

Energy Market Monitoring Report

May 2023



Market Results

Summary Dashboard

Monthly Averages	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23
DAM (€/MWh)	181.84	267.19	387.64	283.25	136.09	143.12	276.52	162.16	159.19	145.25	125.57	105.19
% Change from previous month	27%	47%	45%	-27%	-52%	5%	93%	-41%	-2%	-9%	-14%	-16%
% Change from previous year	91%	86%	195%	45%	-37%	-30%	10%	-20%	-9%	-50%	-42%	-27%
Actual System Demand (MW)	4169	4085	4099	4197	4330	4733	4885	4885	4782	4833	4469	4276
% Change from previous month	-1%	-2%	0%	2%	3%	9%	3%	0%	-2%	1%	-8%	-4%
% Change from previous year	2%	-1%	-1%	-2%	-1%	0%	2%	1%	-1%	3%	1%	2%
Actual Wind Generation (MW)	1129	854	817	1081	2047	2233	1647	1987	2026	1748	1545	884
% Change from previous month	-21%	-24%	-4%	32%	89%	9%	-26%	21%	2%	-14%	-12%	-43%
% Change from previous year	13%	90%	-3%	24%	33%	45%	-16%	18%	-27%	12%	8%	-38%
Gas Price p/therm	139.03	222.44	365.79	235.85	102.32	128.91	264.54	155.16	133.65	110.96	100.32	72.41
% Change from previous month	46%	60%	64%	-36%	-57%	26%	105%	-41%	-14%	-17%	-10%	-28%
% Change from previous year	93%	145%	234%	52%	-49%	-35%	-3%	-22%	-29%	-64%	-38%	-24%
Carbon Price (€/Tonne)	83.74	81.34	88.20	70.29	70.46	75.84	85.61	79.91	91.82	89.41	89.98	84.18
% Change from previous month	-2%	-3%	8%	-20%	0%	8%	13%	-7%	15%	-3%	1%	-6%
% Change from previous year	59%	52%	56%	14%	19%	15%	8%	-5%	1%	20%	11%	-1%
Coal Price (\$/tonne)	337.07	383.18	354.67	341.33	275.16	212.52	243.46	173.25	136.71	134.95	137.83	119.57
% Change from previous month	5%	14%	-7%	-4%	-19%	-23%	15%	-29%	-21%	-1%	2%	-13%
% Change from previous year	214%	196%	142%	96%	16%	48%	78%	14%	-27%	-61%	-55%	-63%
EWIC % Import Periods	27.16%	33.03%	25.84%	16.25%	30.51%	18.61%	30.58%	49.03%	38.91%	50.00%	50.56%	75.86%
EWIC % Export Periods	43.56%	56.52%	51.92%	41.81%	46.24%	54.10%	35.08%	23.66%	27.19%	16.47%	13.65%	8.28%
EWIC % Not Flow Periods	29.28%	10.45%	22.24%	45.28%	23.25%	27.29%	34.34%	27.32%	33.89%	23.86%	30.80%	15.88%
Moyle % Import Periods	40.44%	24.90%	31.55%	35.35%	40.52%	29.51%	44.19%	62.05%	53.65%	64.68%	77.50%	85.42%
Moyle % Export Periods	59.56%	10.72%	66.26%	63.85%	59.44%	69.83%	55.78%	37.95%	46.02%	25.50%	27.43%	14.58%
Moyle % Not Flow Periods	0.00%	64.38%	2.18%	0.80%	0.03%	0.66%	0.03%	0.00%	0.33%	0.13%	0.07%	0.00%

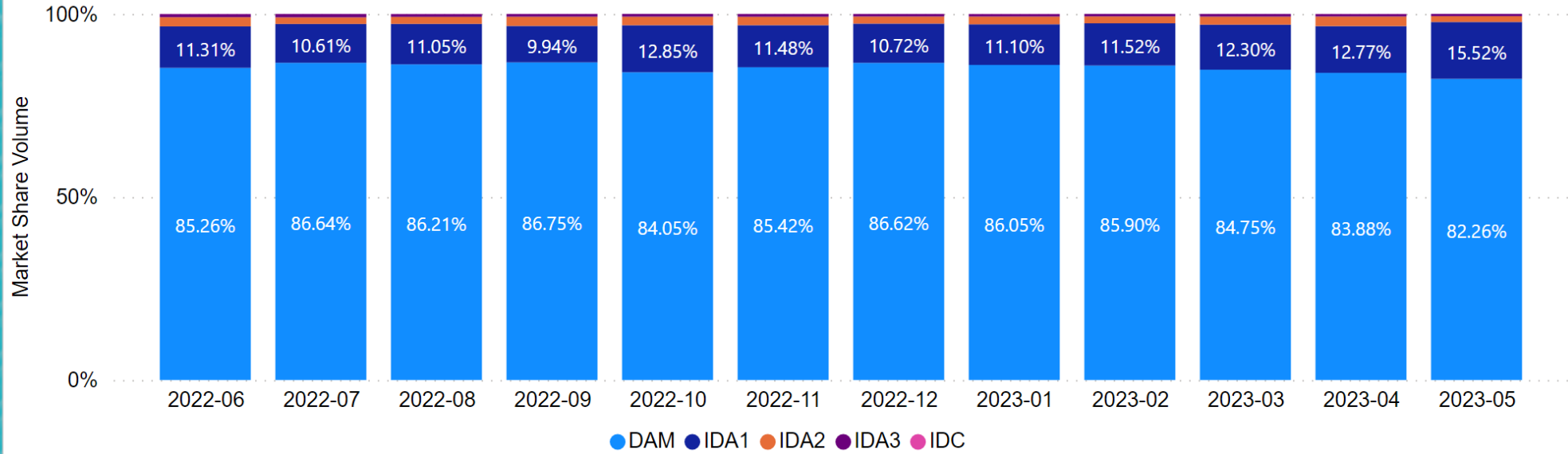
Market Volumes May 2023

Daily Average Volume	MWh
DAM	108,547
IDA1	20,487
IDA2	2,107
IDA3	808
IDC	24

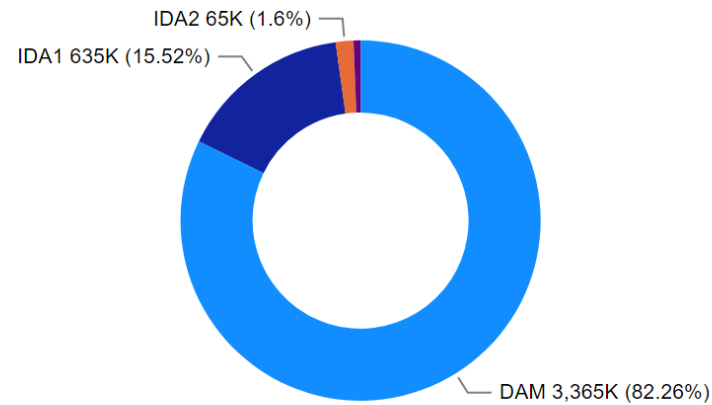
Total Monthly Volume	MWh
DAM	3,364,968
IDA1	635,094
IDA2	65,306
IDA3	25,037
IDC	482
Total	4,090,888

Total Market Value	€
DAM	€ 358,872,766
IDA1	€ 66,231,688
IDA2	€ 6,807,094
IDA3	€ 2,778,375
IDC	€ 39,757
Total	€ 434,729,680

Ex-Ante Monthly Volume by Market

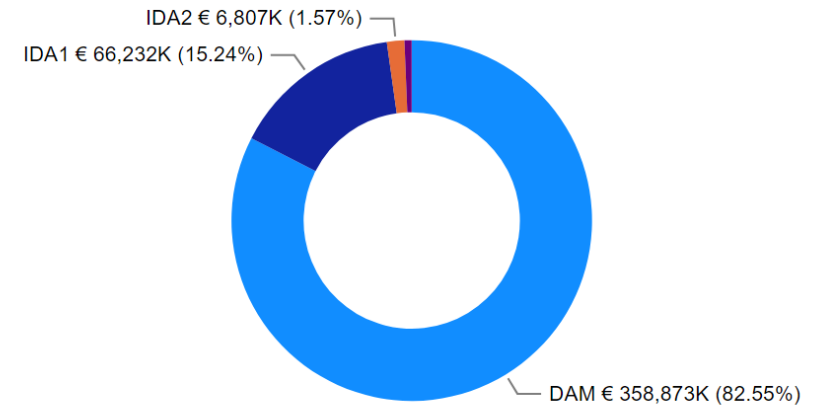


Ex-Ante Volumes (MWh)



● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

Ex-Ante Values (€)



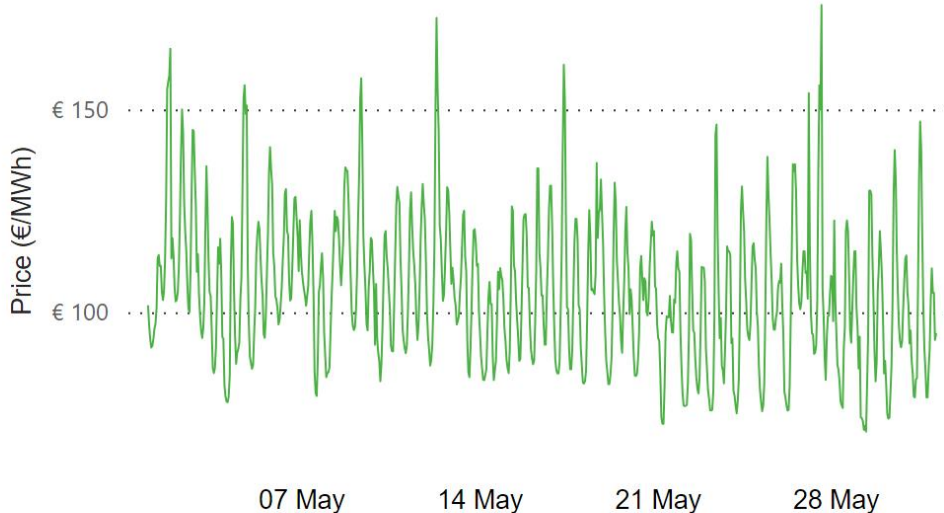
● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

