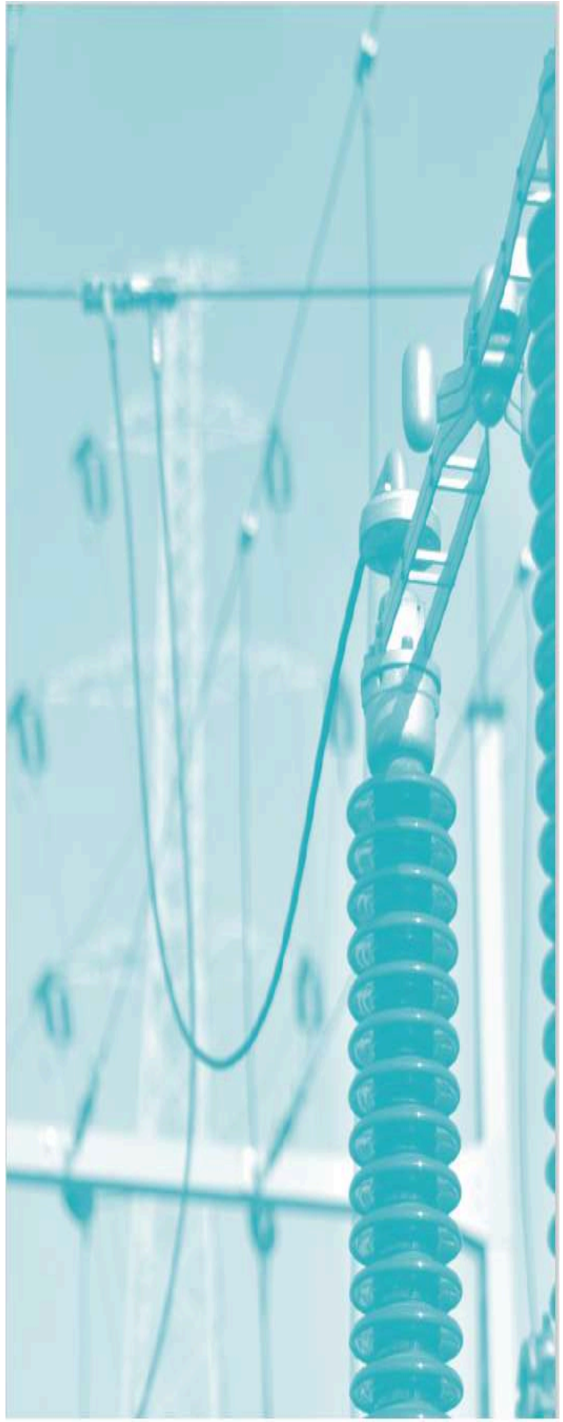
CO_2 Intensity

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.



