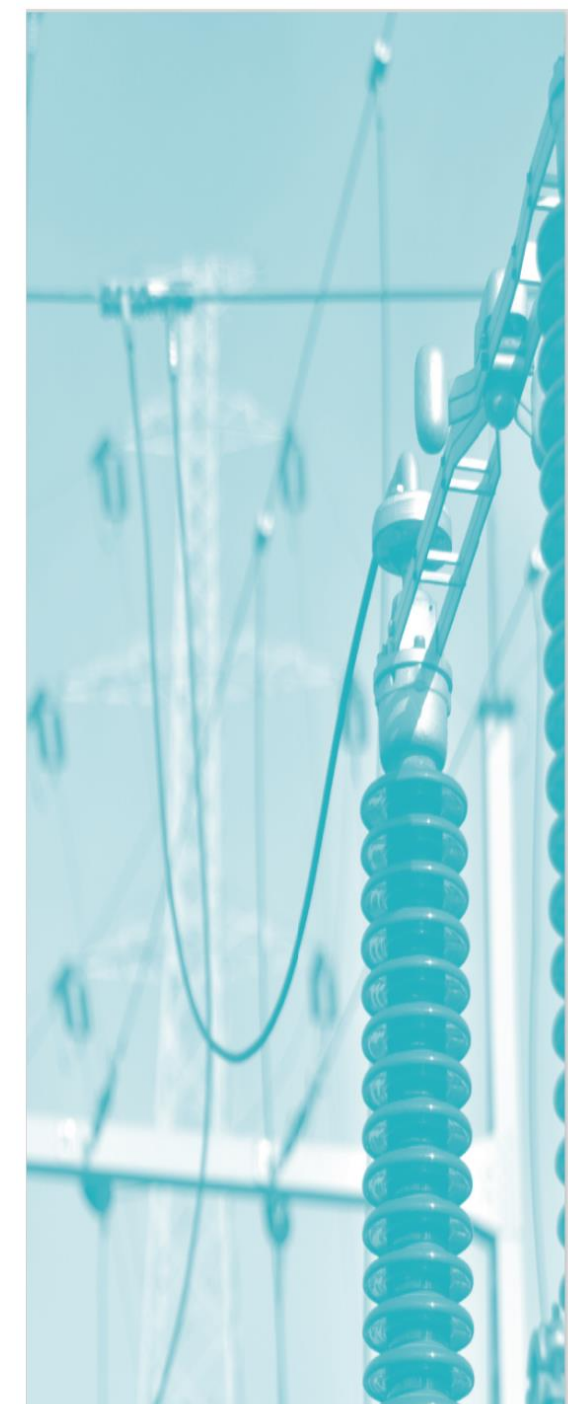


# Energy Market Monitoring Report

October 2023



## Market Results

# Summary Dashboard

Monthly Averages	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23
DAM (€/MWh)	143.12	276.52	162.16	159.19	145.25	125.57	105.19	117.11	96.24	106.46	111.62	125.54
% Change from previous month	5%	93%	-41%	-2%	-9%	-14%	-16%	11%	-18%	11%	5%	12%
% Change from previous year	-30%	10%	-20%	-9%	-50%	-42%	-27%	-36%	-64%	-73%	-61%	-8%
Actual System Demand (MW)	4733	4885	4885	4782	4833	4469	4276	4189	4101	4185	4335	4516
% Change from previous month	9%	3%	0%	-2%	1%	-8%	-4%	-2%	-2%	2%	4%	4%
% Change from previous year	0%	2%	1%	-1%	3%	1%	2%	0%	0%	2%	3%	4%
Actual Wind Generation (MW)	2233	1647	1987	2026	1748	1545	884	878	1316	1401	1384	1363
% Change from previous month	9%	-26%	21%	2%	-14%	-12%	-43%	-1%	50%	6%	-1%	-2%
% Change from previous year	45%	-16%	18%	-27%	12%	8%	-38%	-22%	54%	71%	28%	-33%
Gas Price p/therm	128.91	264.54	155.16	133.65	110.96	100.32	72.41	77.87	70.76	82.87	91.52	104.88
% Change from previous month	26%	105%	-41%	-14%	-17%	-10%	-28%	8%	-9%	17%	10%	15%
% Change from previous year	-35%	-3%	-22%	-29%	-64%	-38%	-24%	-44%	-68%	-77%	-61%	3%
Carbon Price (€/Tonne)	75.84	85.61	79.91	91.82	89.41	89.98	84.18	85.51	86.57	84.61	82.09	81.10
% Change from previous month	8%	13%	-7%	15%	-3%	1%	-6%	2%	1%	-2%	-3%	-1%
% Change from previous year	15%	8%	-5%	1%	20%	11%	-1%	2%	6%	-4%	17%	15%
Coal Price (\$/tonne)	212.52	243.46	173.25	136.71	134.95	137.83	119.57	112.56	111.02	115.57	120.40	131.80
% Change from previous month	-23%	15%	-29%	-21%	-1%	2%	-13%	-6%	-1%	4%	4%	9%
% Change from previous year	48%	78%	14%	-27%	-61%	-55%	-63%	-67%	-71%	-67%	-65%	-52%
EWIC % Import Periods	18.61%	30.58%	49.03%	38.91%	50.00%	50.56%	75.86%	77.72%	67.11%	68.11%	73.75%	86.90%
EWIC % Export Periods	54.10%	35.08%	23.66%	27.19%	16.47%	13.65%	8.28%	4.06%	9.21%	11.96%	8.89%	2.99%
EWIC % Not Flow Periods	27.29%	34.34%	27.32%	33.89%	23.86%	30.80%	15.88%	18.22%	22.68%	19.93%	17.36%	10.11%
Moyle % Import Periods	29.51%	44.19%	62.05%	53.65%	64.68%	77.50%	85.42%	92.22%	84.04%	75.24%	83.33%	92.31%
Moyle % Export Periods	69.83%	55.78%	37.95%	46.02%	25.50%	27.43%	14.58%	7.67%	15.89%	20.33%	16.60%	7.66%
Moyle % Not Flow Periods	0.66%	0.03%	0.00%	0.33%	0.13%	0.07%	0.00%	0.10%	0.07%	4.44%	0.07%	0.03%