Day Ahead Market May 2023

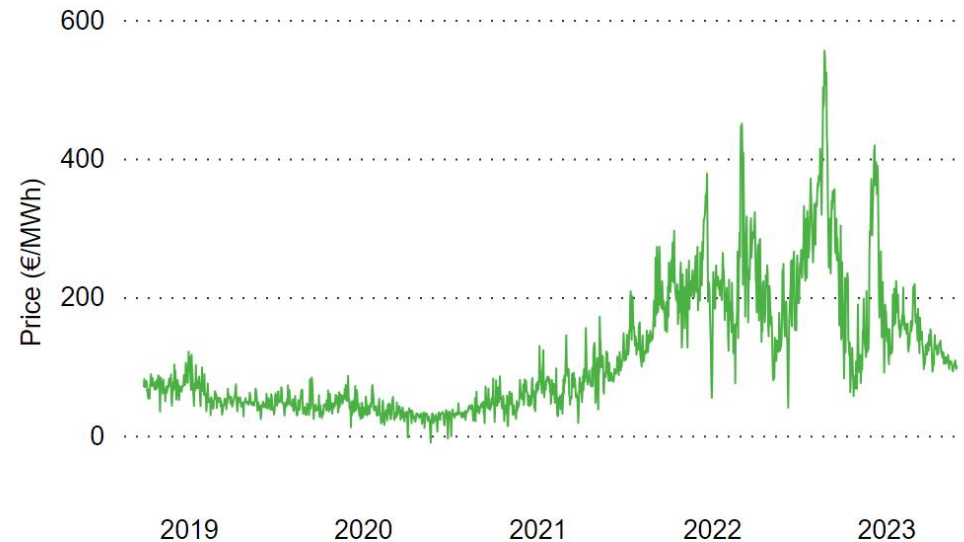
€ 105.19
Average DAM Price
€ 70.58
Min DAM Price
€ 175.73
Max DAM Price