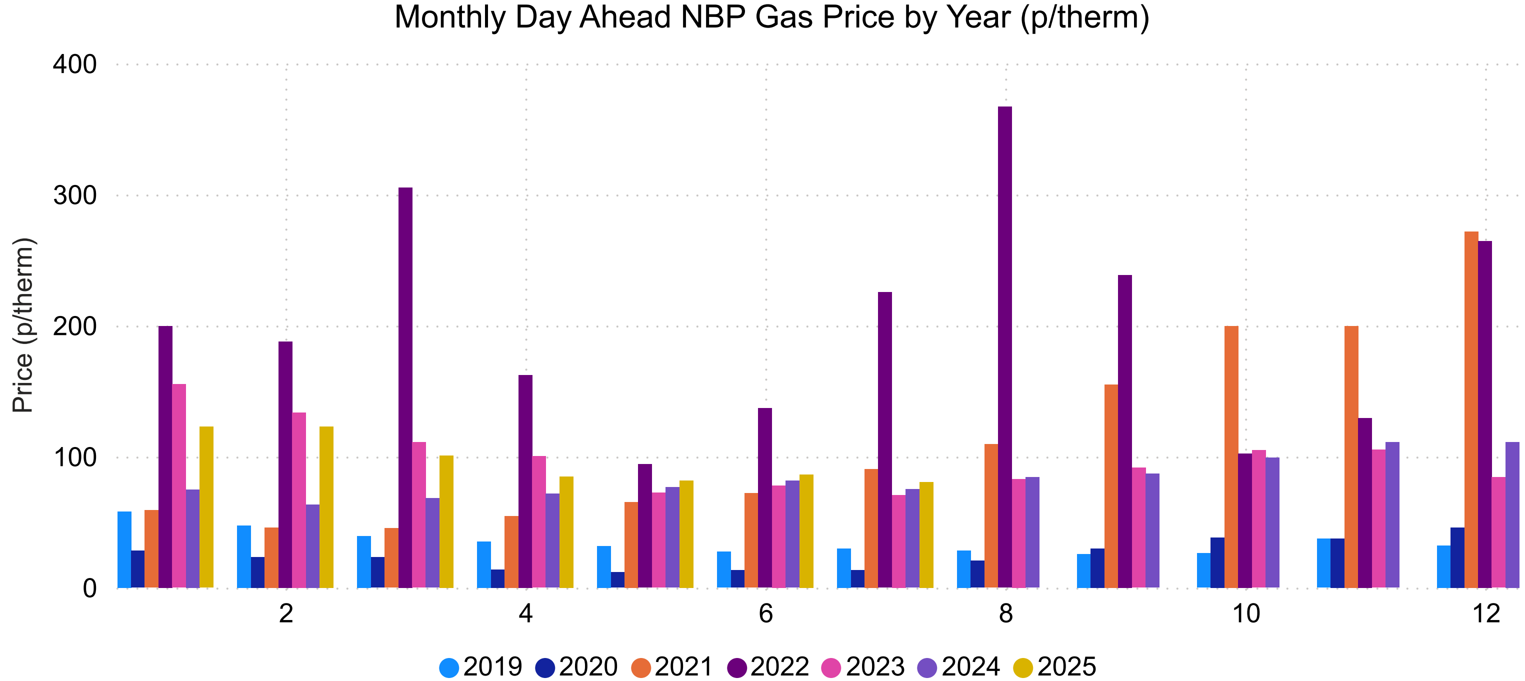
Fuel Costs and Spreads

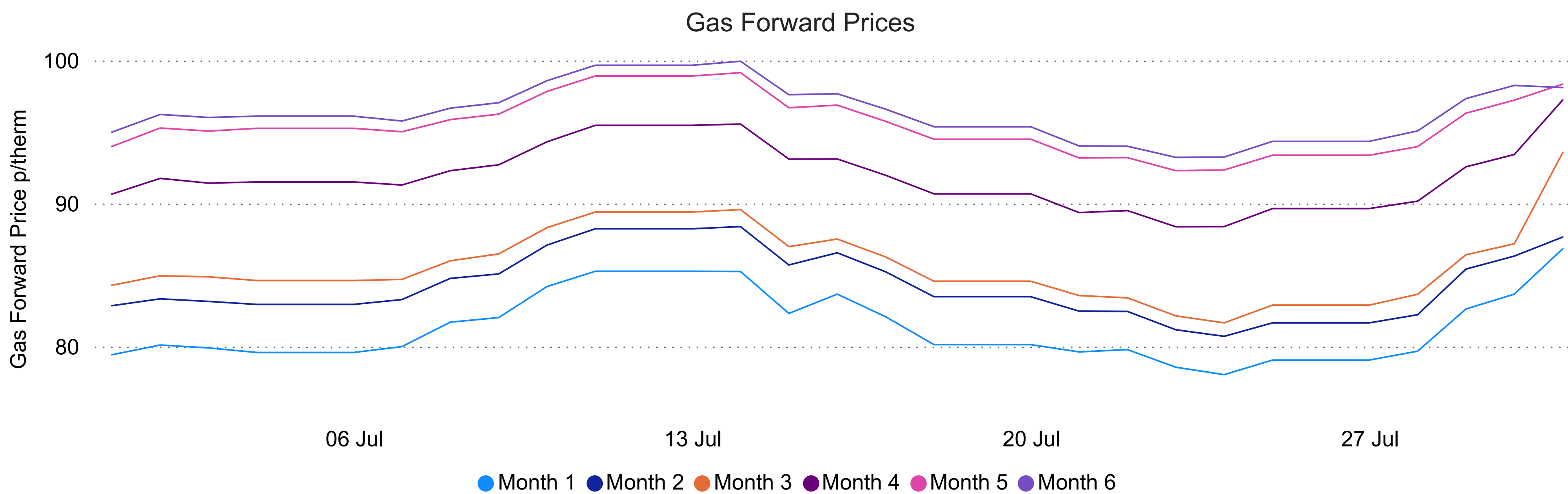
Gas Price July 2025

80.69
Monthly Average (p/therm)

77.10
Monthly Low (p/therm)

83.65
Monthly High (p/therm)





Gas Prices

Gas prices experienced an average decrease of 7% compared to the previous month.

Gas Forward Prices

EU gas storage levels are currently well below seasonal norms, contributing to upward pressure on forward gas prices. However, continued injections will be critical over the next 2 months to meet winter demand and maintain supply security.

