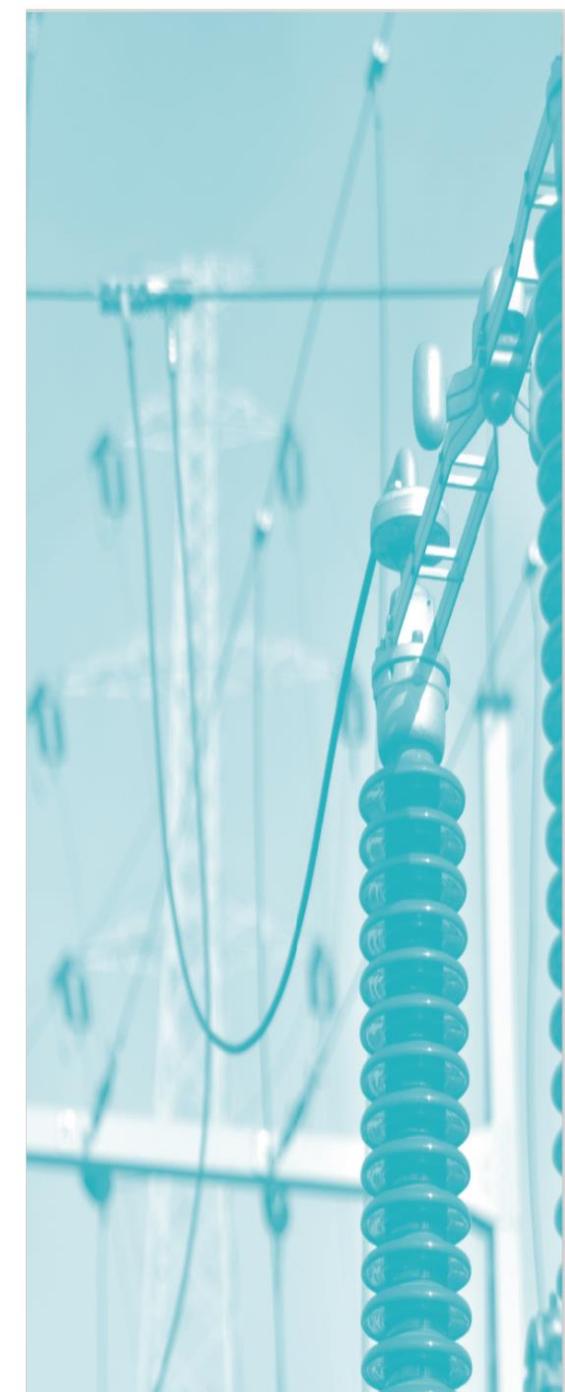


# Energy Market Monitoring Report

March 2023



## **Market Results**

# Summary Dashboard

Monthly Averages	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
DAM (€/MWh)	218.26	143.27	181.84	267.19	387.64	283.25	136.09	143.12	276.52	162.16	159.19	145.25
% Change from previous month	-26%	-34%	27%	47%	45%	-27%	-52%	5%	93%	-41%	-2%	-9%
% Change from previous year	155%	48%	91%	86%	195%	45%	-37%	-30%	10%	-20%	-9%	-50%
Actual System Demand (MW)	4408	4208	4169	4085	4099	4197	4330	4733	4885	4885	4782	4833
% Change from previous month	-6%	-5%	-1%	-2%	0%	2%	3%	9%	3%	0%	-2%	1%
% Change from previous year	3%	0%	2%	-1%	-1%	-2%	-1%	0%	2%	1%	-1%	3%
Actual Wind Generation (MW)	1426	1428	1129	854	817	1081	2047	2233	1647	1987	2026	1748
% Change from previous month	-9%	0%	-21%	-24%	-4%	32%	89%	9%	-26%	21%	2%	-14%
% Change from previous year	31%	34%	13%	90%	-3%	24%	33%	45%	-16%	18%	-27%	12%
Gas Price p/therm	162.26	95.13	139.03	222.44	365.79	235.85	102.32	128.91	264.54	155.16	133.65	110.96
% Change from previous month	-47%	-41%	46%	60%	64%	-36%	-57%	26%	105%	-41%	-14%	-17%
% Change from previous year	217%	45%	93%	145%	234%	52%	-49%	-35%	-3%	-22%	-29%	-64%
Carbon Price (€/Tonne)	81.09	85.41	83.74	81.34	88.20	70.29	70.46	75.84	85.61	79.91	91.82	89.41
% Change from previous month	9%	5%	-2%	-3%	8%	-20%	0%	8%	13%	-7%	15%	-3%
% Change from previous year	77%	63%	59%	52%	56%	14%	19%	15%	8%	-5%	1%	20%
Coal Price (\$/tonne)	308.61	321.33	337.07	383.18	354.67	341.33	275.16	212.52	243.46	173.25	136.71	134.95
% Change from previous month	-11%	4%	5%	14%	-7%	-4%	-19%	-23%	15%	-29%	-21%	-1%
% Change from previous year	338%	284%	214%	196%	142%	96%	16%	48%	78%	14%	-27%	-61%
EWIC % Import Periods	0.00%	12.33%	27.16%	33.03%	25.84%	16.25%	30.51%	18.61%	30.58%	49.03%	38.91%	50.00%
EWIC % Export Periods	0.00%	23.49%	43.56%	56.52%	51.92%	41.81%	46.24%	54.10%	35.08%	23.66%	27.19%	16.47%
EWIC % Not Flow Periods	100.00%	64.18%	29.28%	10.45%	22.24%	45.28%	23.25%	27.29%	34.34%	27.32%	33.89%	23.86%
Moyle % Import Periods	56.33%	38.54%	40.44%	24.90%	31.55%	35.35%	40.52%	29.51%	44.19%	62.05%	53.65%	64.68%
Moyle % Export Periods	43.63%	61.46%	59.56%	10.72%	66.26%	63.85%	59.44%	69.83%	55.78%	37.95%	46.02%	25.50%
Moyle % Not Flow Periods	0.00%	0.00%	0.00%	64.38%	2.18%	0.80%	0.03%	0.66%	0.03%	0.00%	0.33%	0.13%

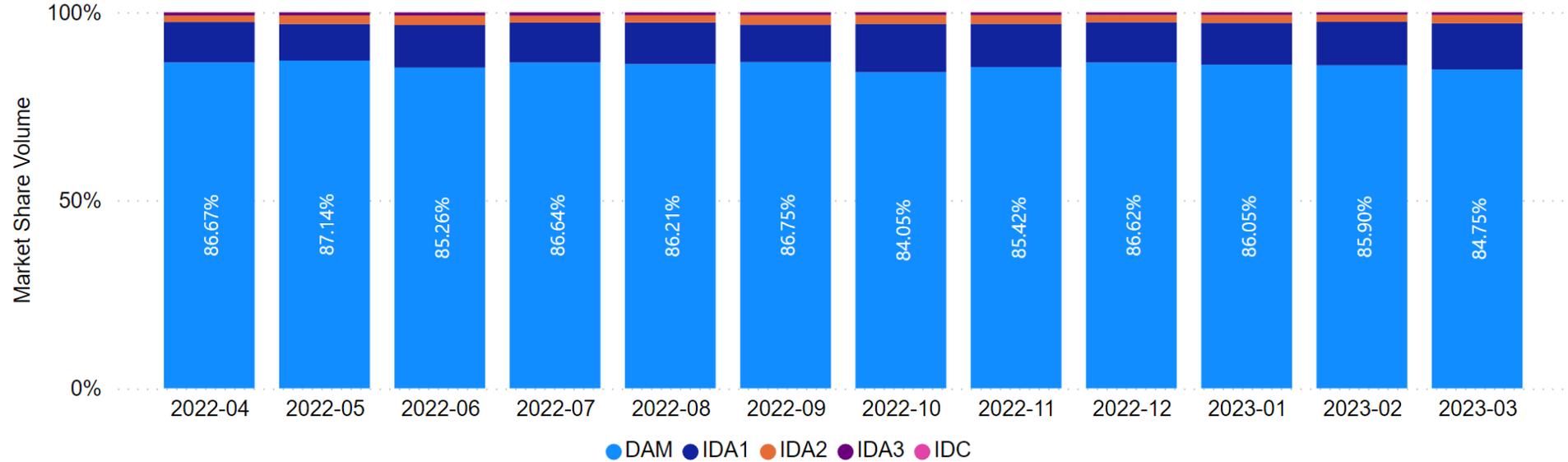
# Market Volumes March 2023

Daily Average Volume	MWh
DAM	121,677
IDA1	17,656
IDA2	3,155
IDA3	1,055
IDC	45

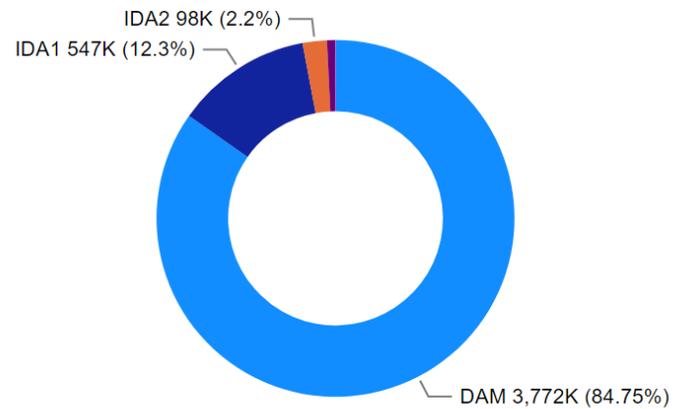
Total Monthly Volume	MWh
DAM	3,772,000
IDA1	547,322
IDA2	97,799
IDA3	32,692
IDC	1,125
<b>Total</b>	<b>4,450,938</b>