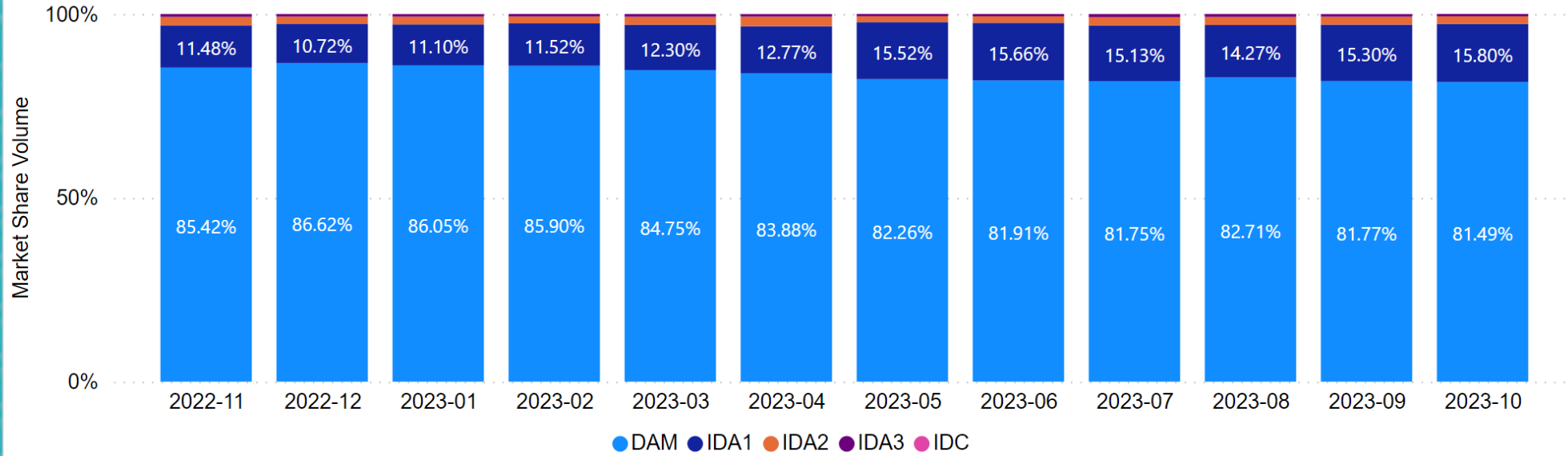
# Market Volumes October 2023

Daily Average Volume	MWh
DAM	110,530
IDA1	21,431
IDA2	2,780
IDA3	874
IDC	25

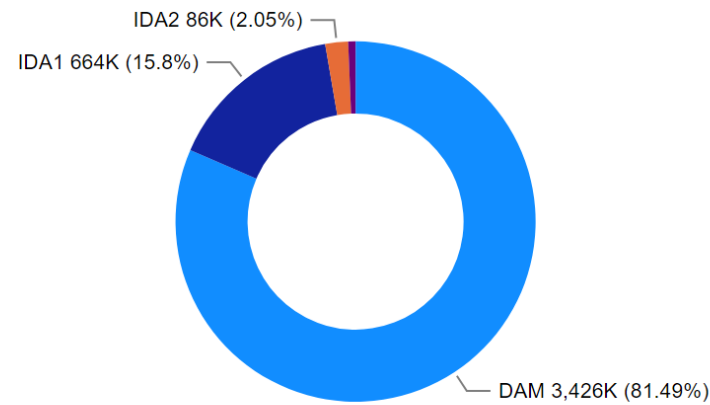
Total Monthly Volume	MWh
DAM	3,426,444
IDA1	664,376
IDA2	86,184
IDA3	27,088
IDC	526
<b>Total</b>	<b>4,204,619</b>

Total Market Value	€
DAM	€ 441,152,746
IDA1	€ 83,936,338
IDA2	€ 11,868,731
IDA3	€ 3,991,761
IDC	€ 65,155
<b>Total</b>	<b>€ 541,014,731</b>