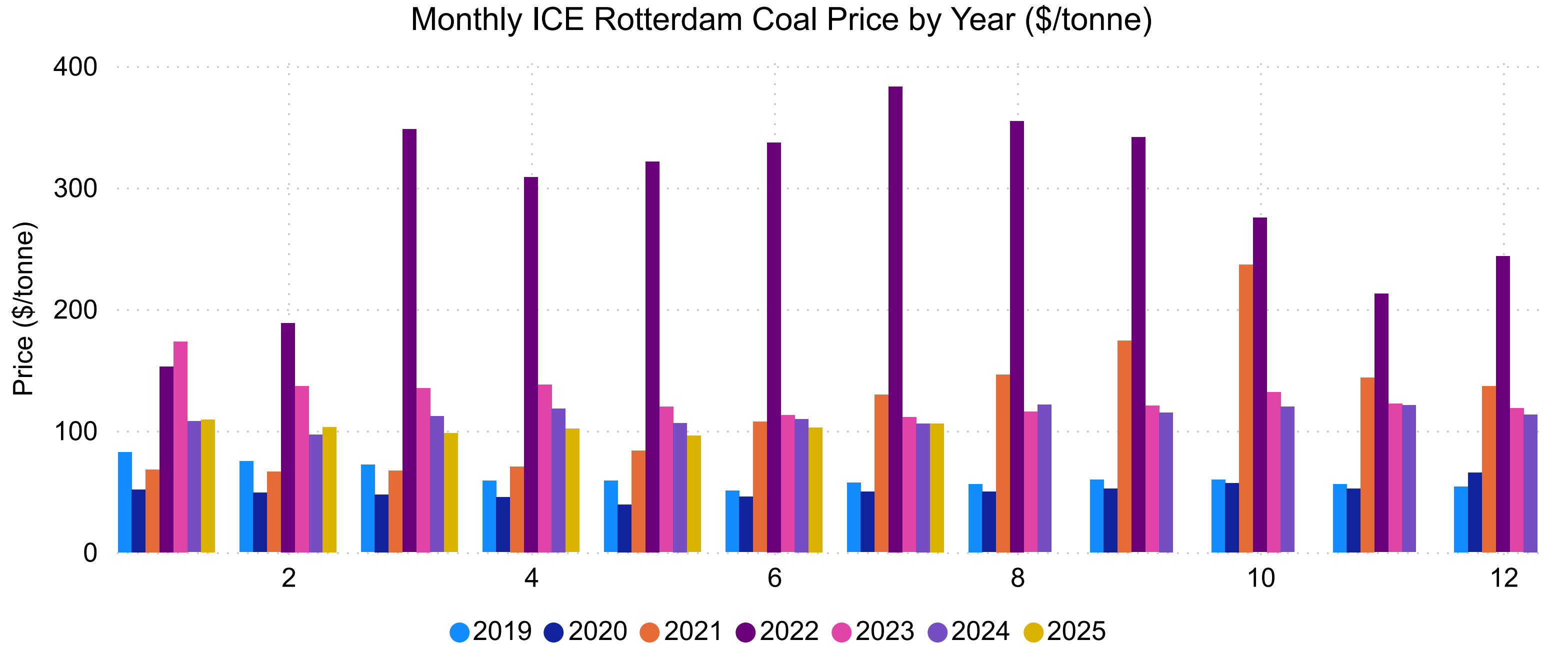
Coal Price
July 2025

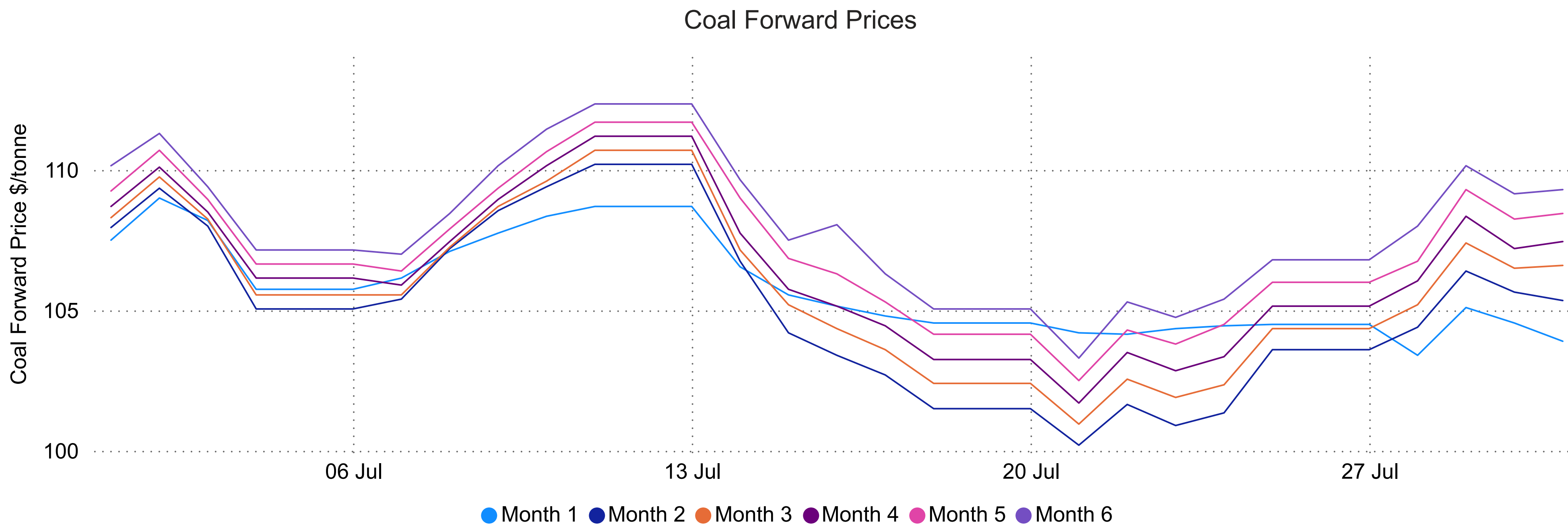
Coal Prices Per Tonne

$105.83
Monthly Average

$103.40
Monthly Low

$109.00
Monthly High





SEM committee

Coal Prices

Coal prices averaged $105.83/tonne, increasing 3% from the previous month.

Carbon Price July 2025

EU Carbon Prices (€/tonne)