The most frequent price range for May was between €90 and €120

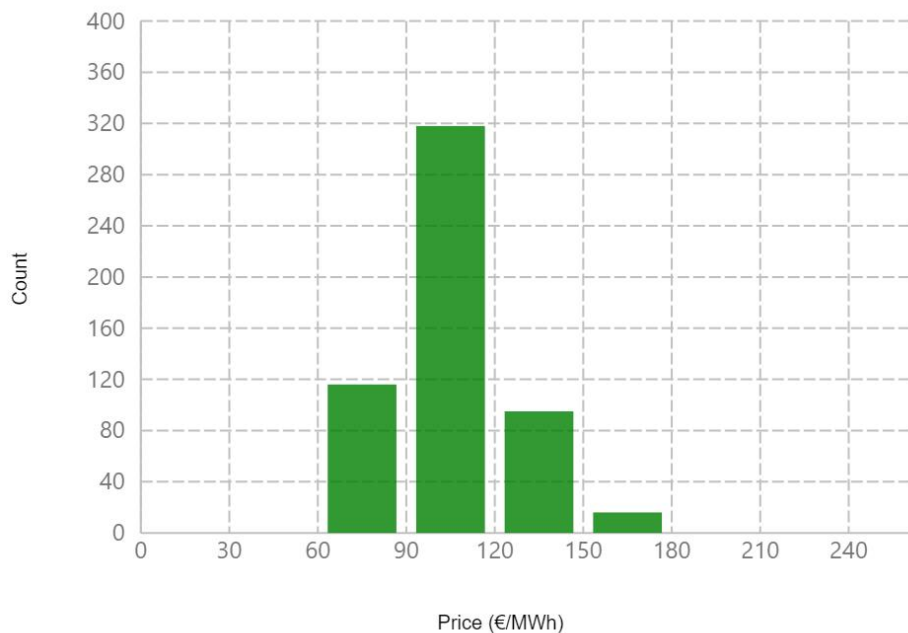
DAM Prices



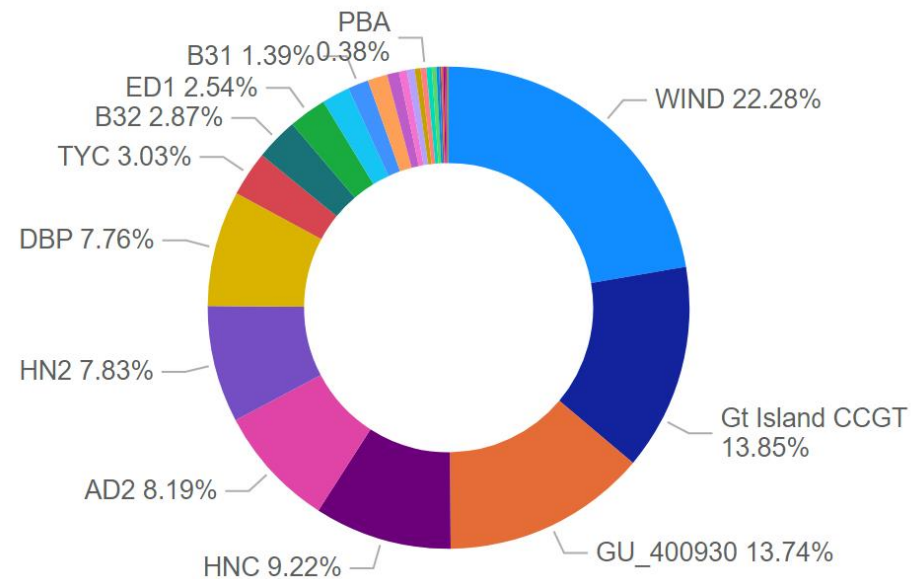
Historic Daily Average DAM Prices



Histogram of DAM Prices



DAM Sell Side Generator Order Results



Intraday Market May 2023

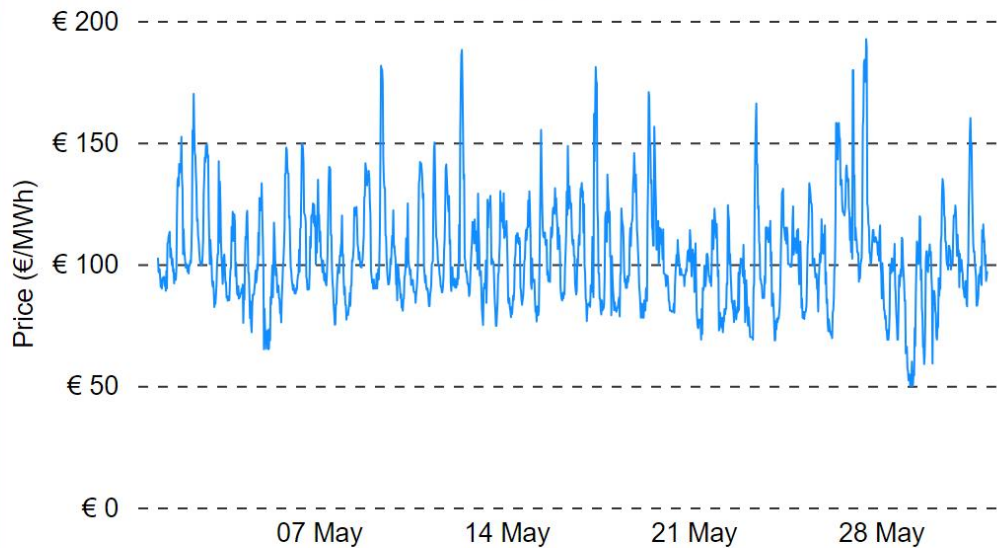
€ 103.11
Average IDA1 Price

€ 50.00
Min IDA1 Price

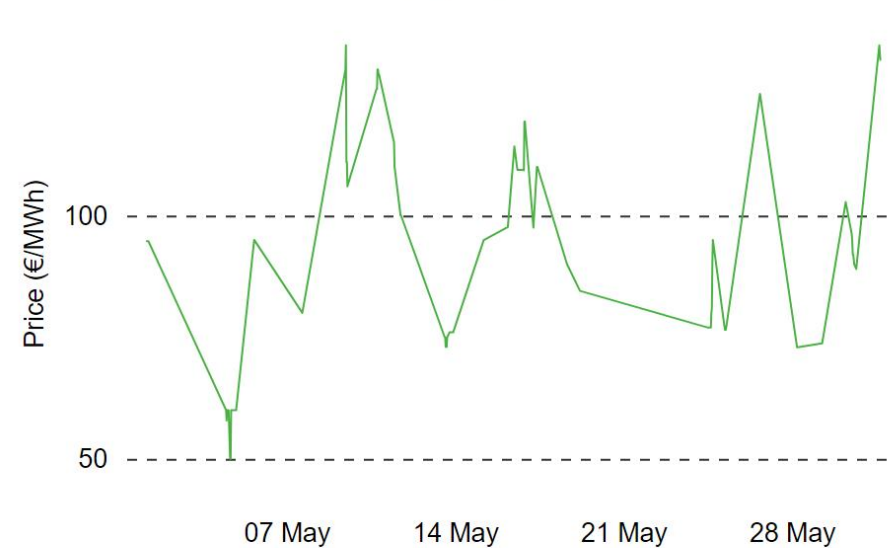
€ 192.50
Max IDA1 Price

The most frequent price range for May was between €90 and €120

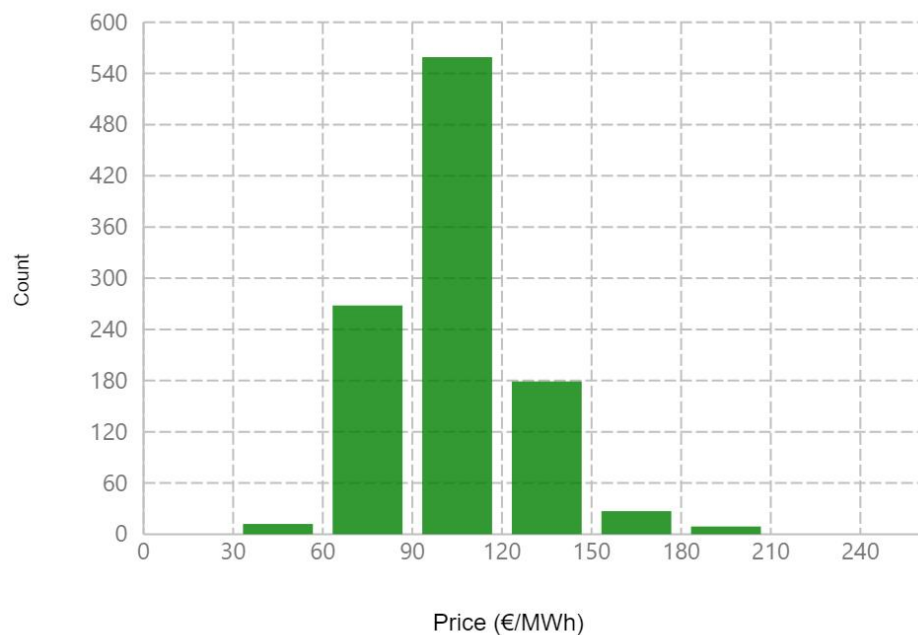
IDA 1 Prices



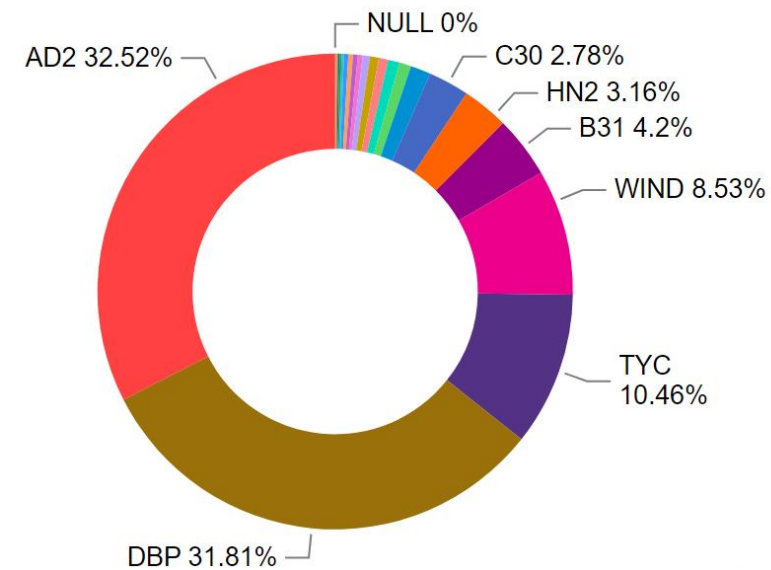
IDC Prices



Histogram of IDA1 Prices



IDA1 Sell Order Results By Market Participant



SEM vs GB May 2023

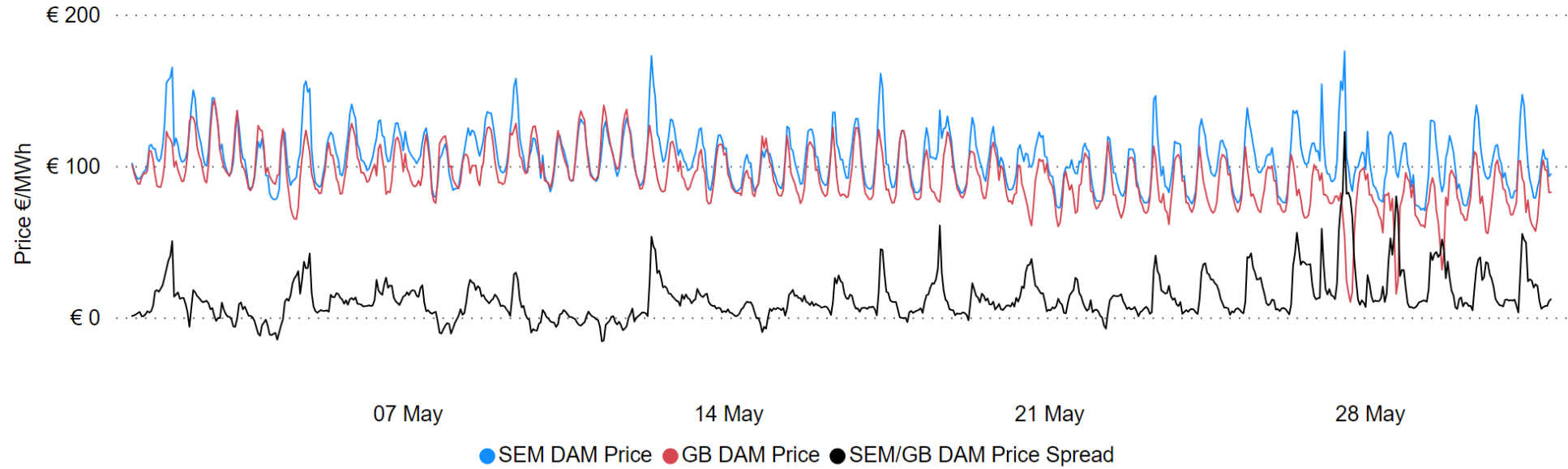
SEM Day Ahead Price
 € 105.19
 Average Price
 € 70.58
 Min Price
 € 175.73
 Max Price

GB Day Ahead Price
 € 92.65
 Average Price
 € 10.16
 Min Price
 € 143.59
 Max Price

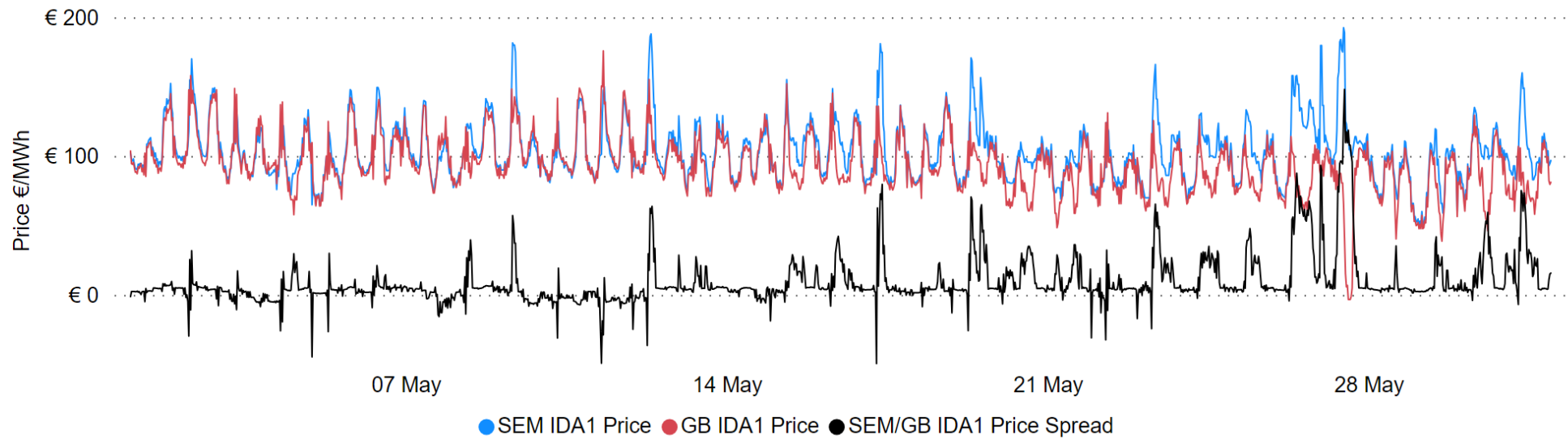
SEM IDA1 Price
 € 103.11
 Average Price
 € 50.00
 Min Price
 € 192.50
 Max Price