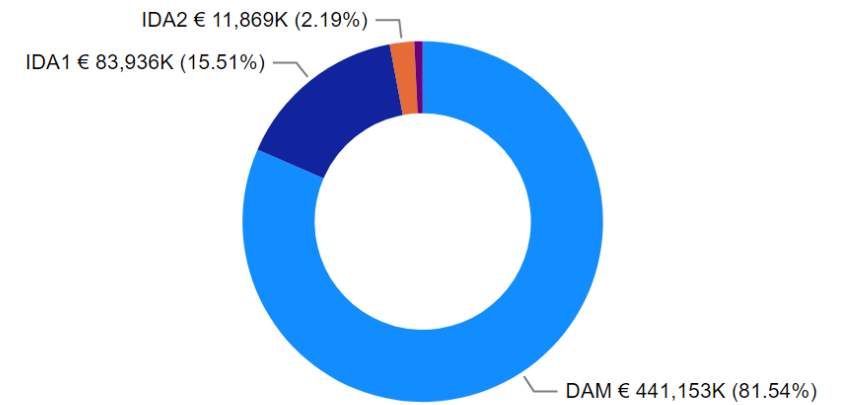
Ex-Ante Monthly Volume by Market



Ex-Ante Volumes (MWh)



Ex-Ante Values (€)



● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

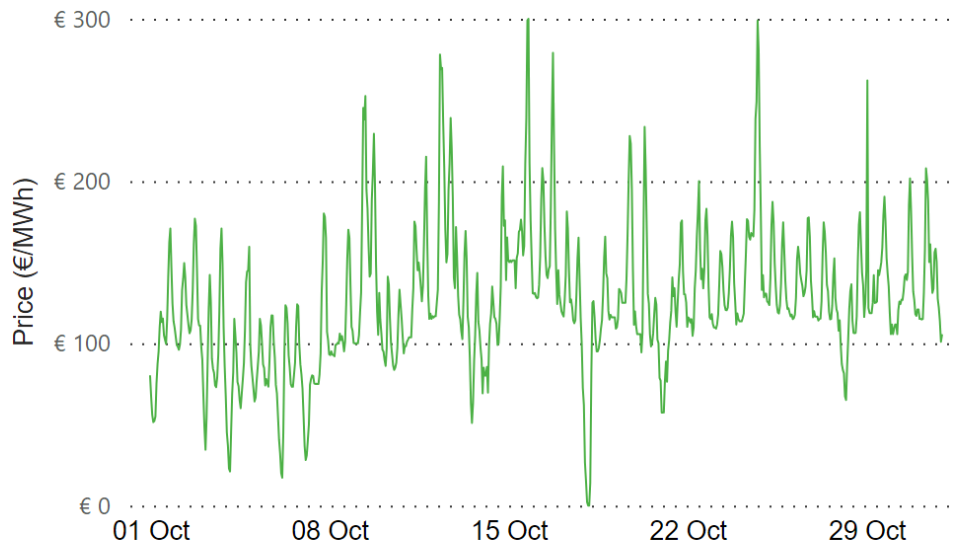
● DAM ● IDA1 ● IDA2 ● IDA3 ● IDC

# Day Ahead Market October 2023

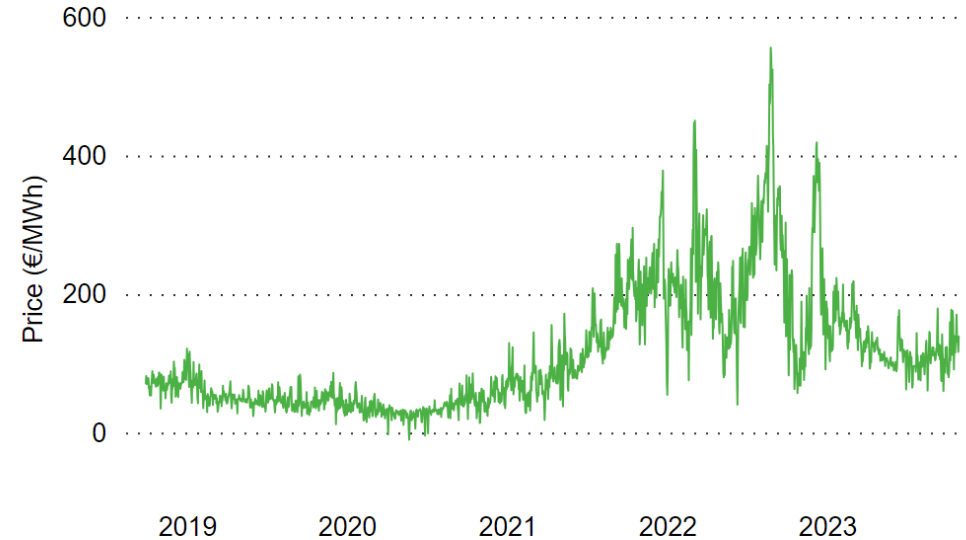
€ 125.54  
Average DAM Price  
€ 0.00  
Min DAM Price  
€ 300.00  
Max DAM Price