€ 71.03
Monthly Average

€ 69.18
Monthly Low

€ 73.25
Monthly High

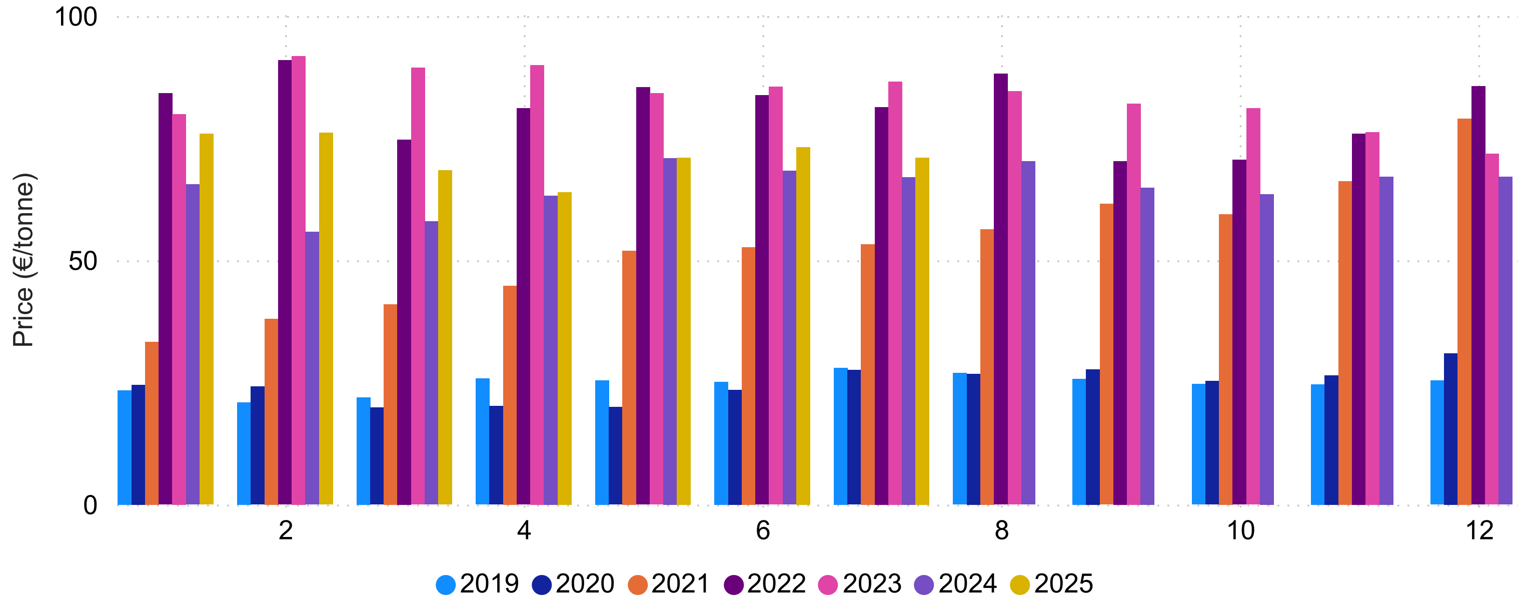
UK Carbon Prices (€/tonne)