Total Market Value	€
IDC	€ 164,265
IDA3	€ 5,407,544
IDA2	€ 14,374,387
IDA1	€ 82,549,133
DAM	€ 556,413,982
<b>Total</b>	<b>€ 658,909,311</b>

Ex-Ante Monthly Volume by Market

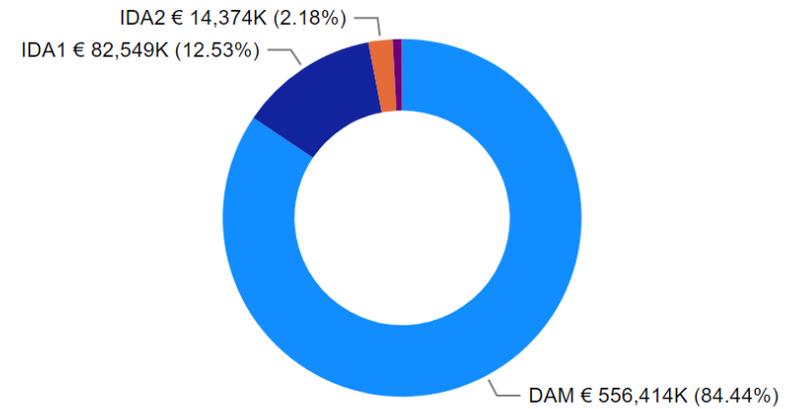


Ex-Ante Volumes (MWh)



● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

Ex-Ante Values (€)



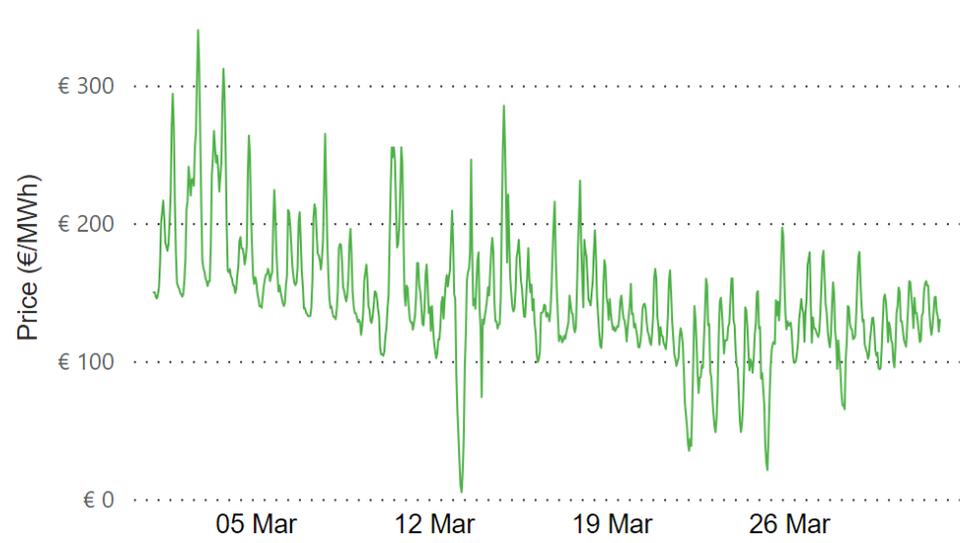
● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

# Day Ahead Market March 2023

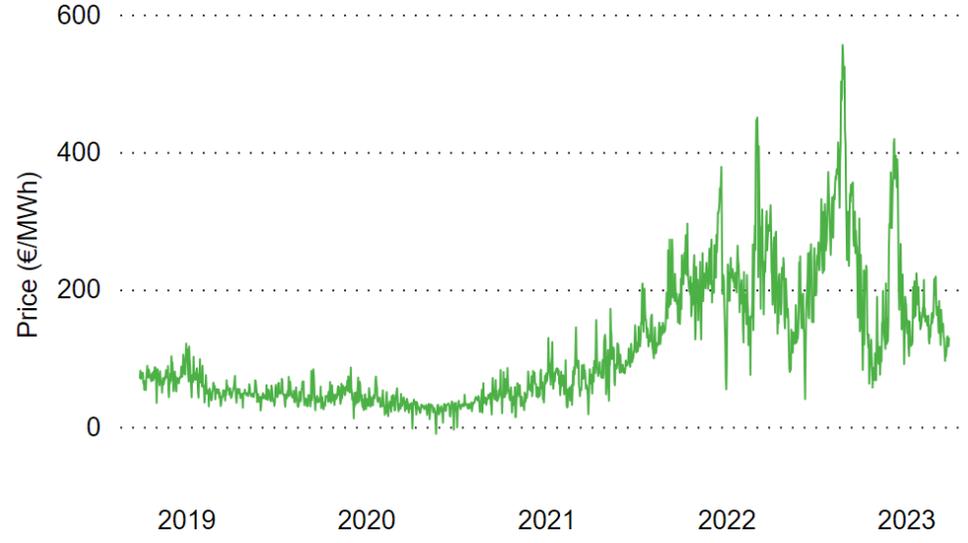
€ 145.25  
 Average DAM Price  
 € 5.00  
 Min DAM Price  
 € 340.00  
 Max DAM Price