GB IDA1 Prices
 € 93.75
 Average Price
 -€ 3.34
 Min Price
 € 175.84
 Max Price

SEM & GB DAM Prices



SEM & GB IDA1 Prices



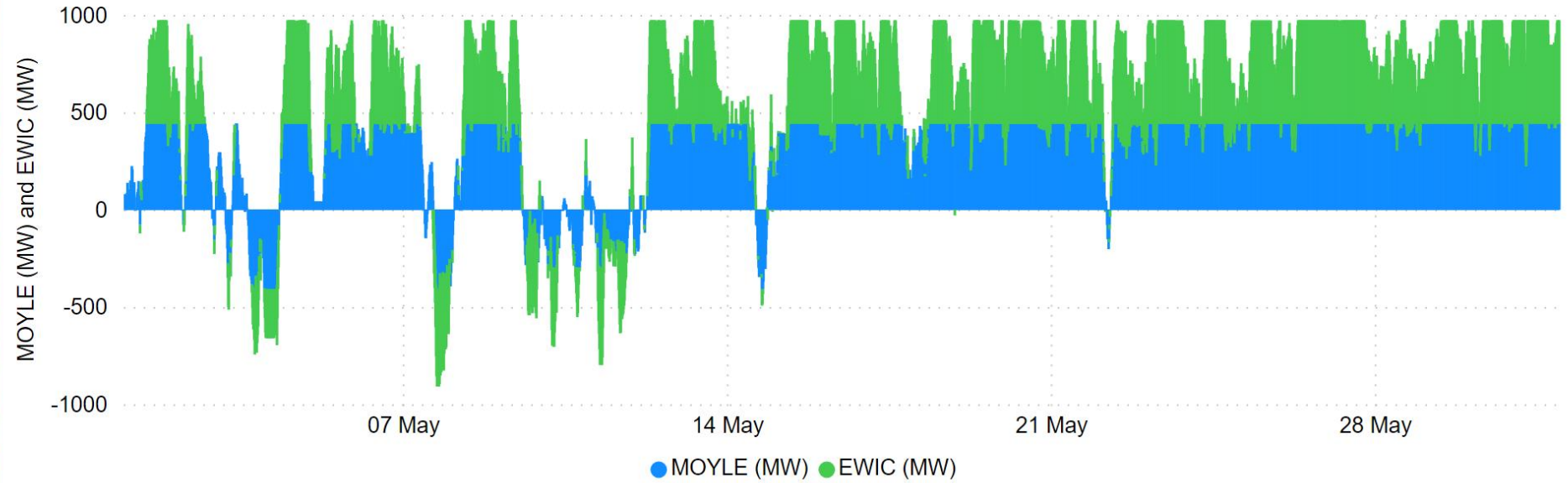
SEM Interconnectors

May 2023

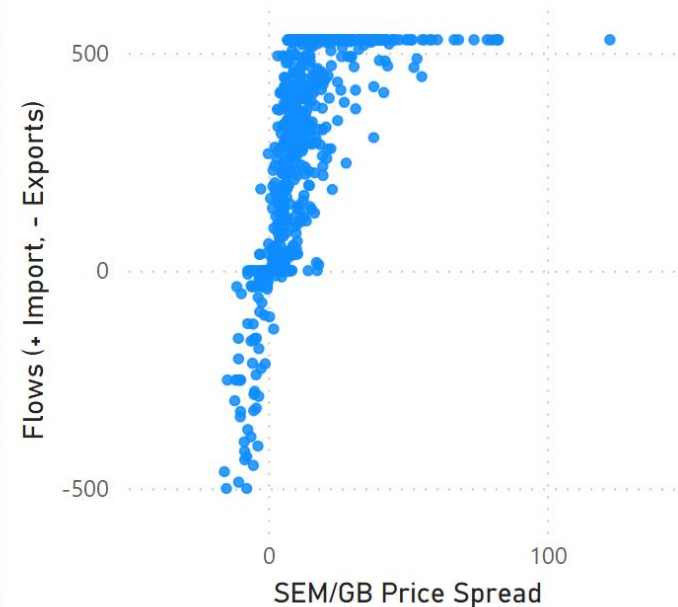
Events of capacity curtailment (by the SEM TSO) in the direction SEM to GB.

Moyle	EWIC
2nd 06:00 to 13:00	2nd 06:00 to 12:00
5th 07:00 to 21:00	5th 07:00 to 13:00
6th 07:00 to 21:00	6th 05:00 to 19:00
9th-10th 07:00 to 22:00	12th 05:00 to 23:00
12th 05:00 to 22:00	13th 06:00 to 14:00
13th 06:00 to 22:00	15th 07:00 to 21:00
15th 06:00 to 23:00	16th 06:00 to 22:00
16th 05:00 to 23:00	17th 05:00 to 20:00
17th 05:00 to 22:00	18th 09:00 to 20:00
18th 06:00 to 23:00	19th 06:00 to 22:00
19th 05:00 to 23:00	20th 08:00 to 20:00
21st 09:00 to 22:00	21st 10:00 to 14:00
22nd 06:00 to 22:00	24th 06:00 to 18:00
24th 05:00 to 23:00	25th 06:00 to 21:00
26th 04:00 to 23:00	26th 05:00 to 23:00
27th 00:00 to 22:00	27th 06:00 to 20:00
28th 07:00 to 23:00	28th 09:00 to 18:00
29th 06:00 to 23:00	29th 06:00 to 22:00
30th 05:00 to 22:00	30th 06:00 to 22:00
31st 05:00 to 22:00	31st 06:00 to 20:00

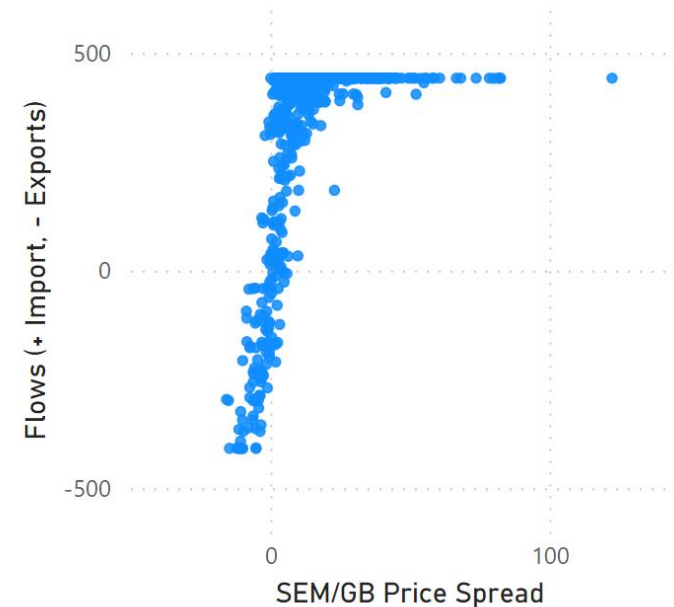
SEM Interconnector Flows



EWIC Flows vs SEM/GB Price Spread



Moyle Flows vs SEM/GB Price Spread

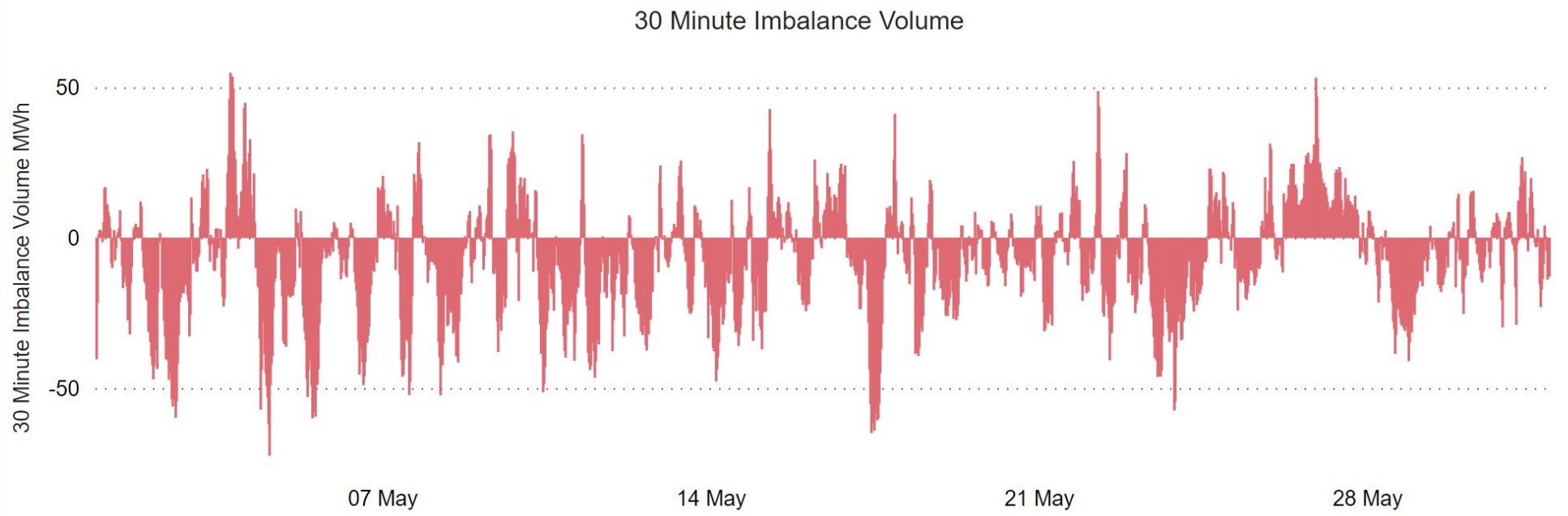
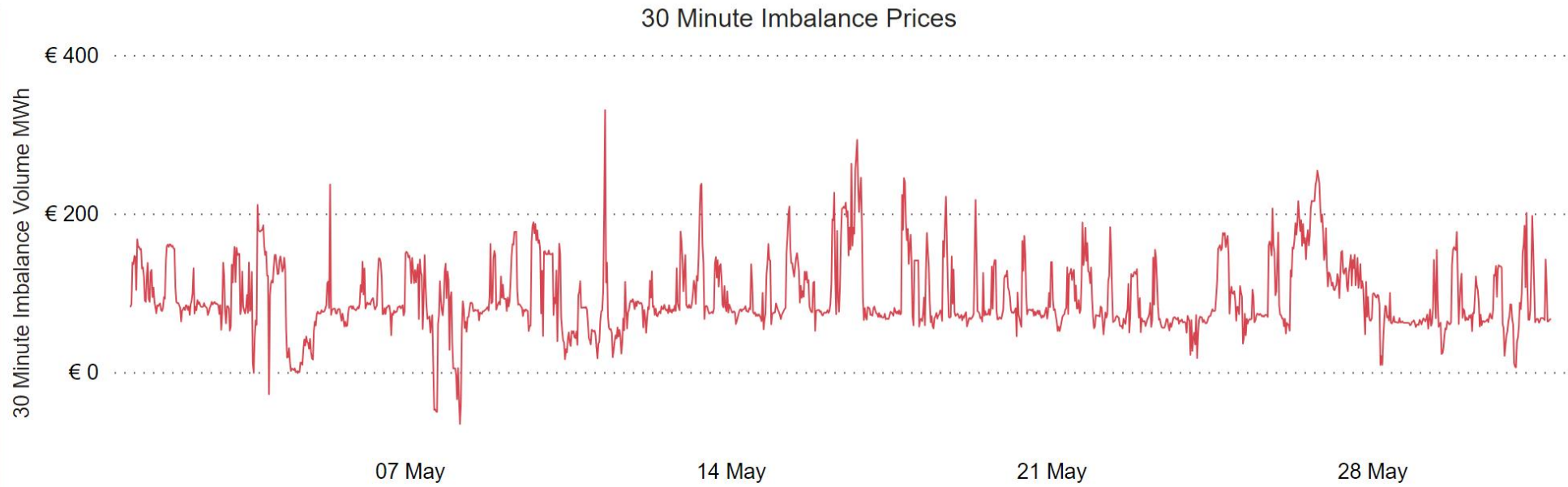