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

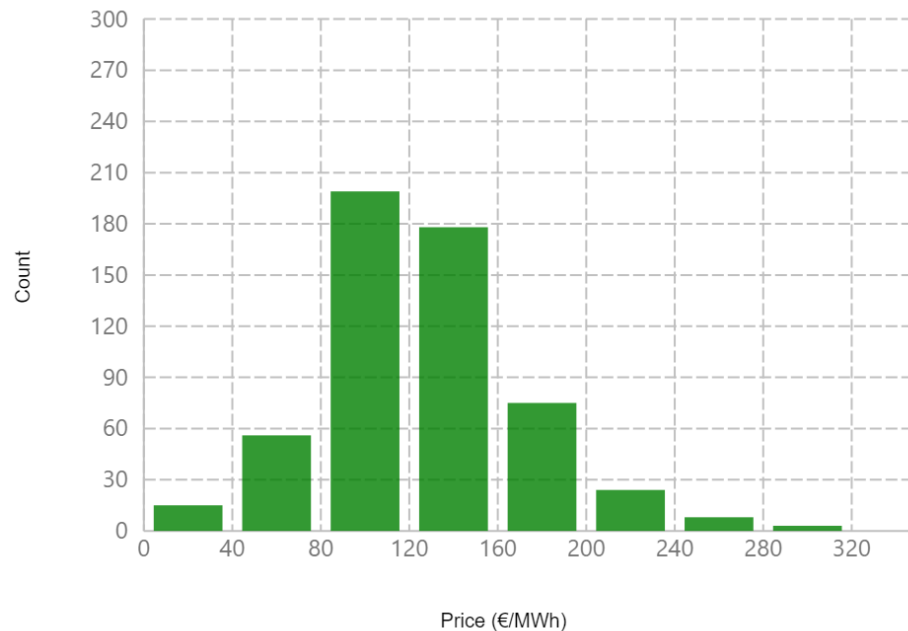
DAM Prices



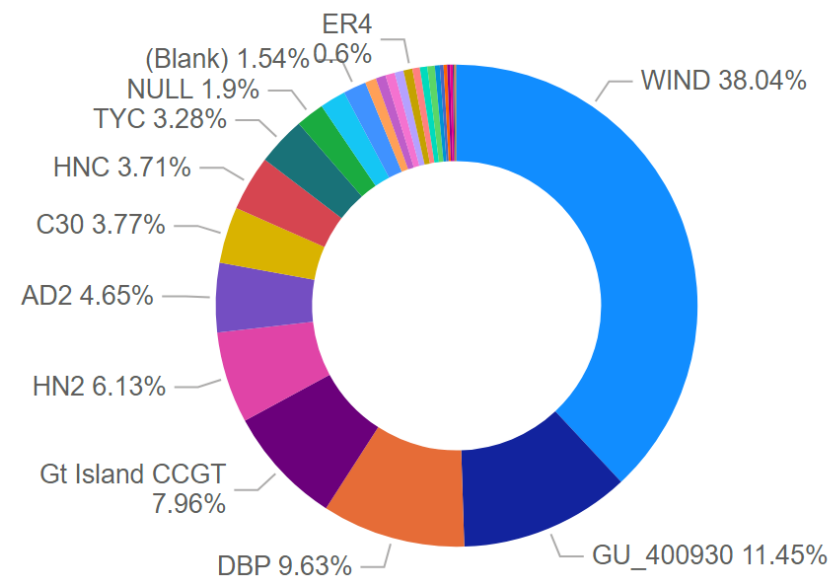
Historic Daily Average DAM Prices



Histogram of DAM Prices



DAM Sell Side Generator Order Results



# Intraday Market October 2023

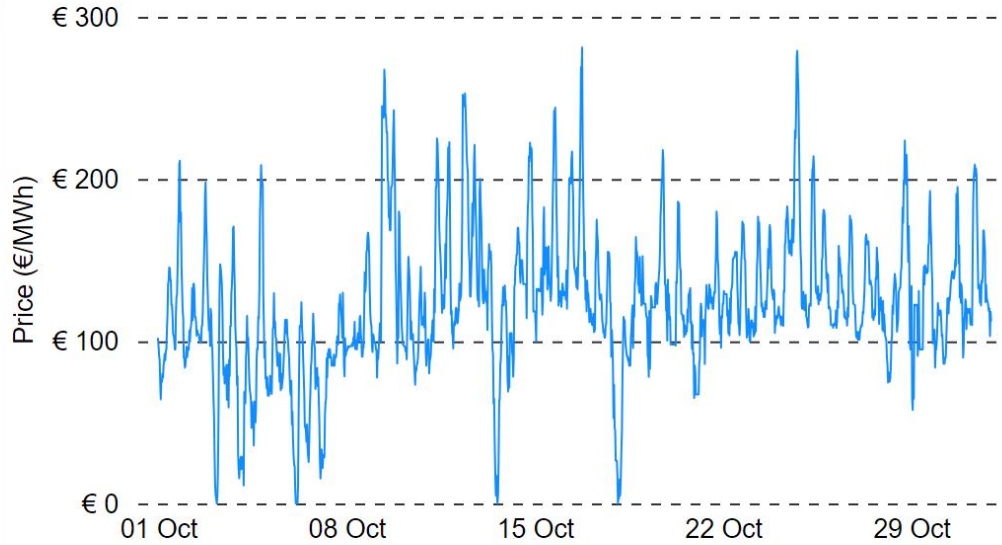
€ 122.61  