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

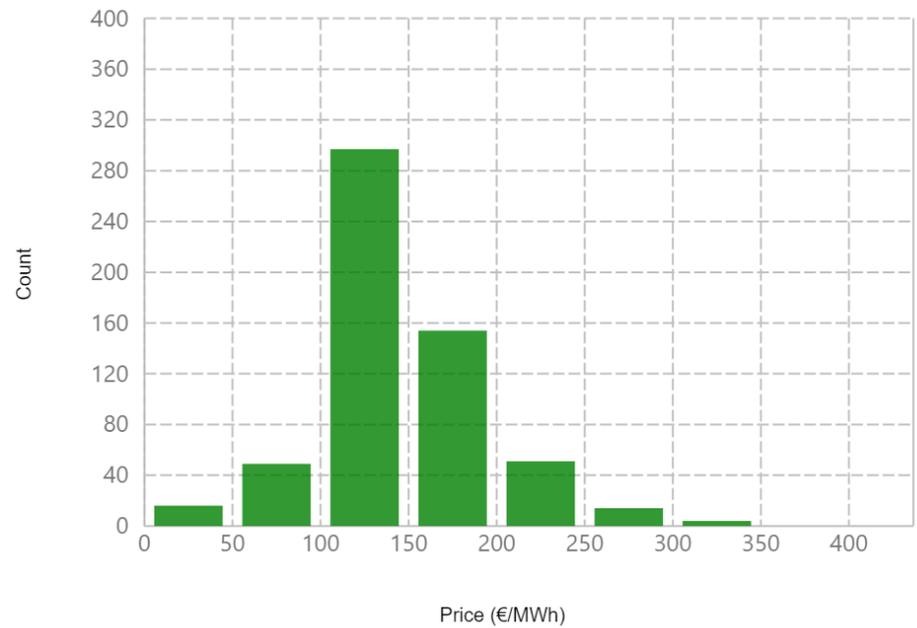
### DAM Prices



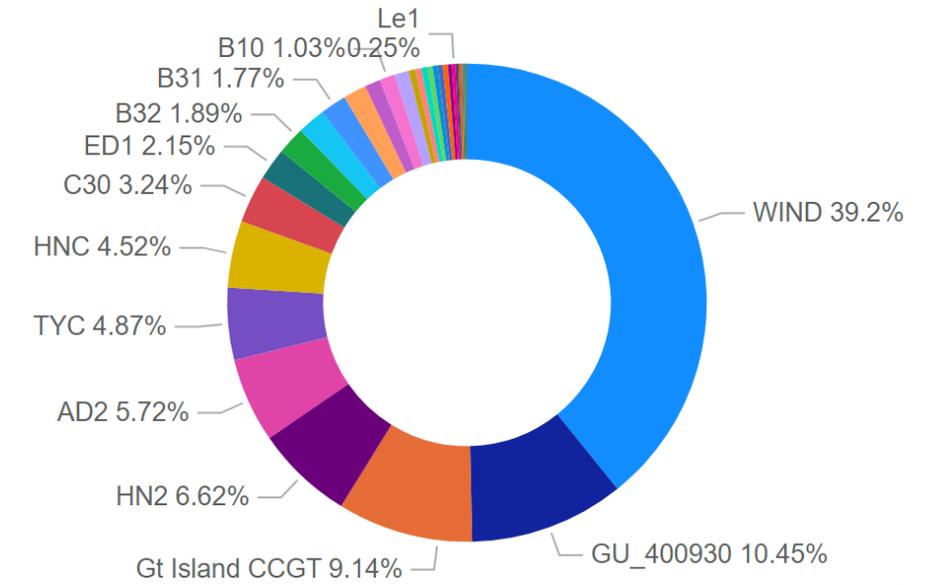
### Historic Daily Average DAM Prices



### Histogram of DAM Prices



### DAM Sell Side Generator Order Results

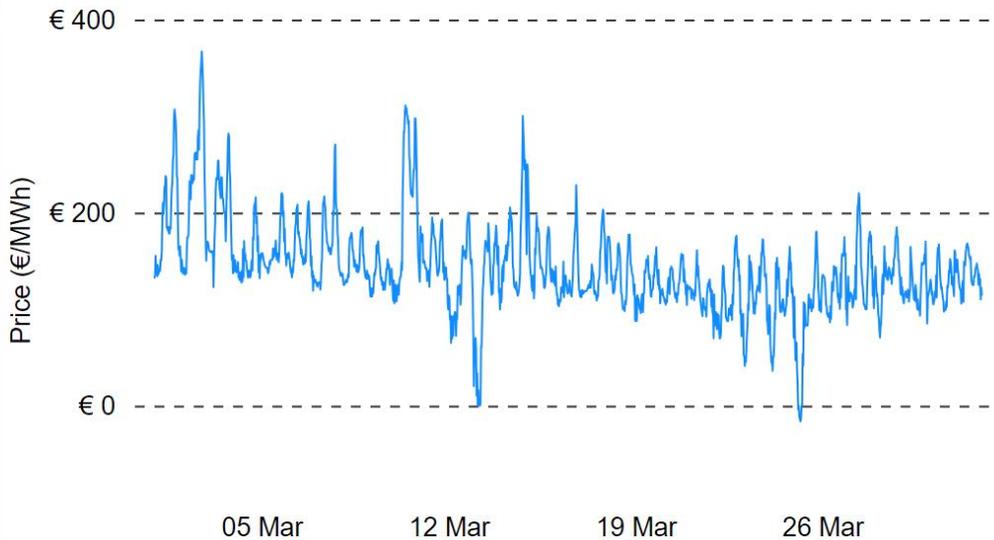


# Intraday Market March 2023

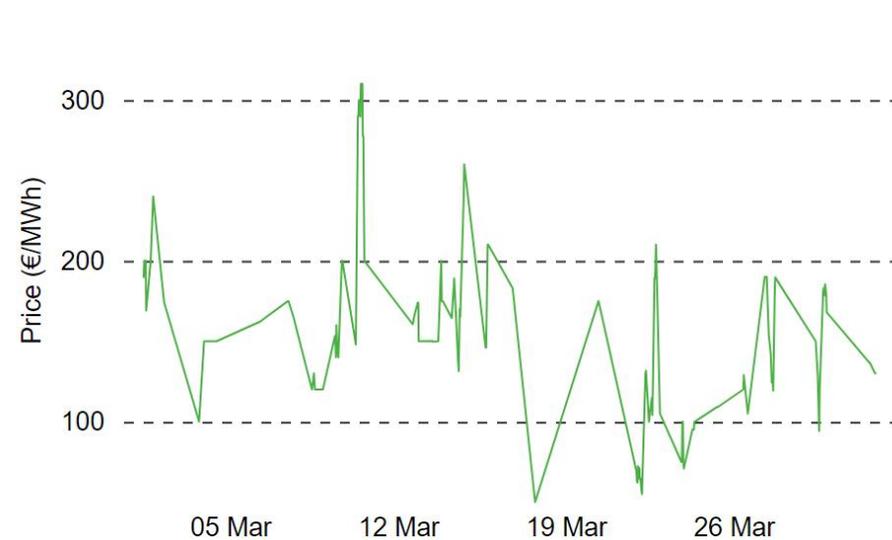
€ 142.84  
Average IDA1 Price  
-€ 16.29  
Min IDA1 Price  
€ 366.82  
Max IDA1 Price