Interconnector Flows

May 2023	MW
Moyle Imports	395
EWIC Imports	372
Moyle Exports	-183
EWIC Exports	-209
SEM Imports	724
SEM Exports	-306
SEM Net Import/Export	580

Balancing Market May 2023

30 Minutes Imbalance Price
€ 93.26
Average Price
-€ 65.56
Lowest Price
€ 330.35
Highest Price



Demand and Generation Mix

Demand May 2023

SEM Demand (MW)

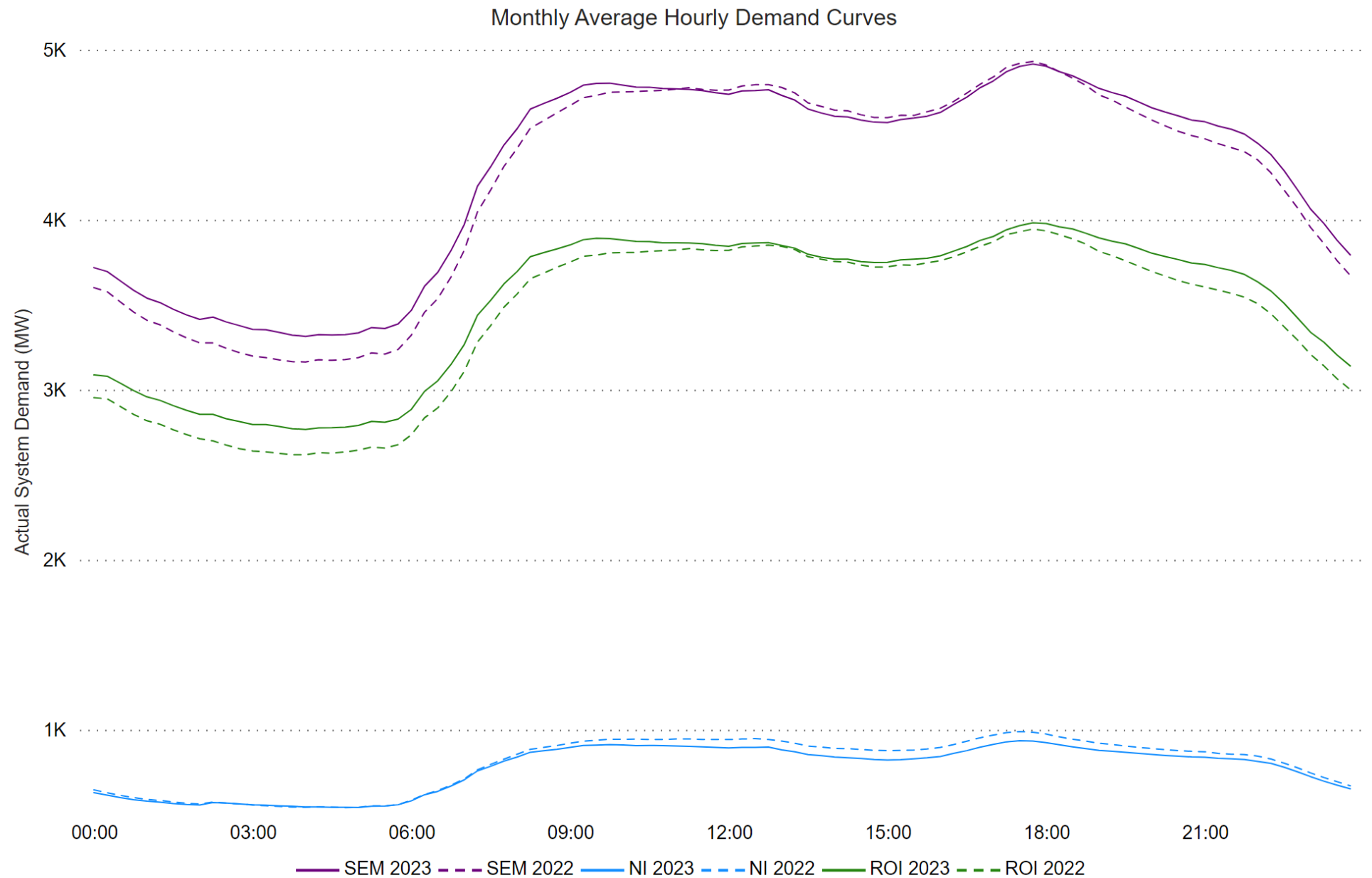
4,276.44	4,207.84
SEM Average 2023	SEM Average 2022
3,314.23	3,163.35
SEM Min 2023	SEM Min 2022
4,915.81	4,930.77
SEM Max 2023	SEM Max 2022

NI Demand (MW)

772.19	800.01
NI Average 2023	NI Average 2022
543.90	542.94
NI Min 2023	NI Min 2022
936.32	990.06
NI Max 2023	NI Max 2022

ROI Demand (MW)

3,504.25	3,407.84
ROI Average 2023	ROI Average 2022
2,766.97	2,618.39
ROI Min 2023	ROI Min 2022
3,981.71	3,945.13
ROI Max 2023	ROI Max 2022

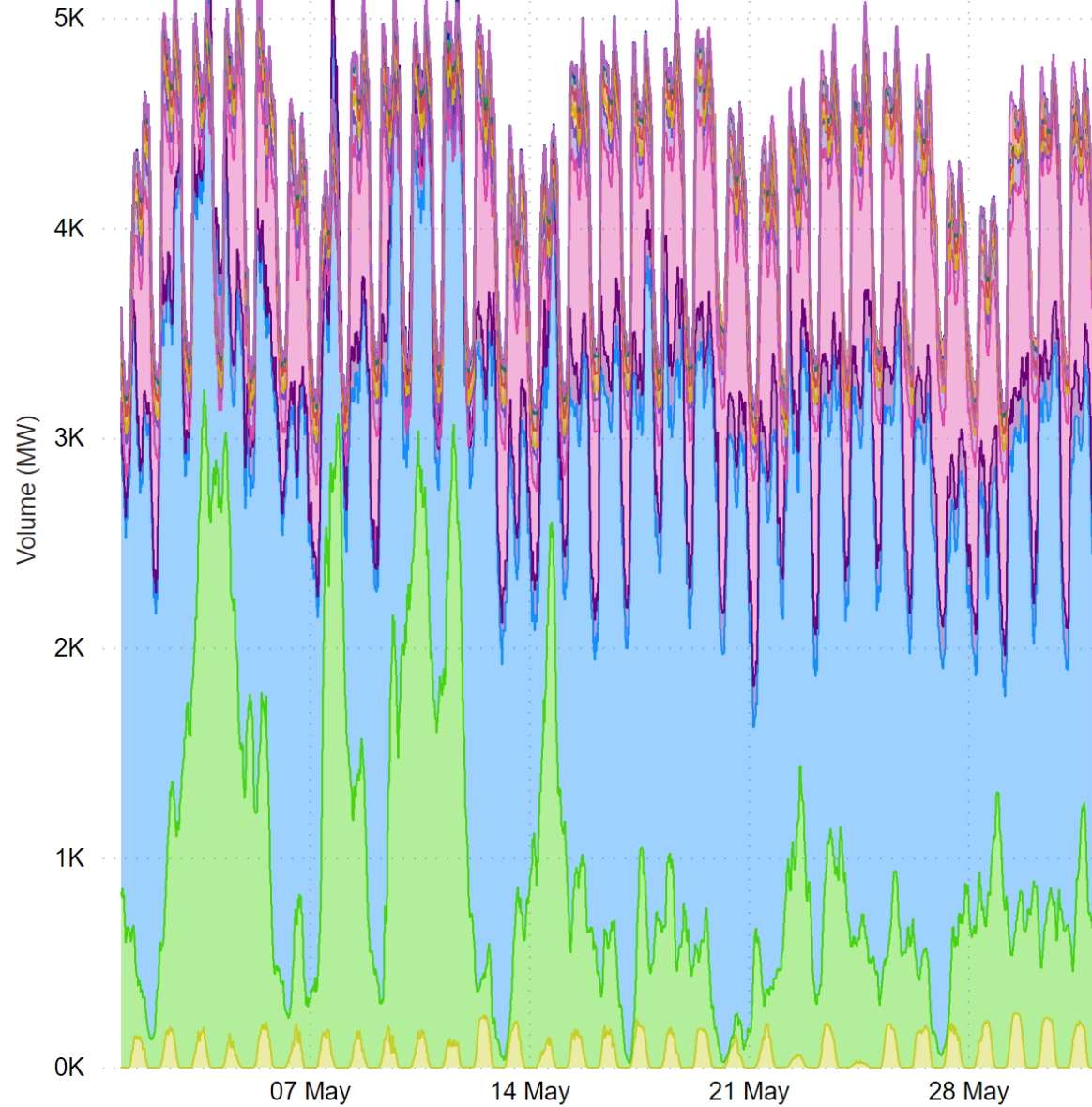


Fuel Mix May 2023

Fuel Type	Average (MW)	%
CCGT	2,098	49.9%
WIND	896	21.3%
INTERCONNECTOR	579.4	13.8%
COAL	190.8	4.5%
HYDRO	51.3	1.2%
CHP	150.9	3.6%
PEAT	76.8	1.8%
WASTE	74.7	1.8%
SOLAR	66.1	1.6%
DSR	27.5	0.6%
OIL	0.7	0.0%
OCGT	0.2	0%
BATTERY	-3.4	-0.1%
PUMPED STORAGE	-4.6	-0.1%