Average IDA1 Price

€ 0.00  
Min IDA1 Price

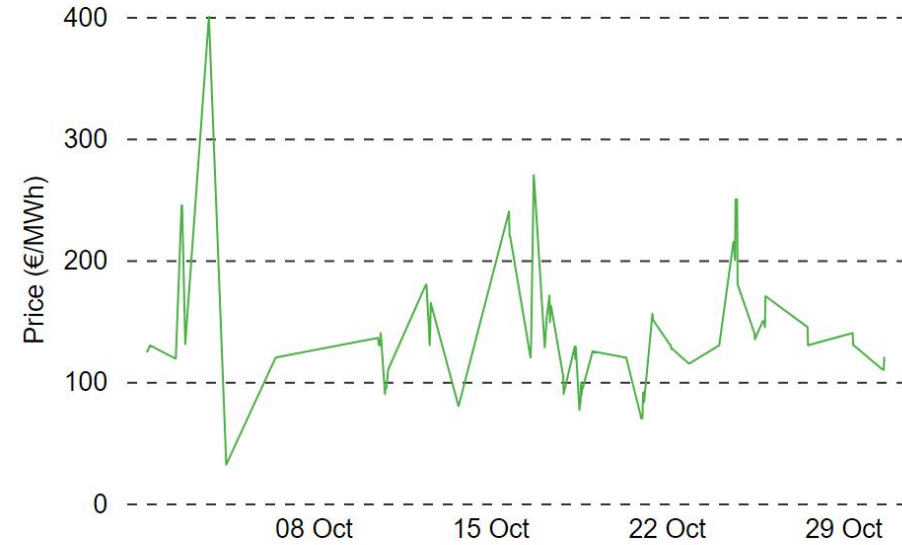
€ 281.15  
Max IDA1 Price

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

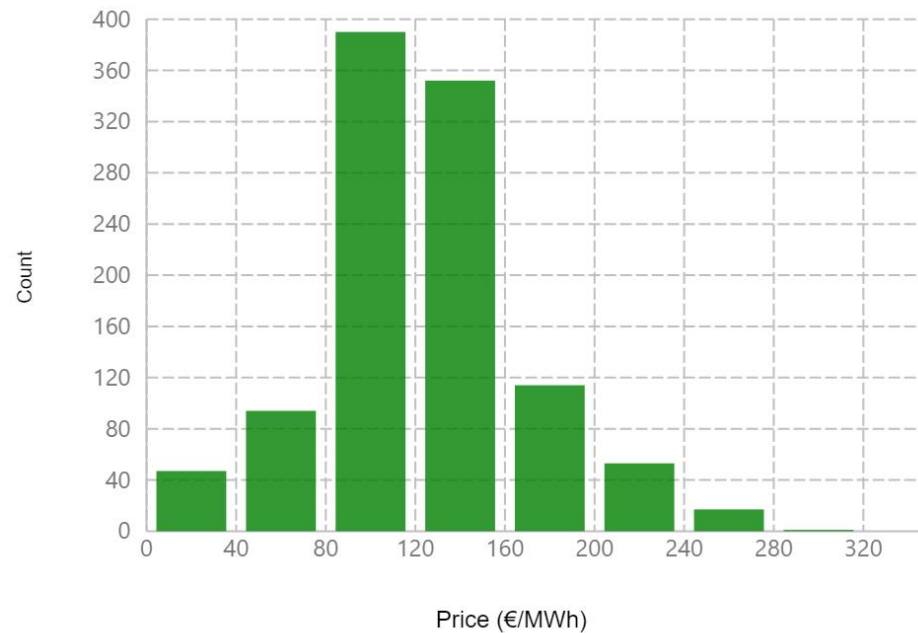
### IDA 1 Prices



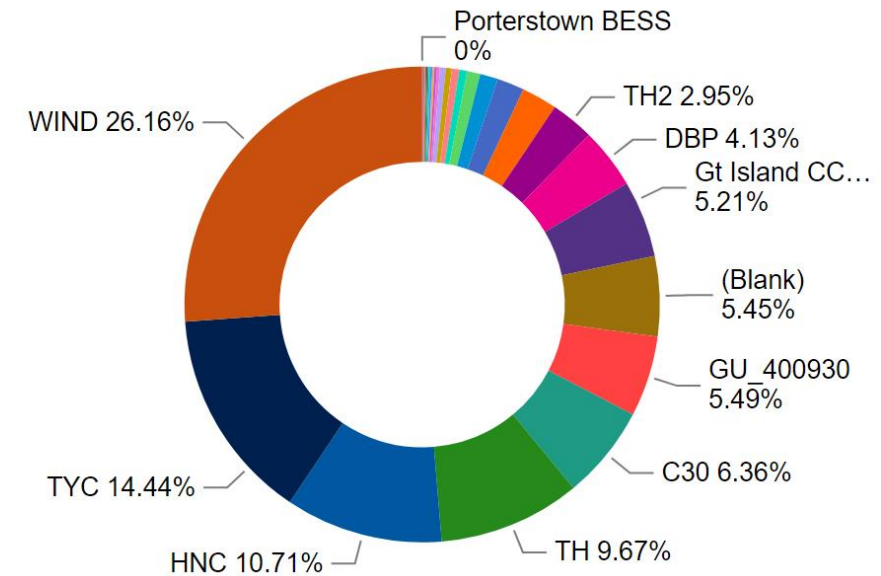
### IDC Prices



### Histogram of IDA1 Prices



### IDA1 Sell