The most frequent price range for March was between €120 and €180

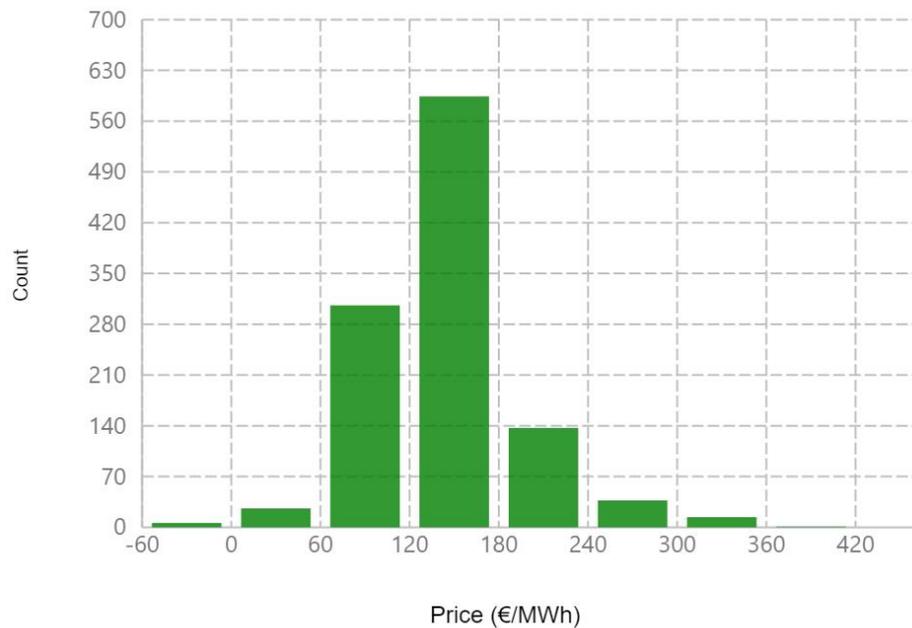
IDA 1 Prices



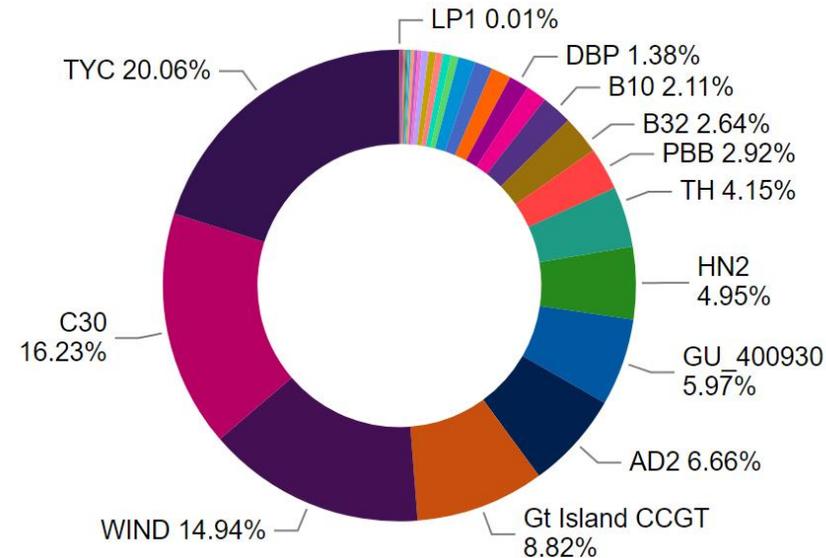
IDC Prices



Histogram of IDA1 Prices



IDA1 Sell Order Results By Market Participant



# SEM vs GB

## March 2023

### SEM Day Ahead Price

€ 145.25  
Average Price

€ 5.00  
Min Price

€ 340.00  
Max Price

### GB Day Ahead Price

€ 130.70  
Average Price

€ 13.63  
Min Price

€ 214.21  
Max Price

### SEM IDA1 Price

€ 142.84  
Average Price

-€ 16.29  
Min Price

€ 366.82  
Max Price

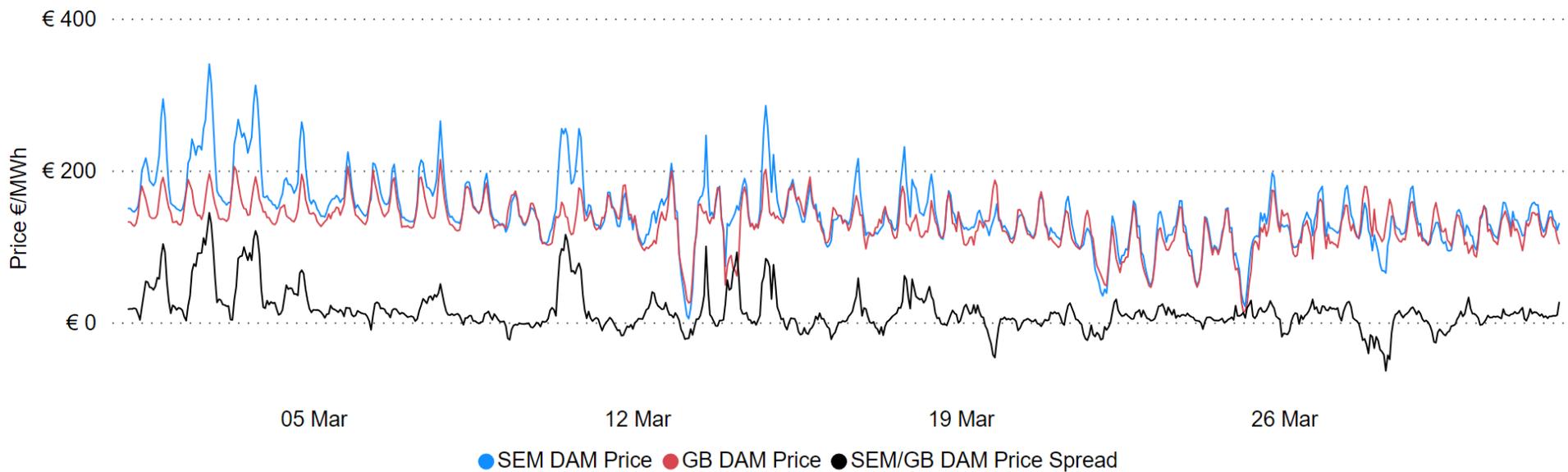
### GB IDA1 Prices

€ 132.96  
Average Price

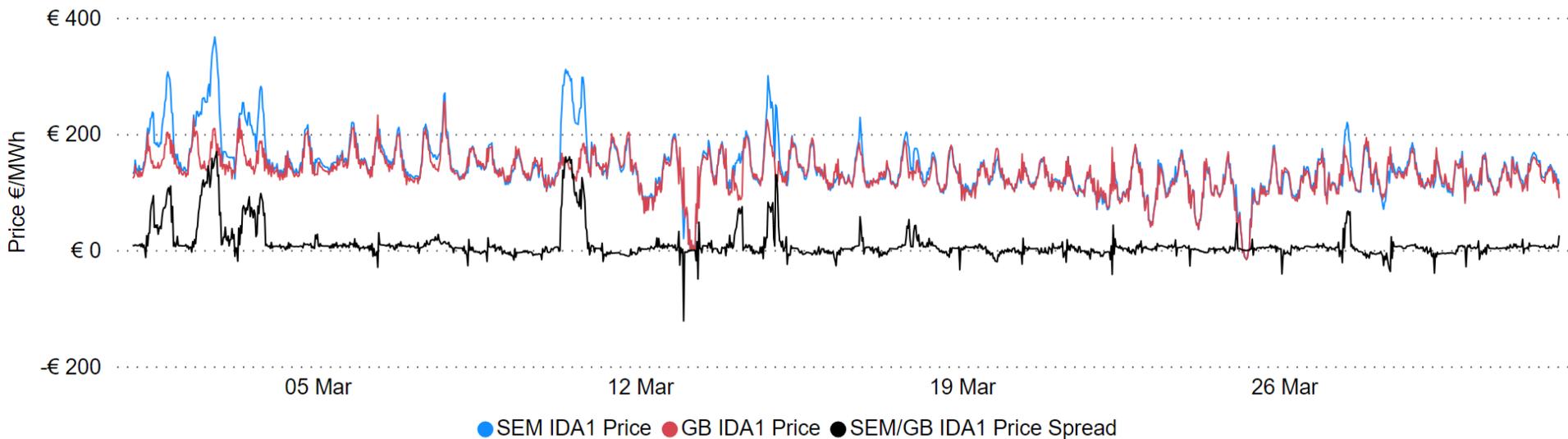
-€ 15.90  
Min Price

€ 255.77  
Max Price

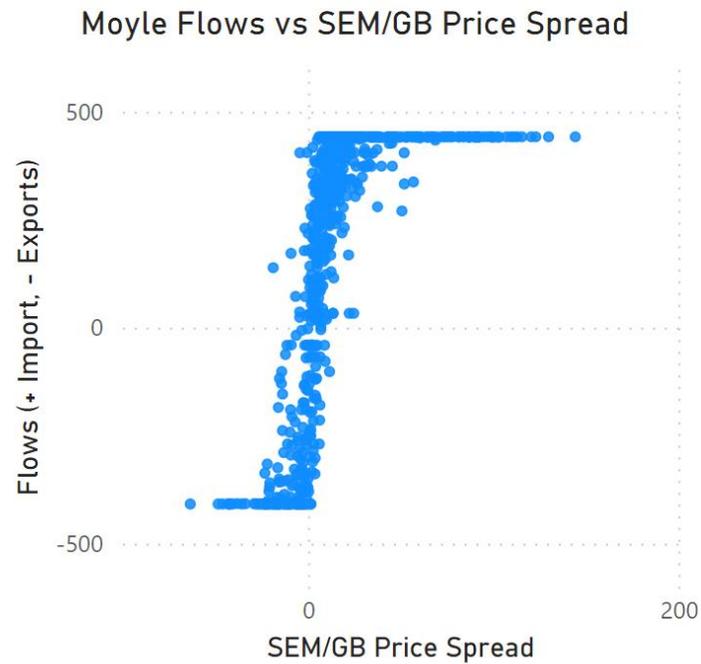
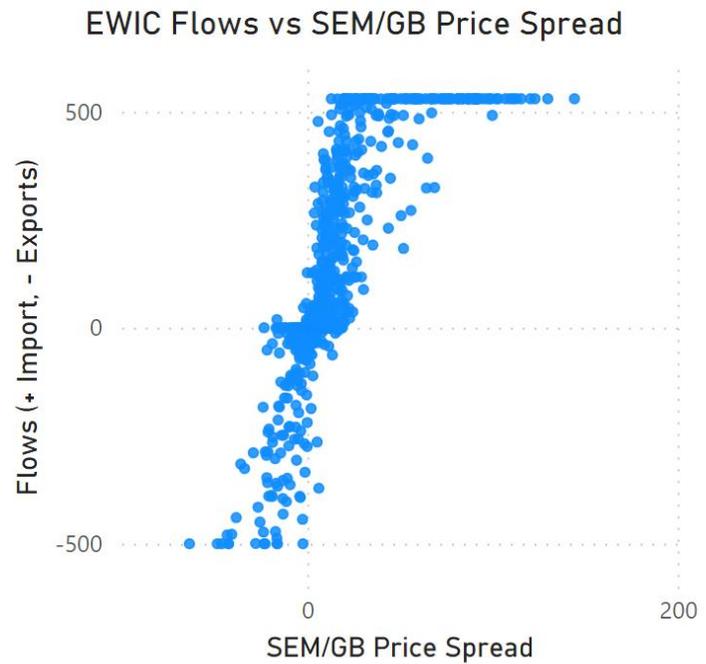
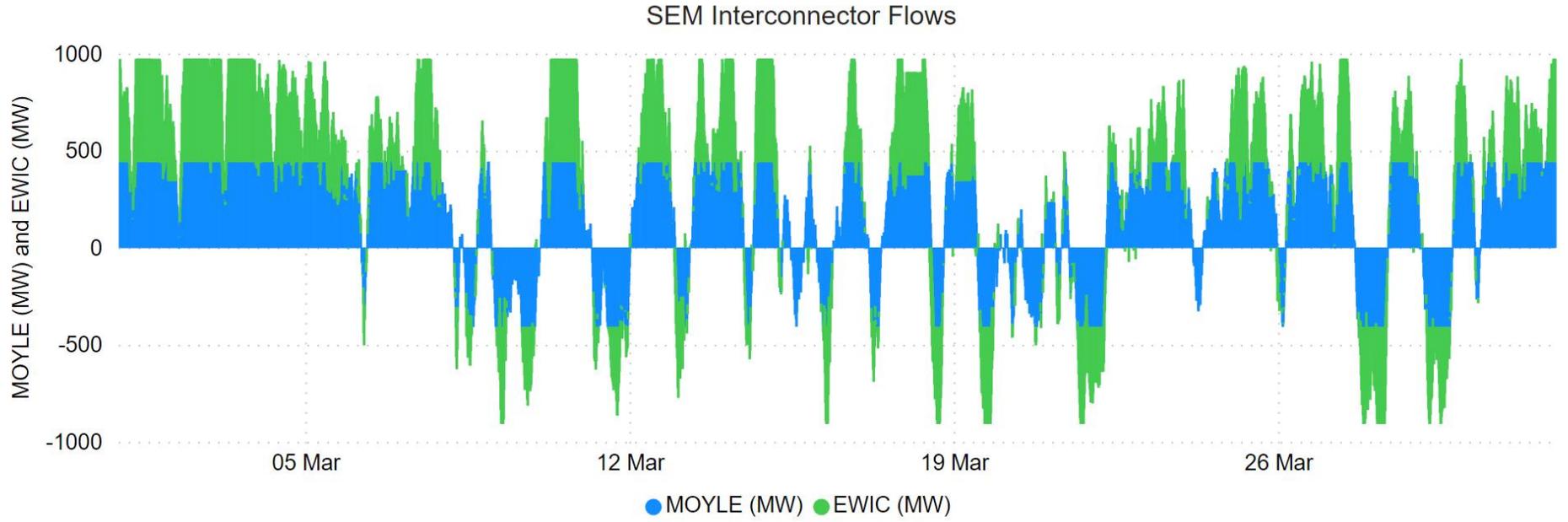
### SEM & GB DAM Prices



### SEM & GB IDA1 Prices



# SEM Interconnectors March 2023



### Interconnector Flows

March 2023	MW
Moyle Imports	353
EWIC Imports	299
Moyle Exports	-265
EWIC Exports	-211
SEM Imports	581
SEM Exports	-404
SEM Net Import/Export	304