Fuel Type	Max (MW)	Min (MW)
CCGT	3,348	711
WIND	3,114	17
INTERCONNECTOR	976	-900
COAL	439	94
HYDRO	138	0
CHP	166	40
PEAT	89	0
WASTE	82	34
SOLAR	259	0
DSR	39	1
OIL	12	0
OCGT	12	0
BATTERY	49	-35
PUMPED STORAGE	287	-229

SEM 30 Minute Fuel Mix



SEM Fuel Mix
May 2022



SEM Fuel Mix
May 2023

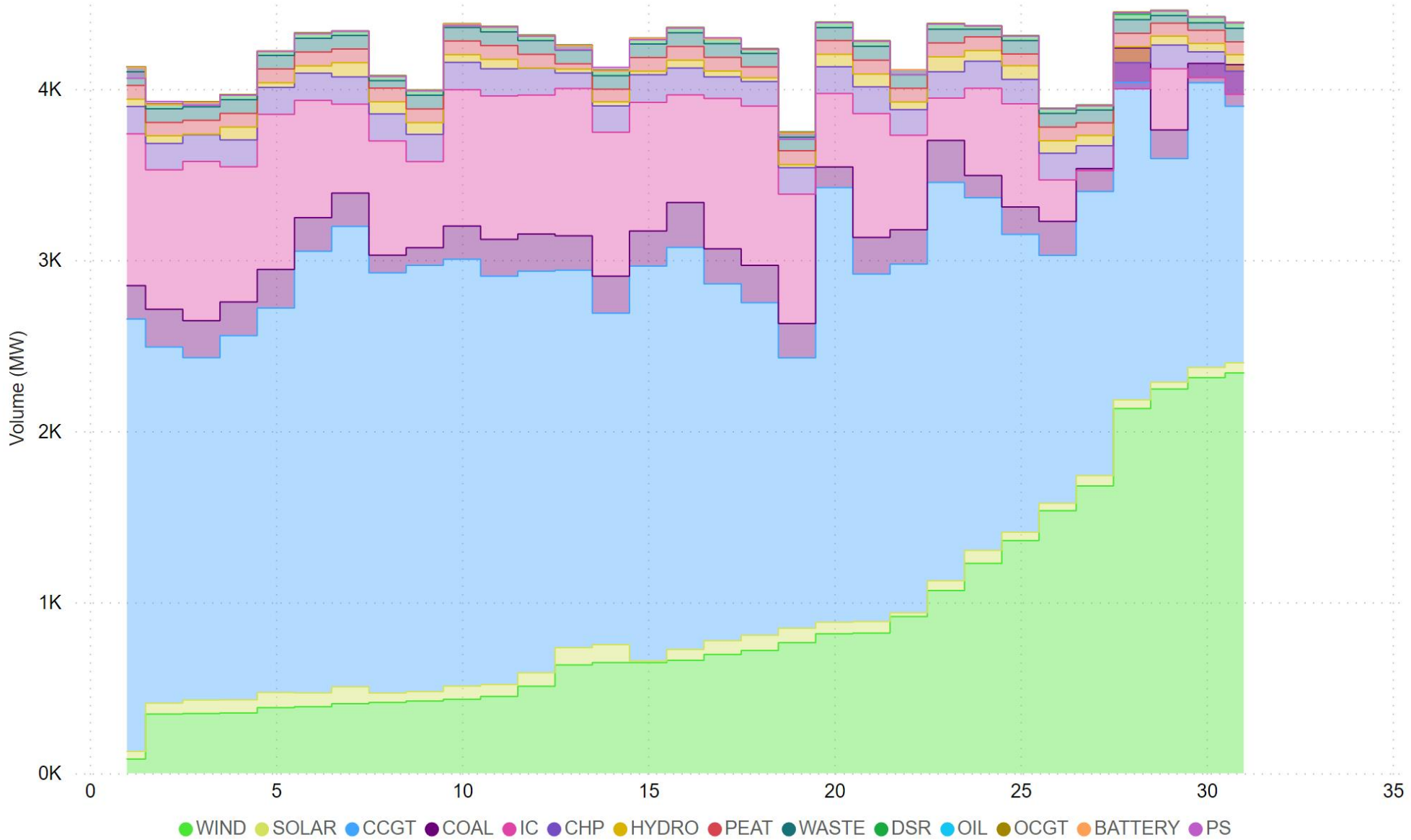


- SOLAR
- WIND
- CCGT
- COAL
- IC
- CHP
- HYDRO
- PEAT
- WASTE
- DSR
- OIL
- OCGT
- BATTERY
- PS

Fuel Mix Ranked by Wind Volume May 2023

This chart shows the average daily fuel mix for the month but instead of being a timeline chart it is ranked by level of wind available from smallest to largest.

Daily SEM Fuel Mix Ranked by Wind Volume for the Month

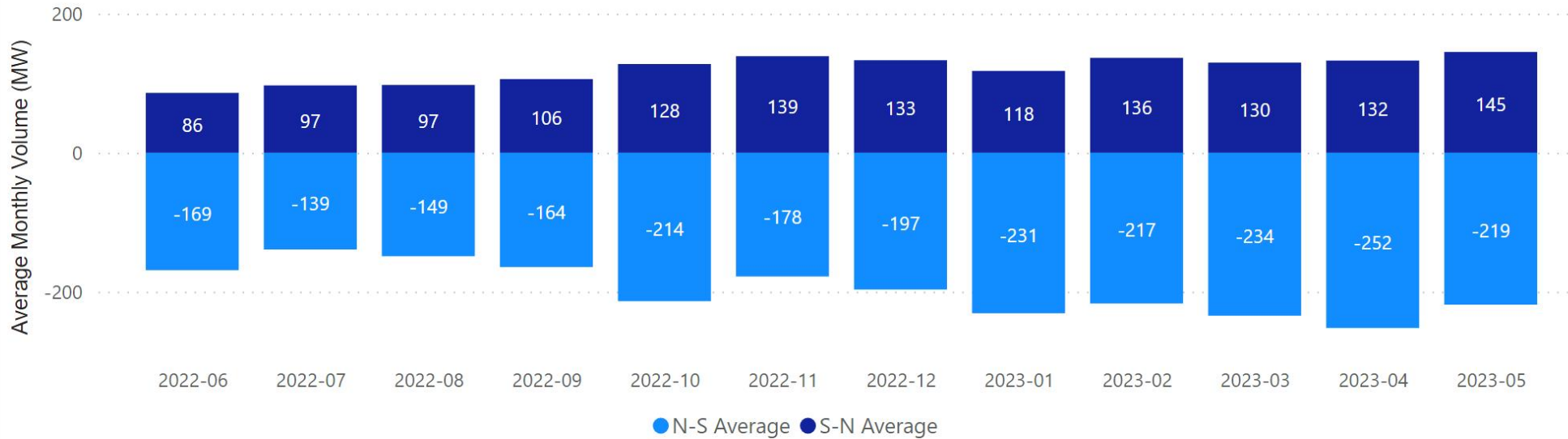


North-South Tie Line May 2023

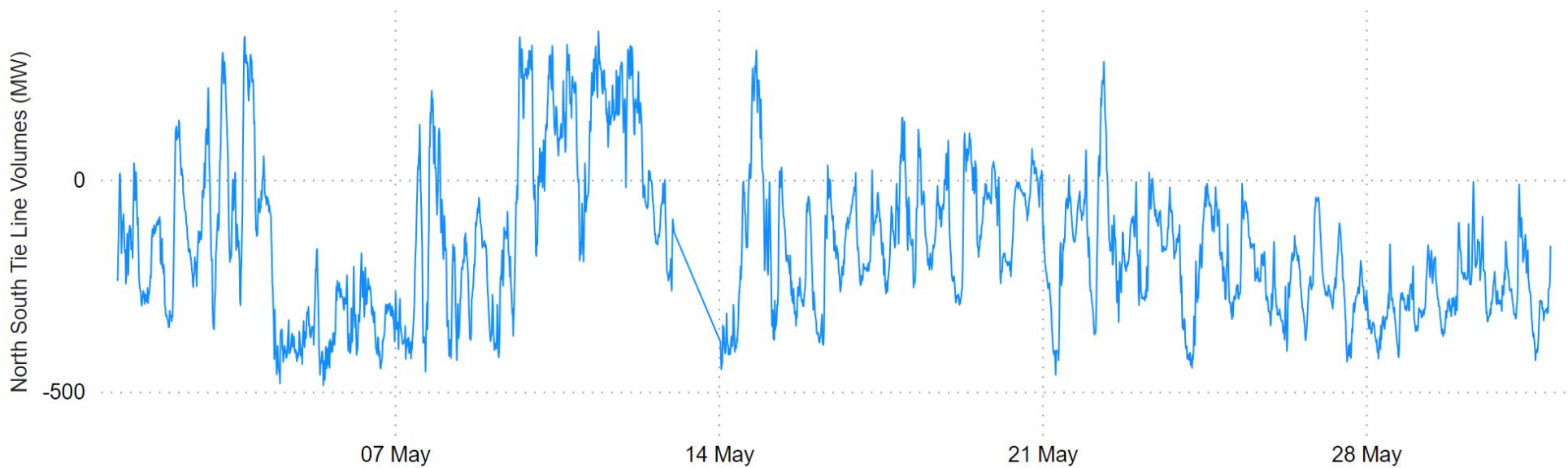
Flow Direction (Average)	MW
NI to ROI	218.59
ROI to NI	144.89
NET NI to ROI	159.29