Order Results By Market Participant



# SEM vs GB

## October 2023

### SEM Day Ahead Price

€ 125.54  
Average Price  
€ 0.00  
Min Price  
€ 300.00  
Max Price

### GB Day Ahead Price

€ 96.72  
Average Price  
-€ 5.58  
Min Price  
€ 275.23  
Max Price

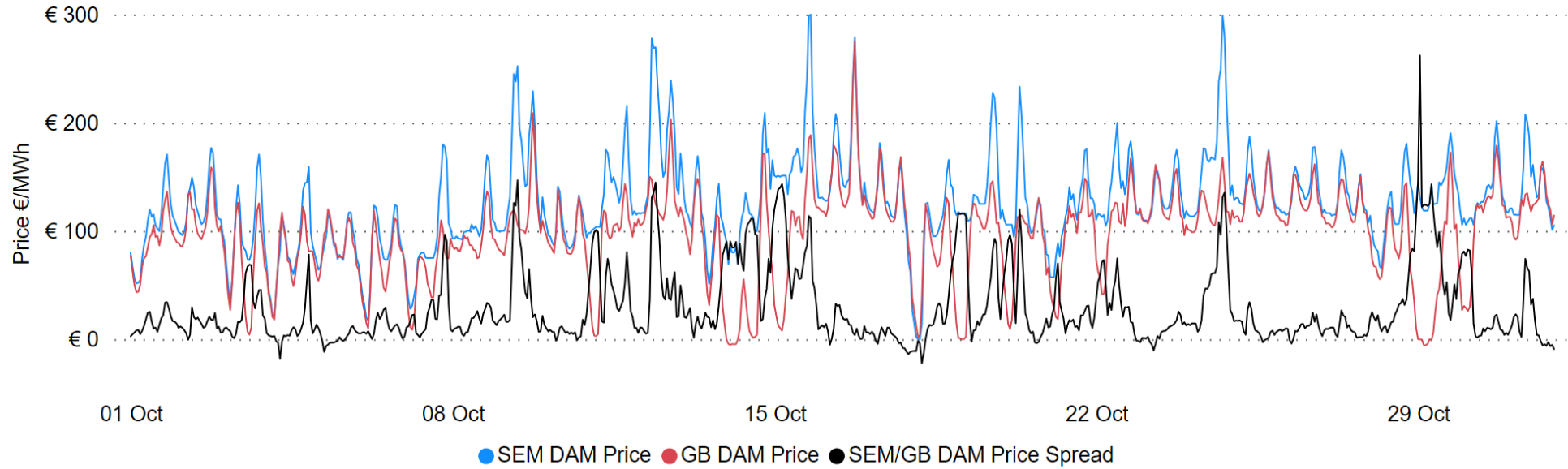
### SEM IDA1 Price

€ 122.39  