# Balancing Market March 2023

30 Minutes Imbalance Price  
€ 148.03  
Average Price  
-€ 96.95  
Lowest Price  
€ 446.67  
Highest Price

### 30 Minute Imbalance Prices



### 30 Minute Imbalance Volume



## Demand and Generation Mix

# Demand March 2023

## SEM Demand (MW)

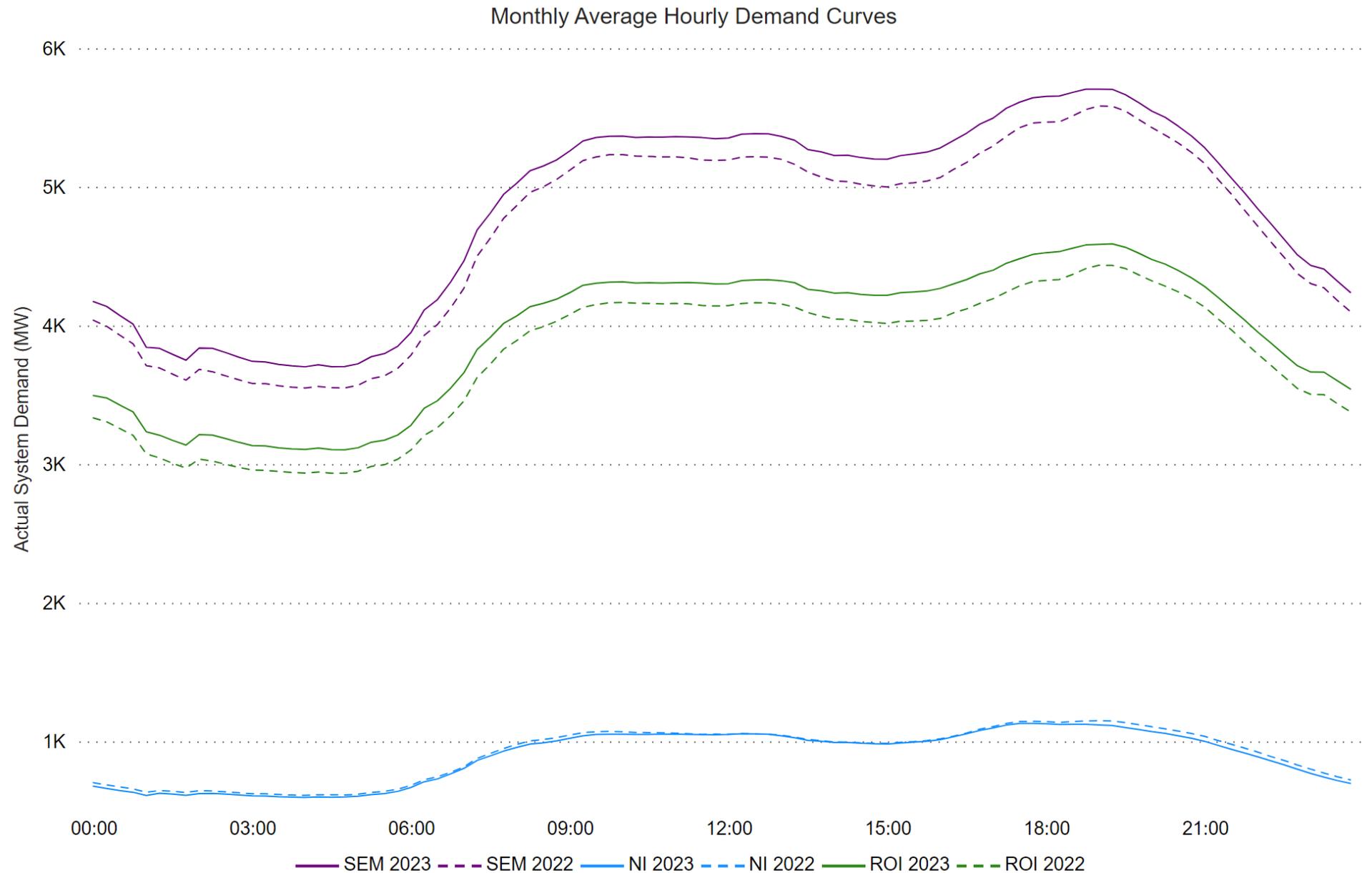
4,833.21	4,675.32
SEM Average 2023	SEM Average 2022
3,702.68	3,549.72
SEM Min 2023	SEM Min 2022
5,705.03	5,584.34
SEM Max 2023	SEM Max 2022

## NI Demand (MW)

894.44	911.78
NI Average 2023	NI Average 2022
596.35	611.52
NI Min 2023	NI Min 2022
1,129.81	1,149.52
NI Max 2023	NI Max 2022

## ROI Demand (MW)

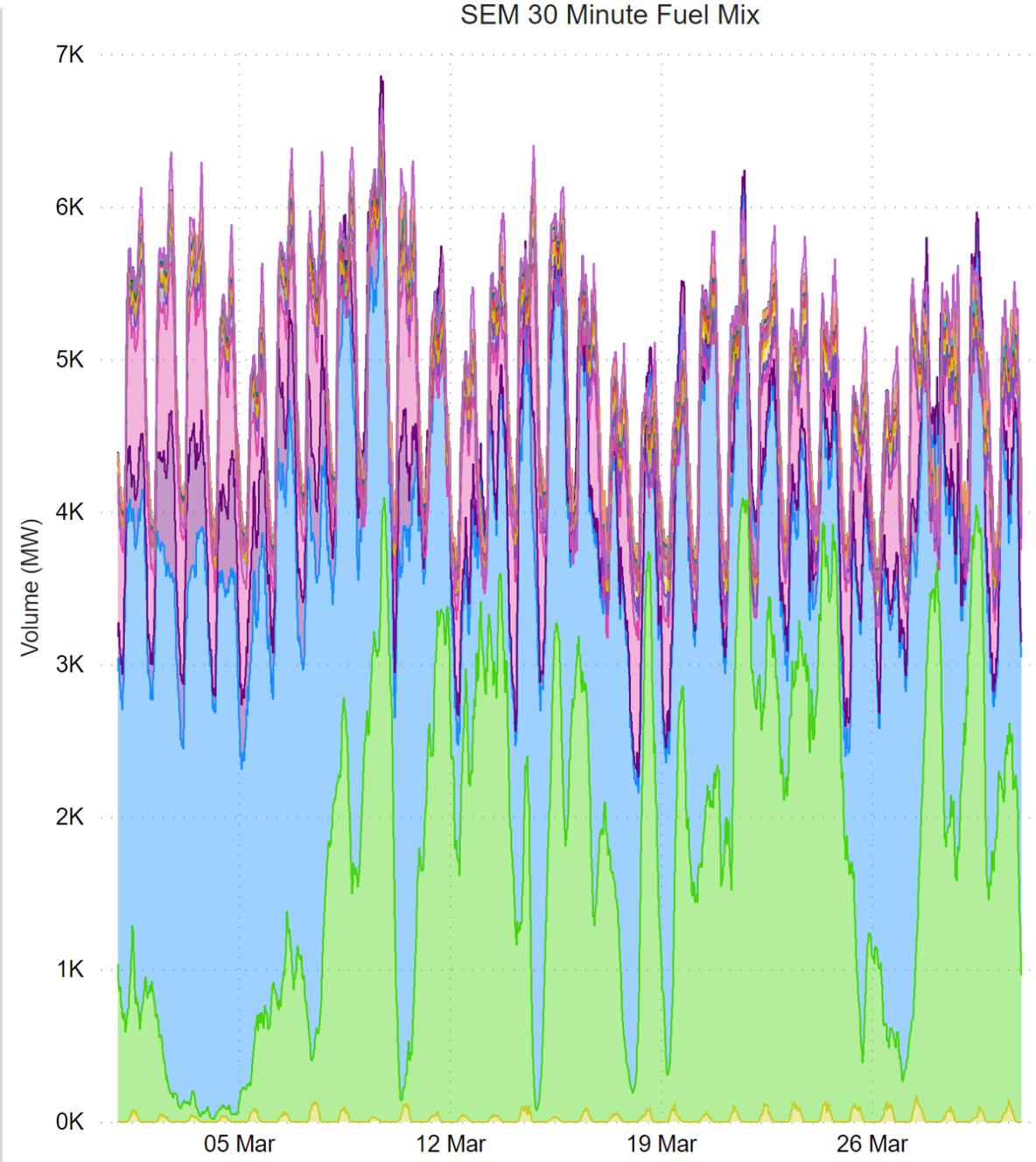
3,938.78	3,764.75
ROI Average 2023	ROI Average 2022
3,103.84	2,934.22
ROI Min 2023	ROI Min 2022
4,589.03	4,434.97
ROI Max 2023	ROI Max 2022



# Fuel Mix March 2023

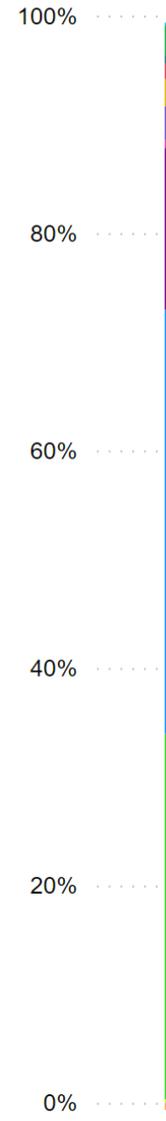
Fuel Type	Average (MW)	%
CCGT	2,154	44.3%
WIND	1,753	36.1%
INTERCONNECTOR	293	6.0%
COAL	266	5.5%
HYDRO	101	2.1%
CHP	120	2.5%
PEAT	78	1.6%
WASTE	63	1.3%
SOLAR	22	0.5%
DSR	28	0.6%
OIL	1	0.0%
OCGT	3	0.1%
BATTERY	-3	-0.1%
PUMPED STORAGE	-19	-0.4%