Note
N_S tie line data missing
13th May 01:00 - 14th May 01:00

Average Flows N-S Tie Line Long Term Trend



North South Tie Line Volumes 15 minute periods

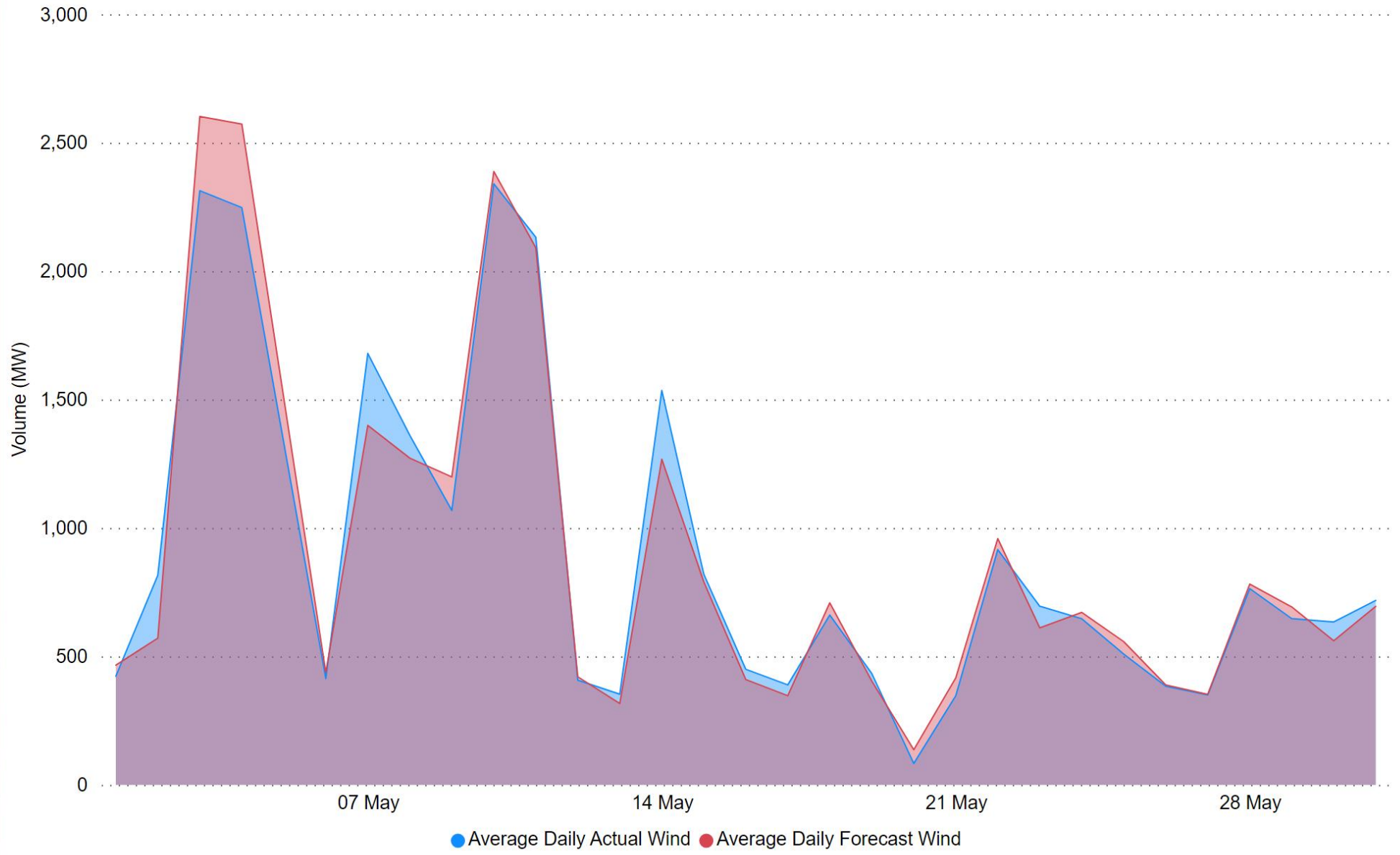


Wind Generation May 2023

Average Daily Actual Wind (MW)
884

Average Daily Forecast Wind (MW)
883

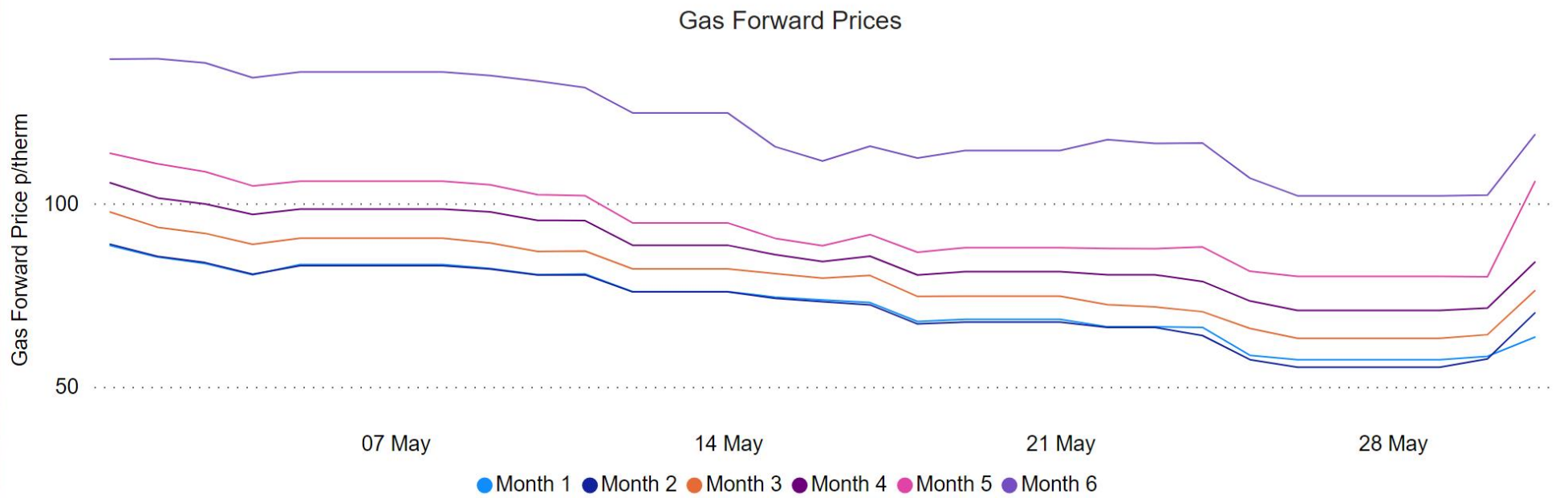
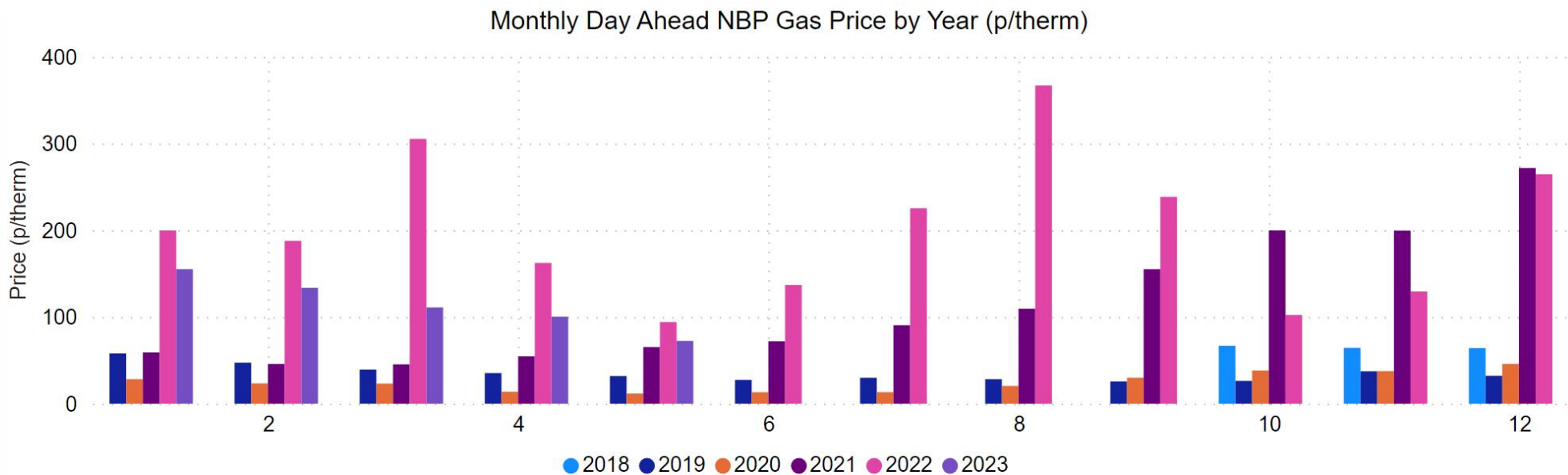
Actual Daily Average Wind Relative to Forecast Daily Average Wind