€ 56.77
Monthly Average

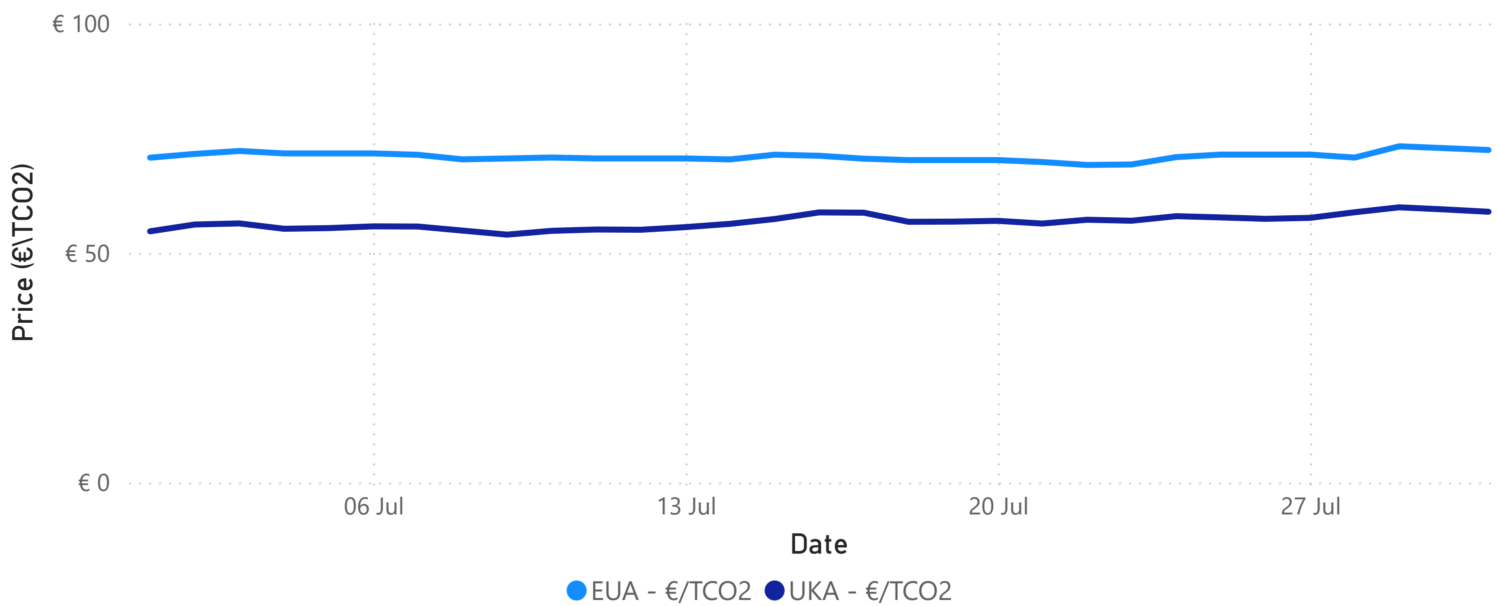
€ 54.00
Monthly Low

€ 59.95
Monthly High

Monthly EU Carbon Permits Price by Year (€/tonne)



UK & EU Carbon Prices



Carbon Prices

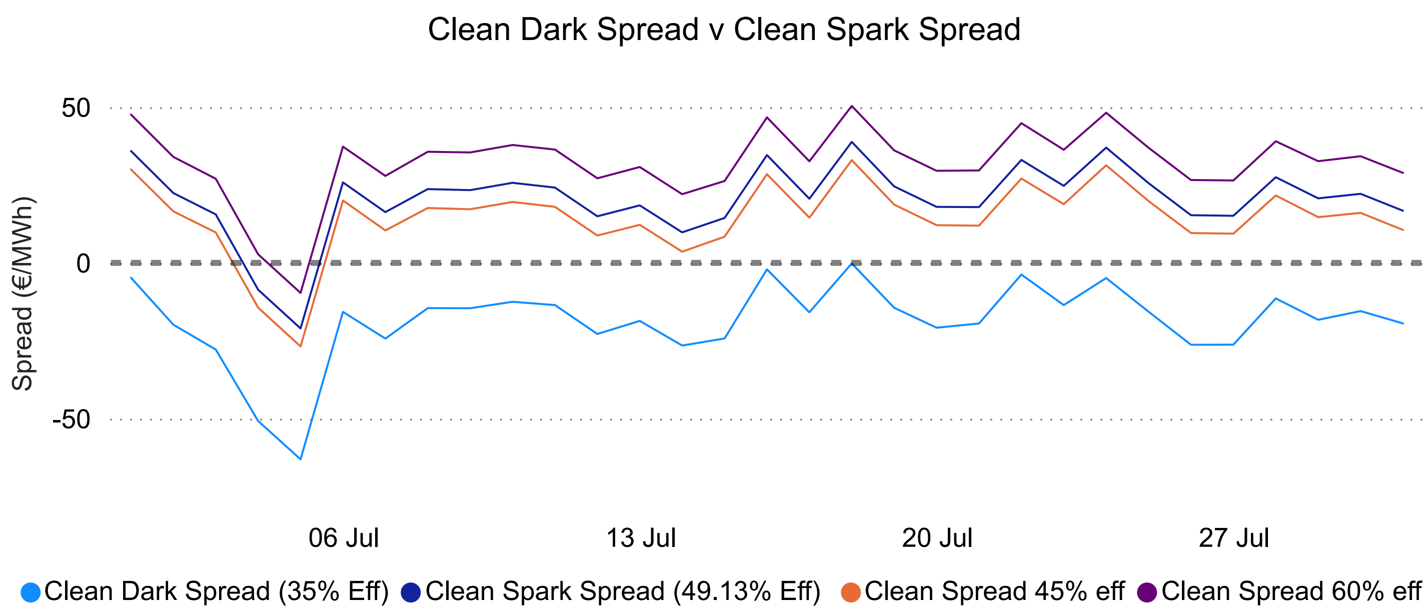
Carbon prices averaged €71.03/tonne, with a 3% decrease on average from last month.