Fuel Type	Max (MW)	Min (MW)
CCGT	3,847	653
WIND	4,090	16
INTERCONNECTOR	976	-935
COAL	1,073	90
HYDRO	171	1
CHP	169	38
PEAT	107	0
WASTE	83	10
SOLAR	171	0
DSR	114	0
OIL	86	0
OCGT	96	0
BATTERY	43	-15
PUMPED STORAGE	292	-286

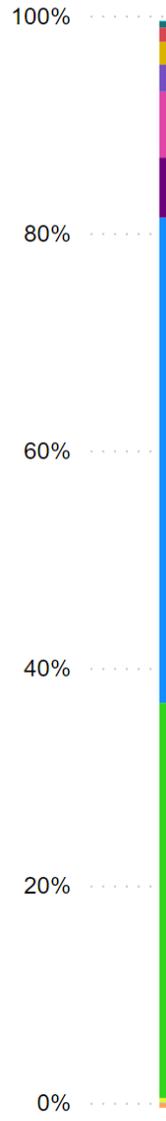


- SOLAR
- WIND
- CCGT
- COAL
- IC
- CHP
- HYDRO
- PEAT
- WASTE
- DSR
- OIL
- OCGT
- BATTERY
- PS

SEM Fuel Mix  
March 2022



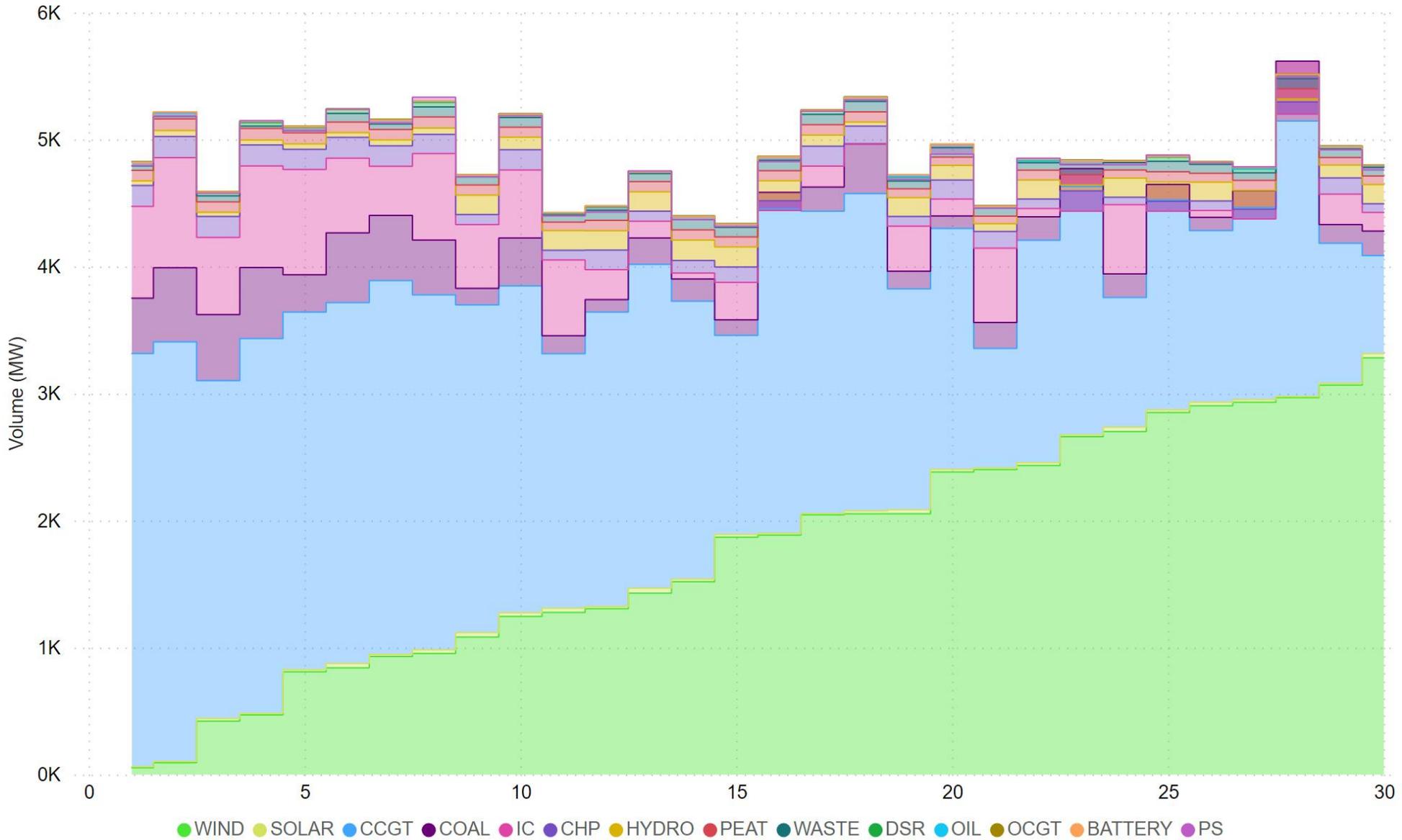
SEM Fuel Mix  
March 2023



# Fuel Mix Ranked by Wind Volume March 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.

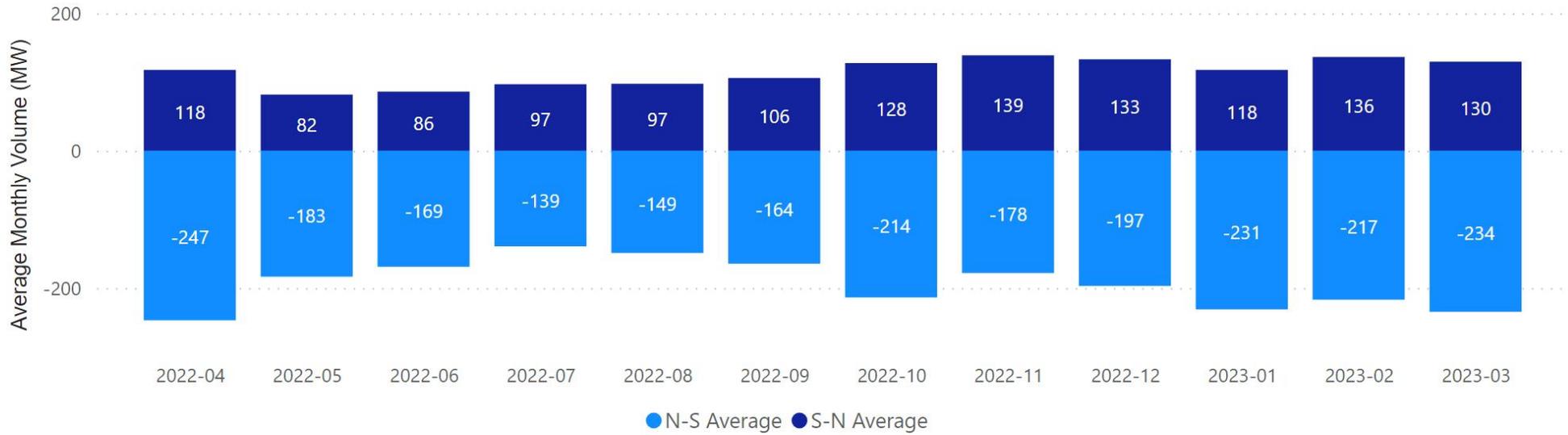
Daily SEM Fuel Mix Ranked by Wind Volume for the Month



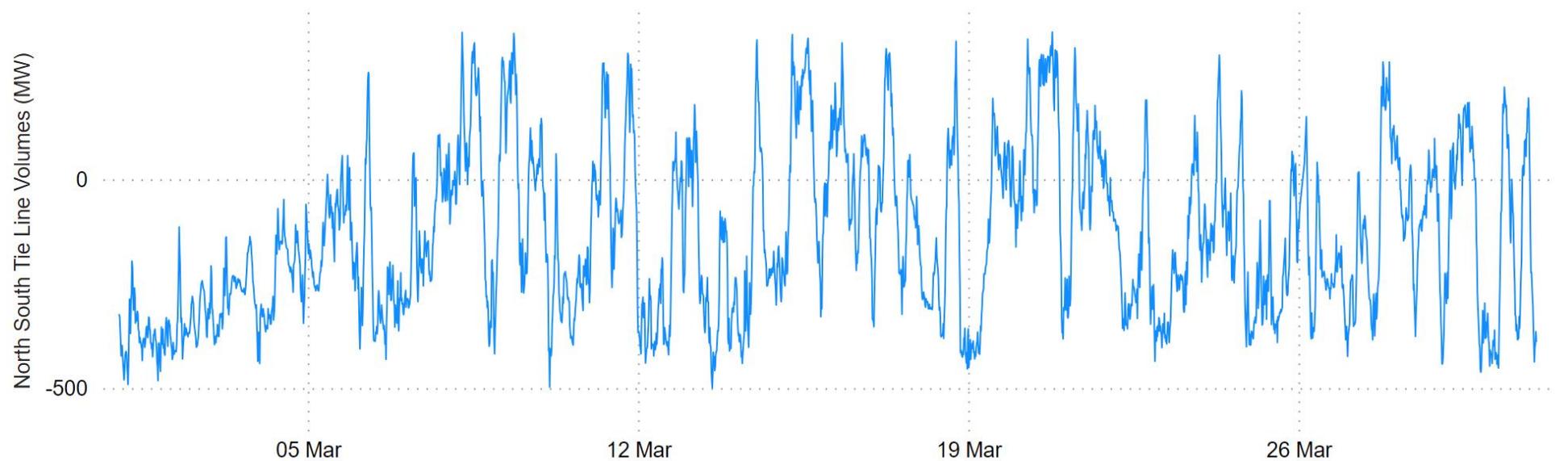
# North-South Tie Line March 2023

Flow Direction (Average)	MW
NI to ROI	234.45
ROI to NI	129.54
NET NI to ROI	138.62