Fuel Costs and Spreads

Gas Price May 2023

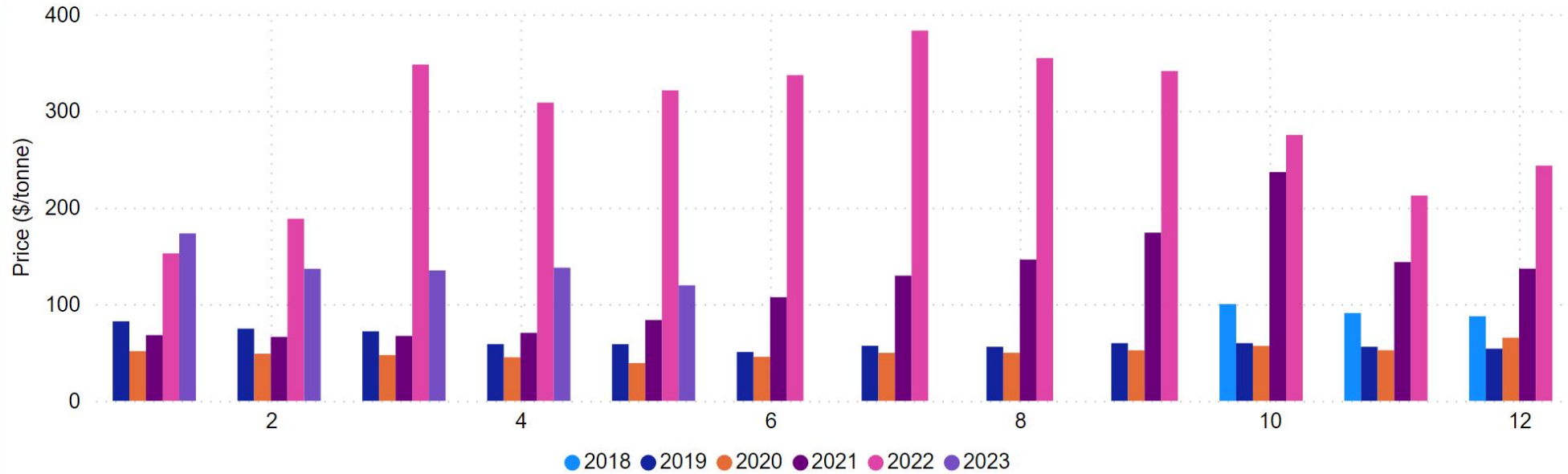
72.41
Monthly Average (p/therm)
58.05
Monthly Low (p/therm)
89.75
Monthly High (p/therm)



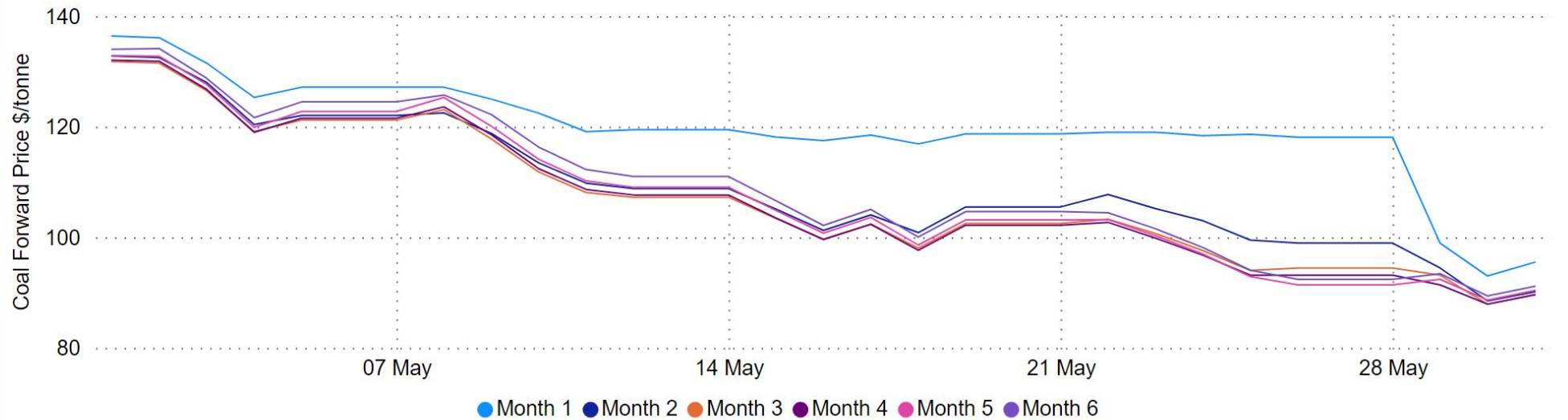
Coal Price May 2023

\$119.57
Monthly Average \$/tonne
\$93.00
Monthly Low \$/tonne
\$136.40
Monthly High \$/tonne

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



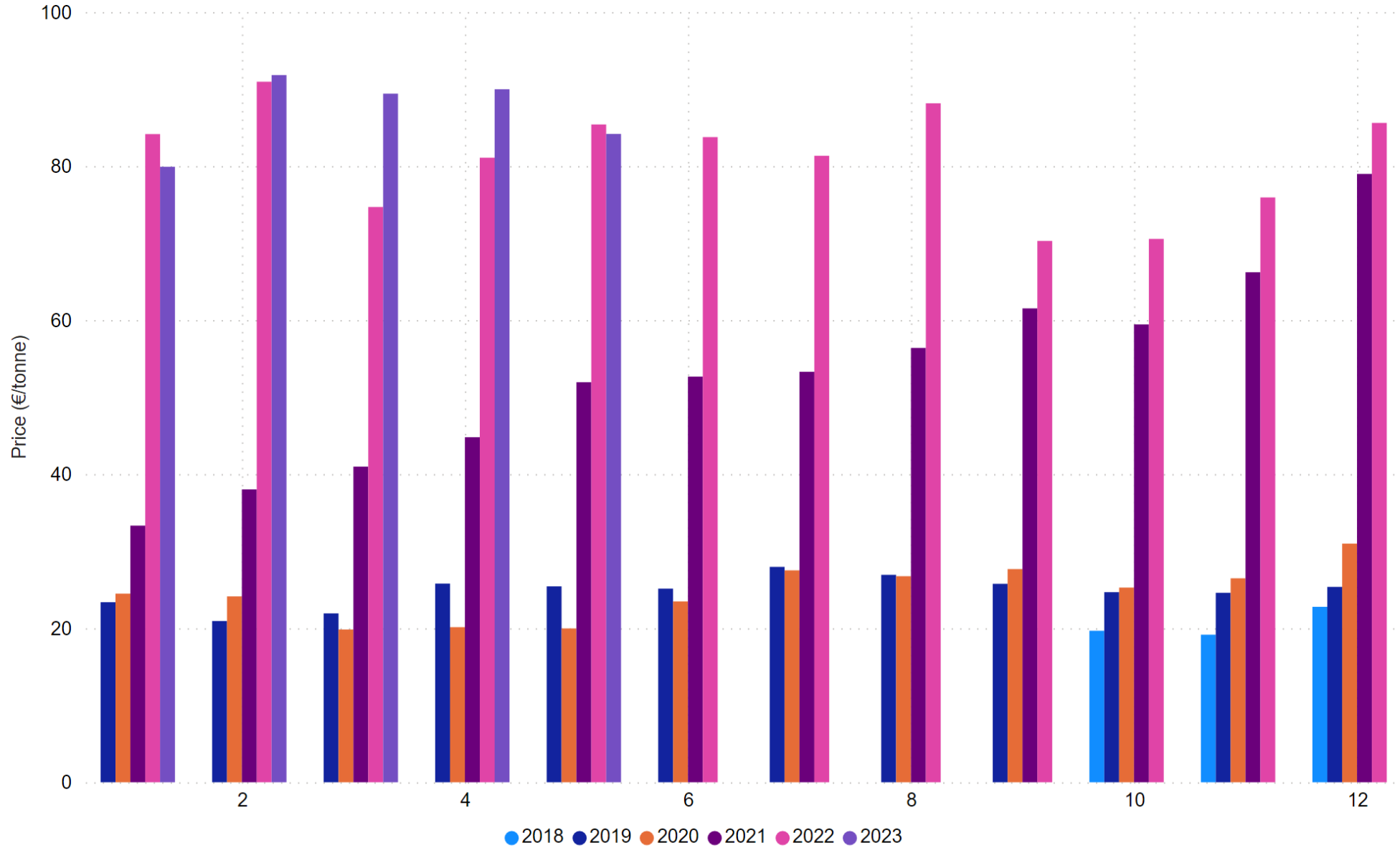
Coal Forward Prices



Carbon Price May 2023

€ 84.18
Monthly Average €/tonne
€ 78.63
Monthly Low €/tonne
€ 87.60
Monthly High €/tonne

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



Spark Spreads May 2023

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.