Average Price  
€ 0.00  
Min Price  
€ 281.15  
Max Price

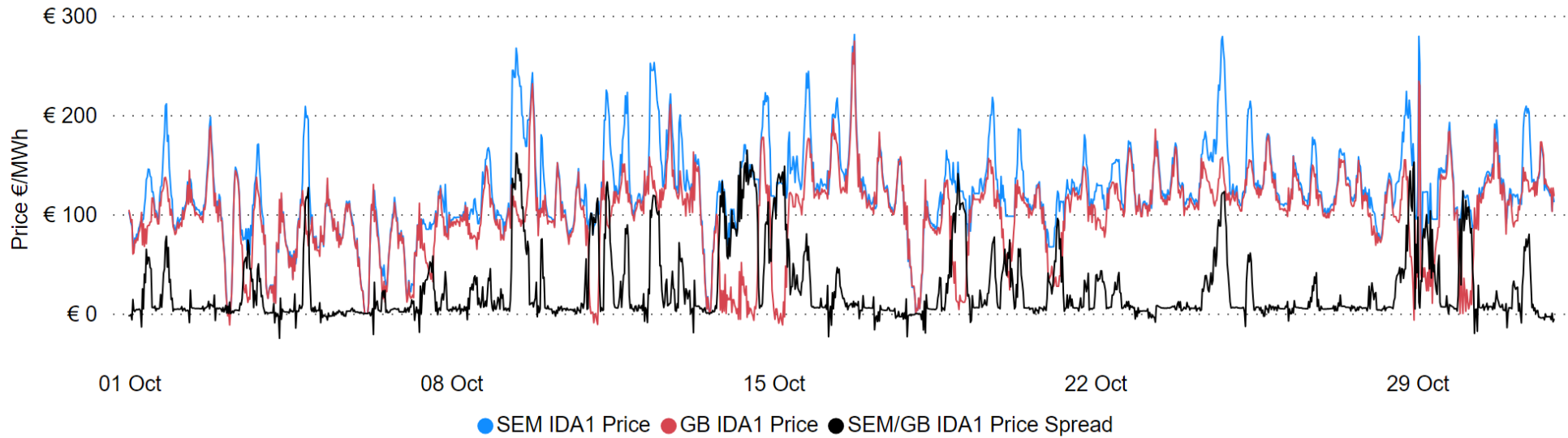
### GB IDA1 Prices

€ 98.47  
Average Price  
-€ 11.56  
Min Price  
€ 274.47  
Max Price

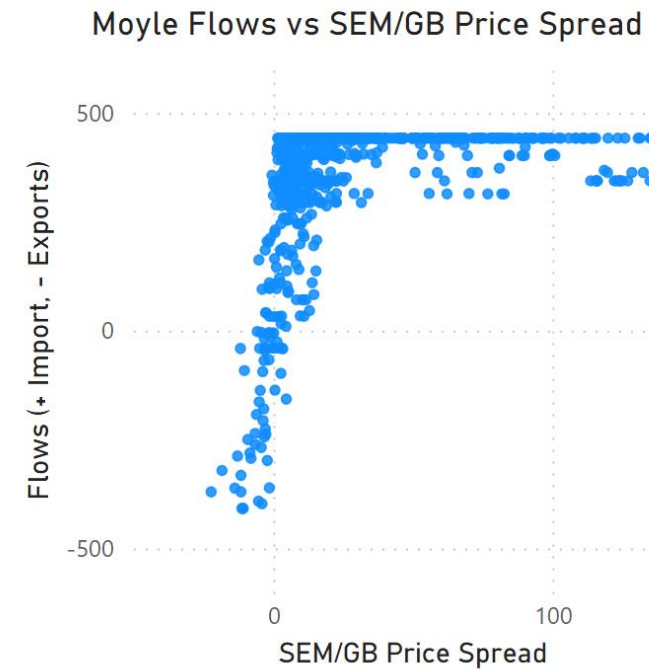
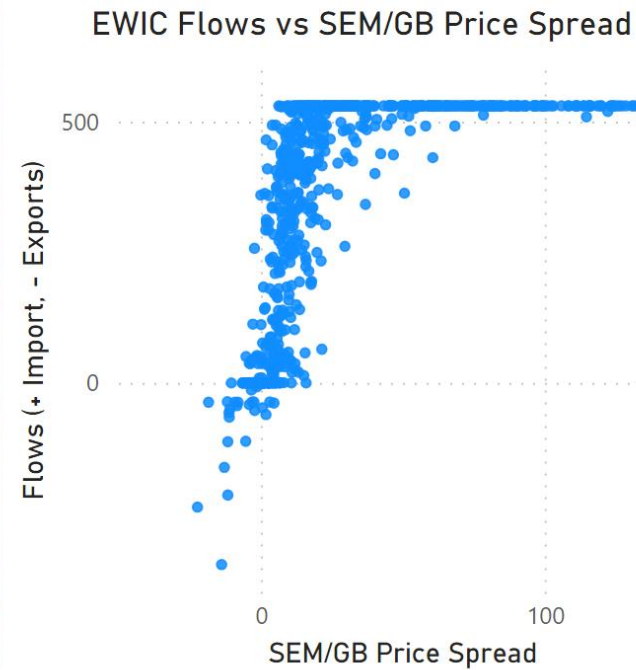
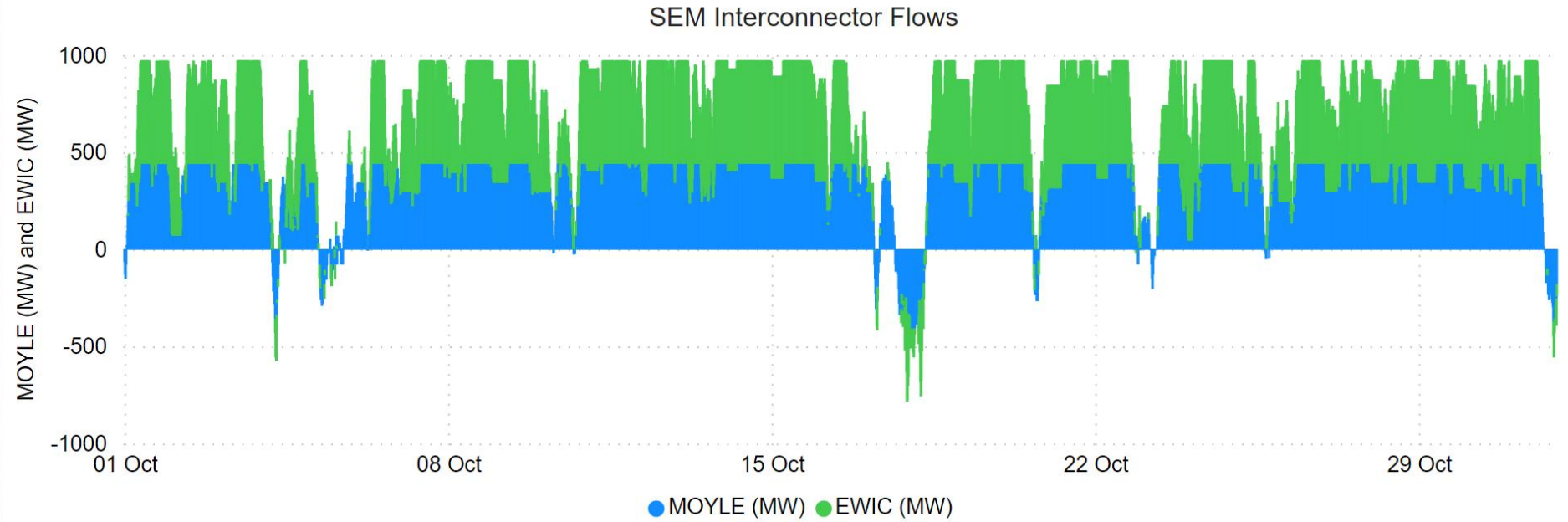
### SEM & GB DAM Prices