Average Flows N-S Tie Line Long Term Trend



North South Tie Line Volumes 15 minute periods

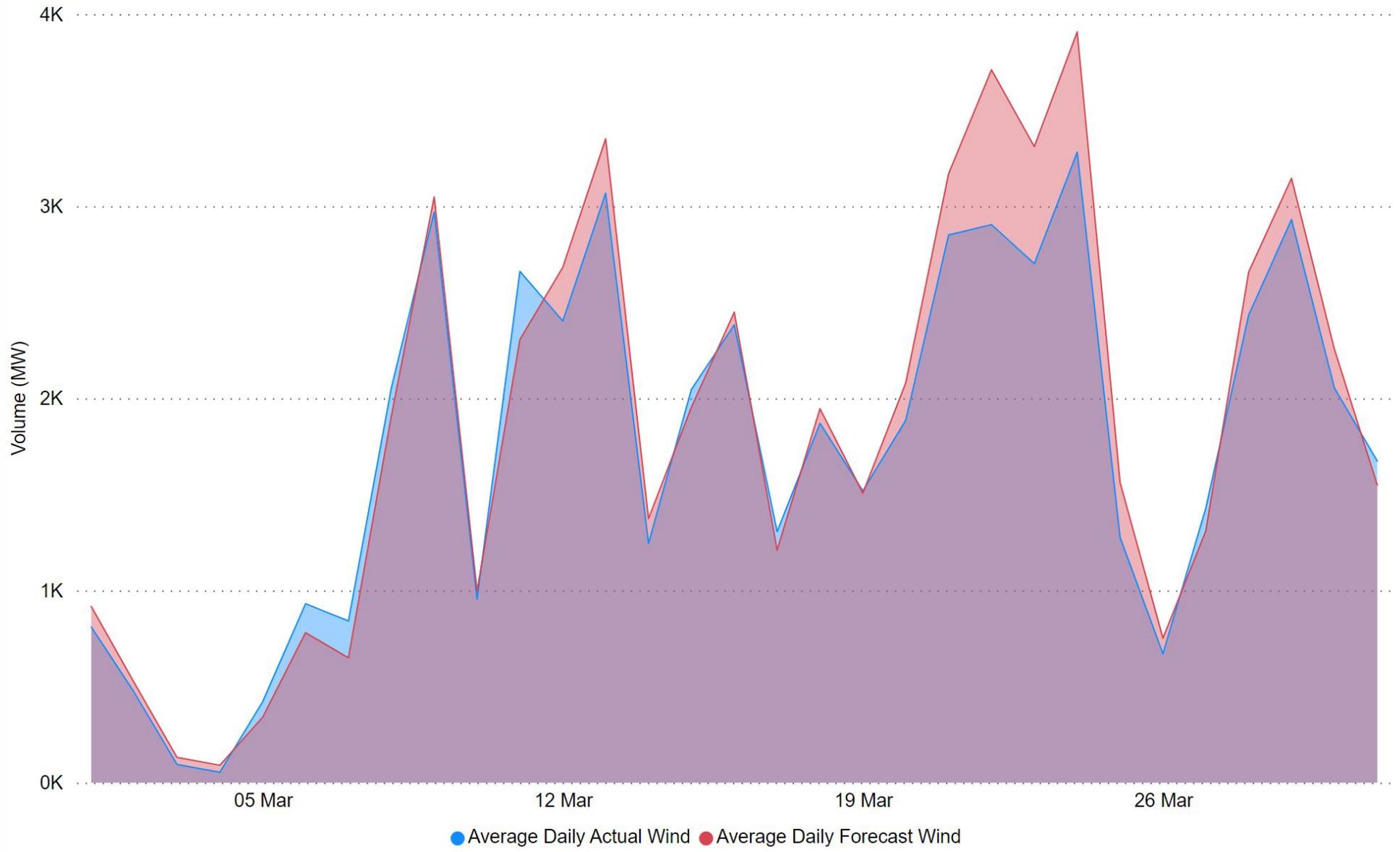


# Wind Generation March 2023

Average Daily Actual Wind (MW)  
1,748

Average Daily Forecast Wind (MW)  
1,857

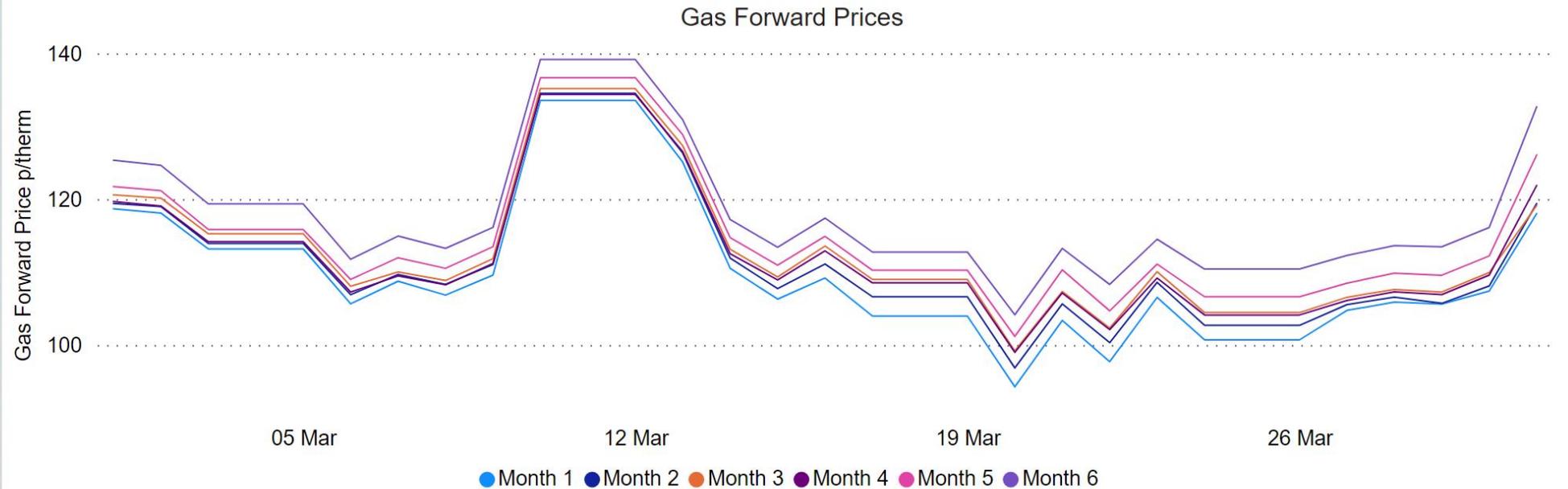
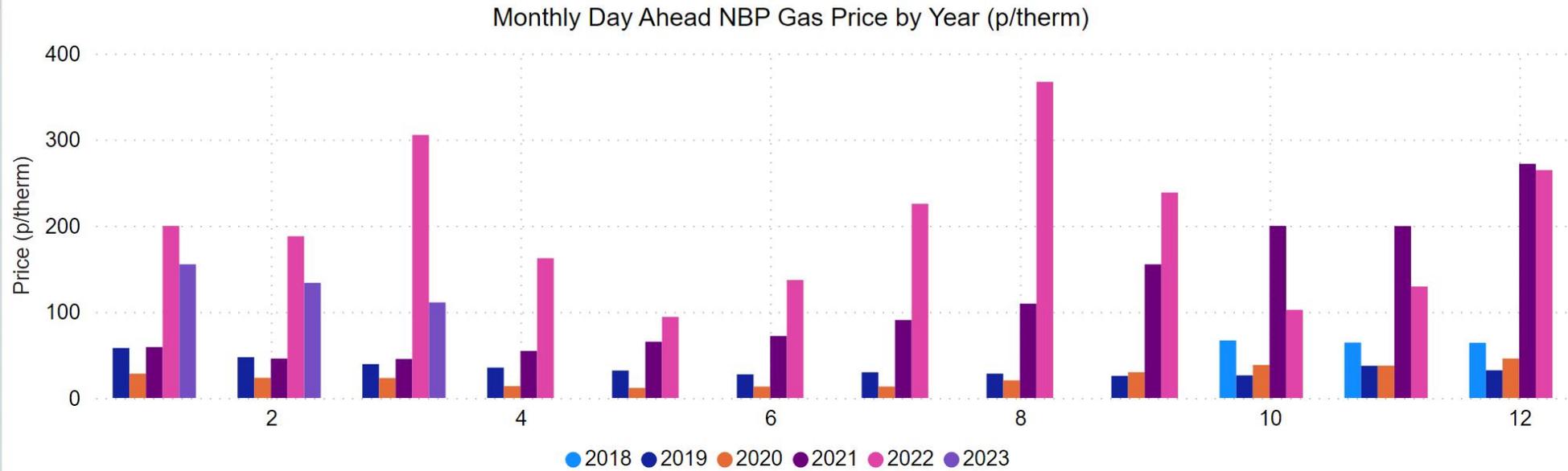
### Actual Daily Average Wind Relative to Forecast Daily Average Wind