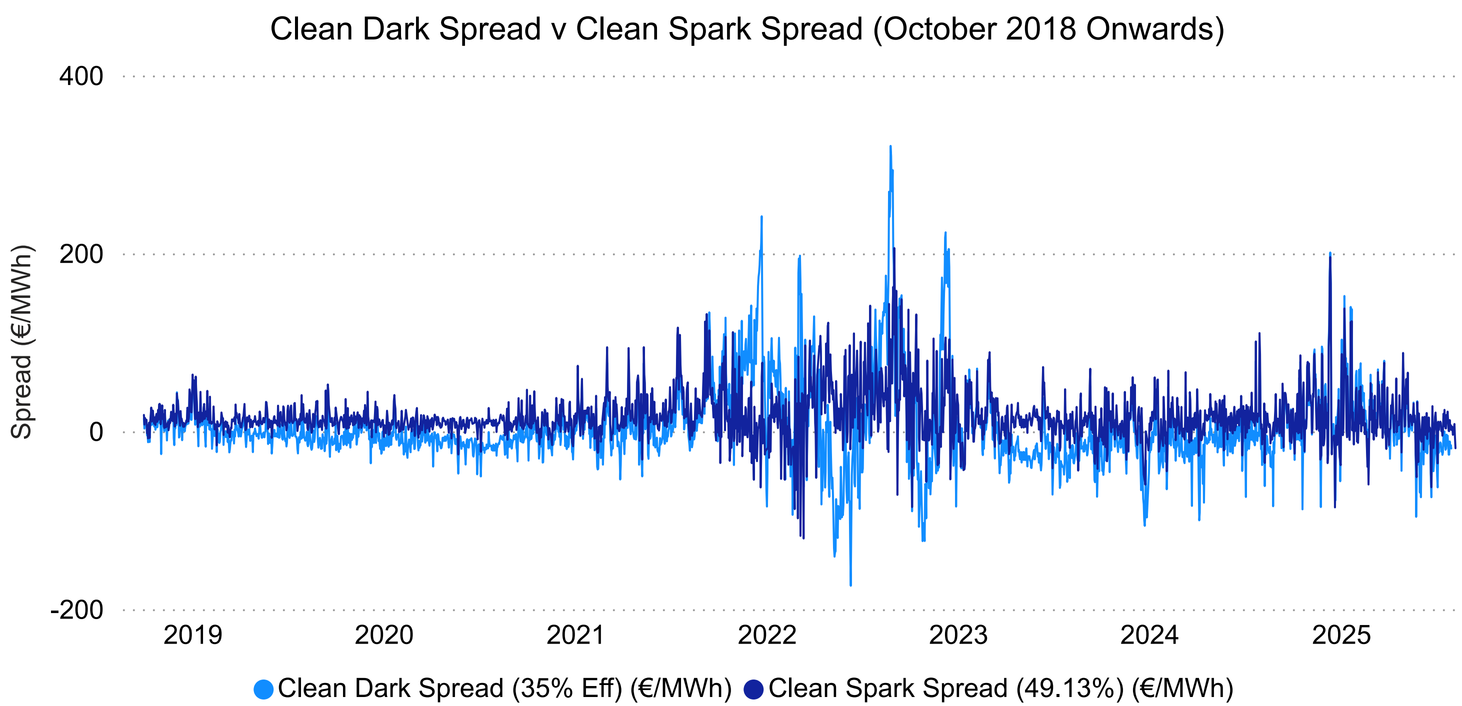
Carbon prices are heavily reliant on wind output levels. However, with above normal temperatures this reduces power-for-heating requirements across Europe and limits stronger gains across the scheme.

Spark Spreads
July 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 notably after the 5th July. This is attributed to strong wind generation. With an average DAM price of €60/MWh on the 5th July and an estimated Short-run marginal cost for a CCGT (49.13% Eff) of €82/MWh, the theoretical Spark Spread would therefore be -€22/MWh.