## Fuel Costs and Spreads

# Gas Price March 2023

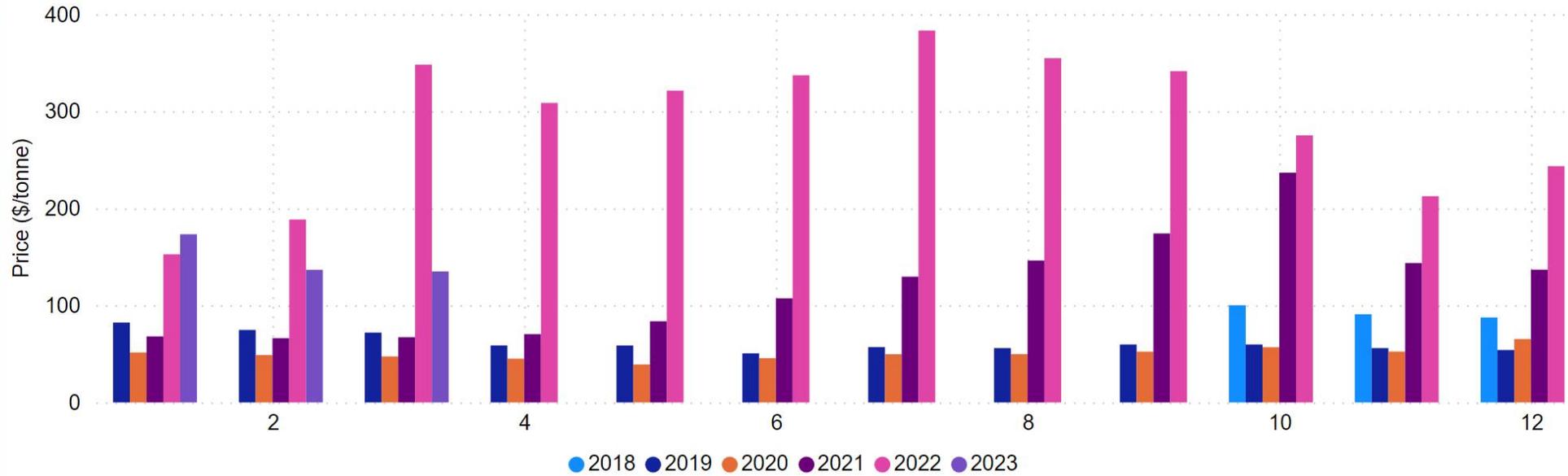
110.96  
Monthly Average (p/therm)  
91.05  
Monthly Low (p/therm)  
136.25  
Monthly High (p/therm)



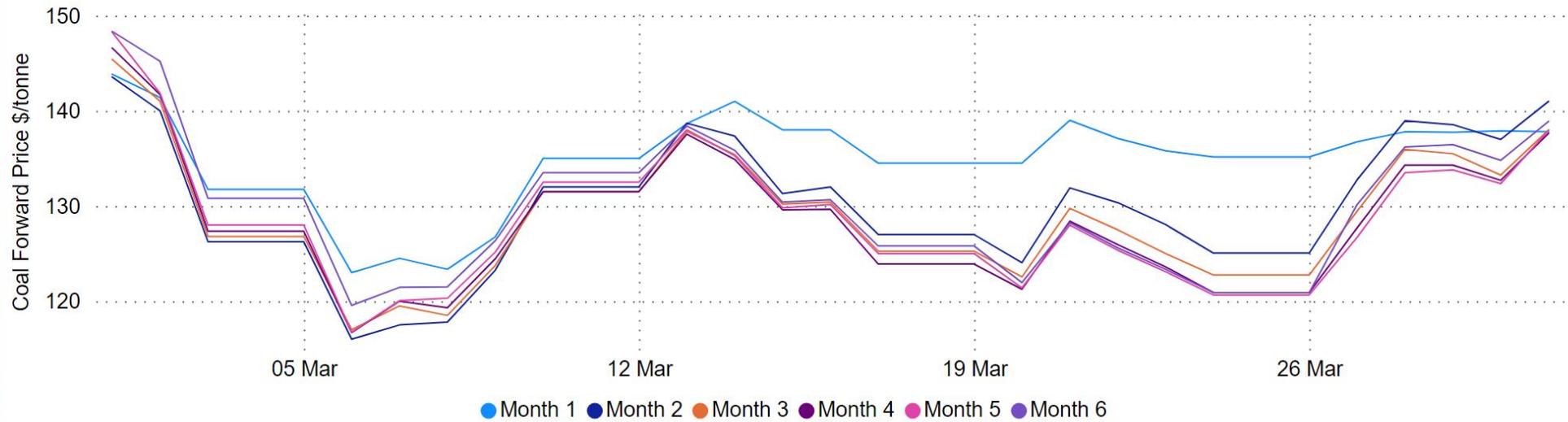
# Coal Price March 2023

\$134.95  
Monthly Average \$/tonne  
\$123.00  
Monthly Low \$/tonne  
\$143.85  
Monthly High \$/tonne

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



Coal Forward Prices

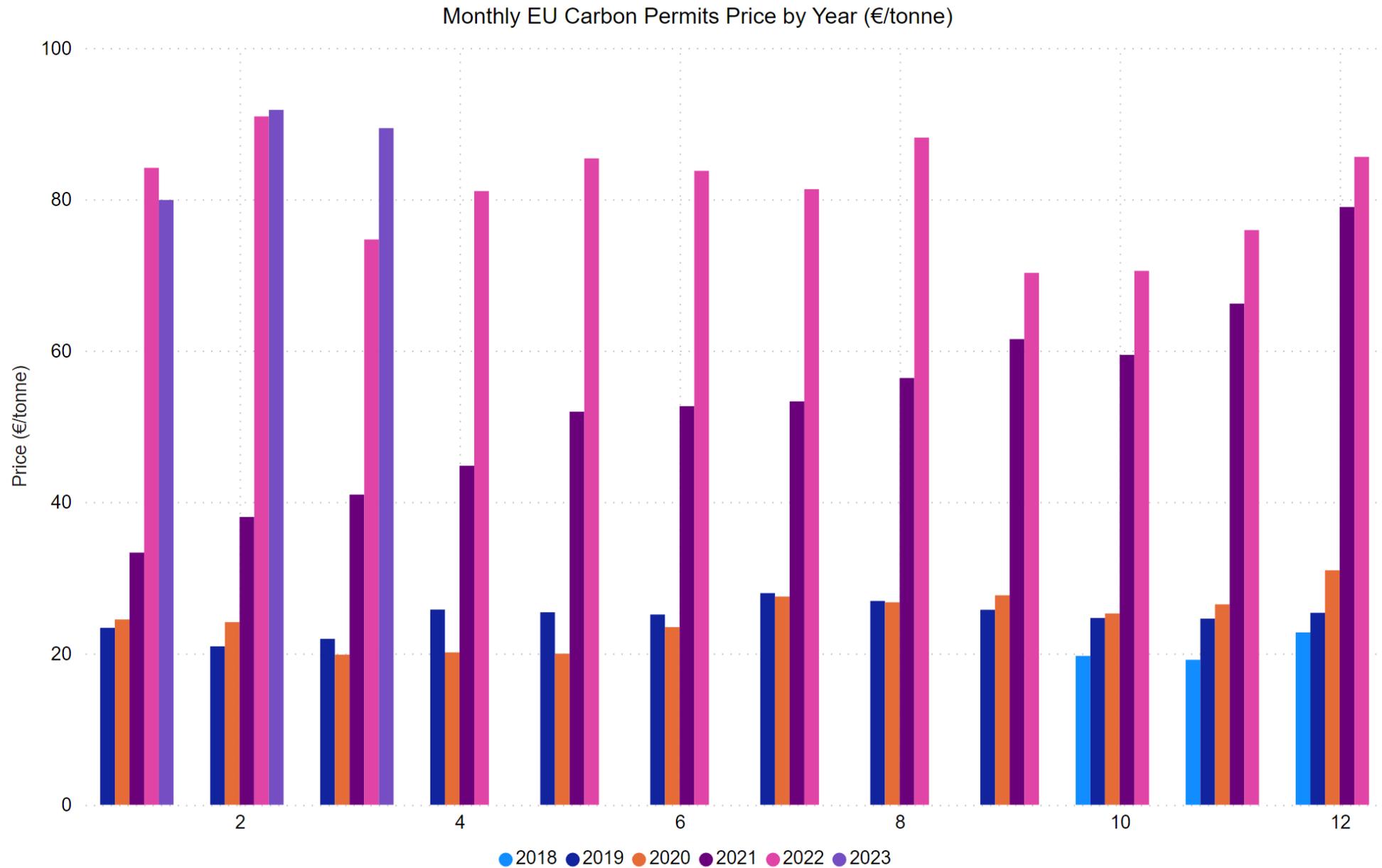


# Carbon Price March 2023

€ 89.41  
Monthly Average €/tonne

€ 84.95  
Monthly Low €/tonne

€ 96.90  
Monthly High €/tonne



# Spark Spreads March 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.