### SEM & GB IDA1 Prices



# SEM Interconnectors October 2023



## Interconnector Flows

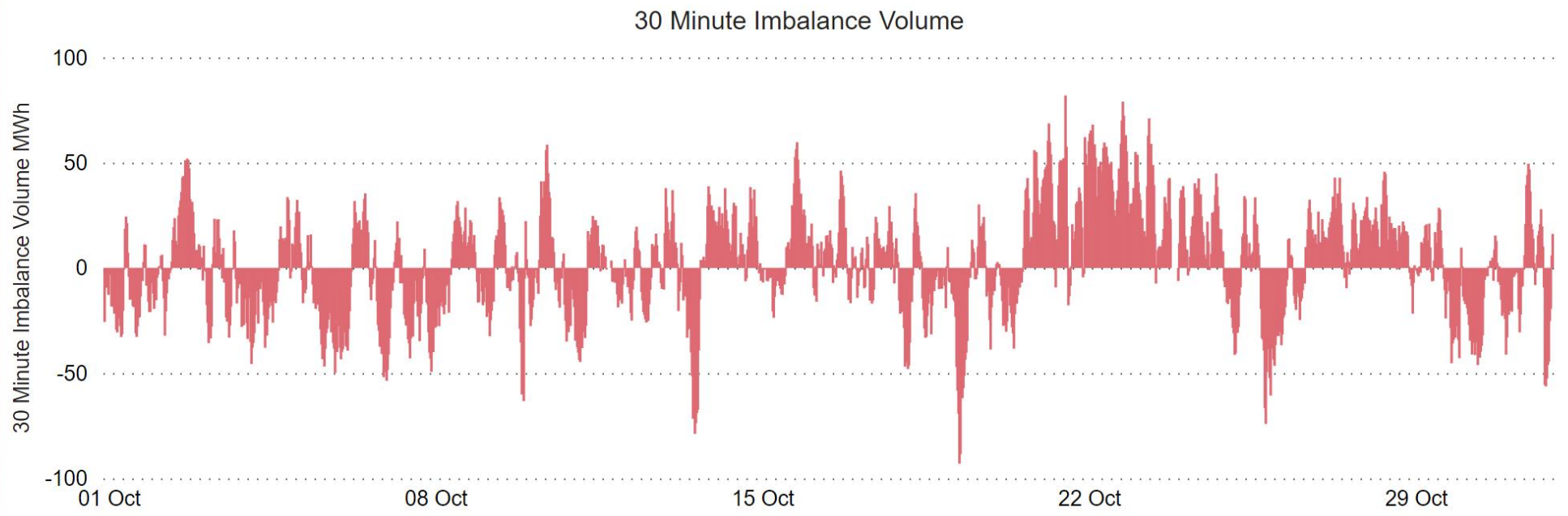
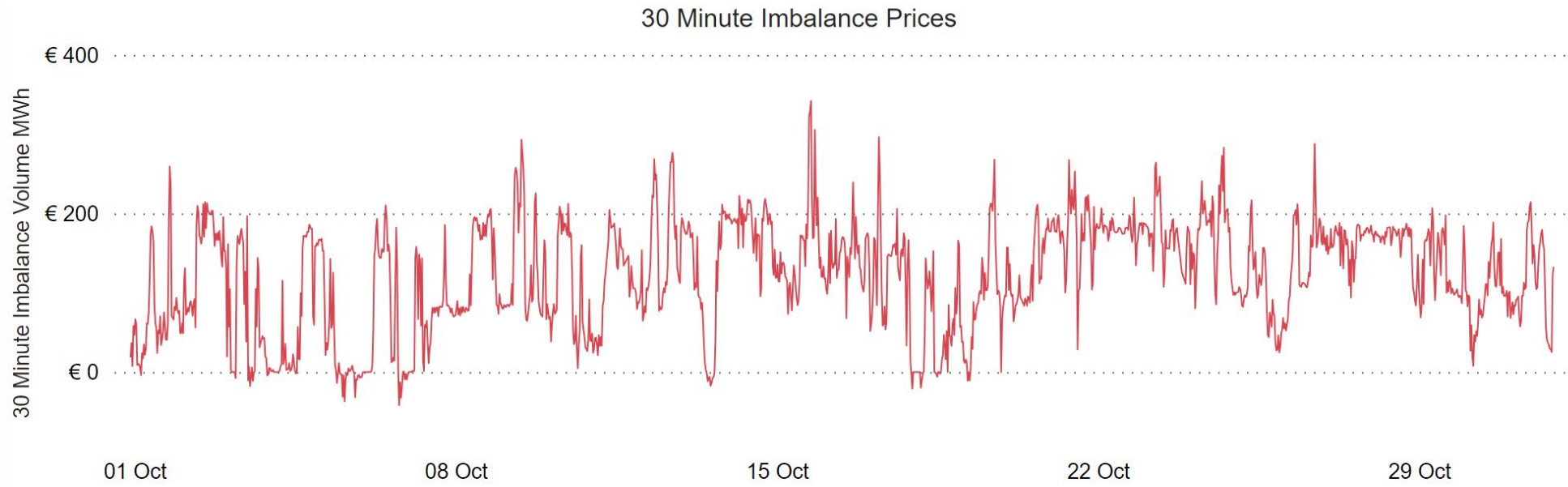
October 2023

Moyle Imports	381
EWIC Imports	415
Moyle Exports	-159
EWIC Exports	-90
SEM Imports	770
SEM Exports	-200
SEM Net Import/Export	698



# Balancing Market October 2023

30 Minutes Imbalance Price  
€ 120.77  
Average Price  
-€ 42.03  
Lowest Price  
€ 341.96  
Highest Price



## Demand and Generation Mix

# Demand October 2023

## SEM Demand (MW)

4,516.05	4,330.14
SEM Average 2023	SEM Average 2022
3,417.16	3,226.03
SEM Min 2023	SEM Min 2022
5,386.84	5,176.10
SEM Max 2023	SEM Max 2022

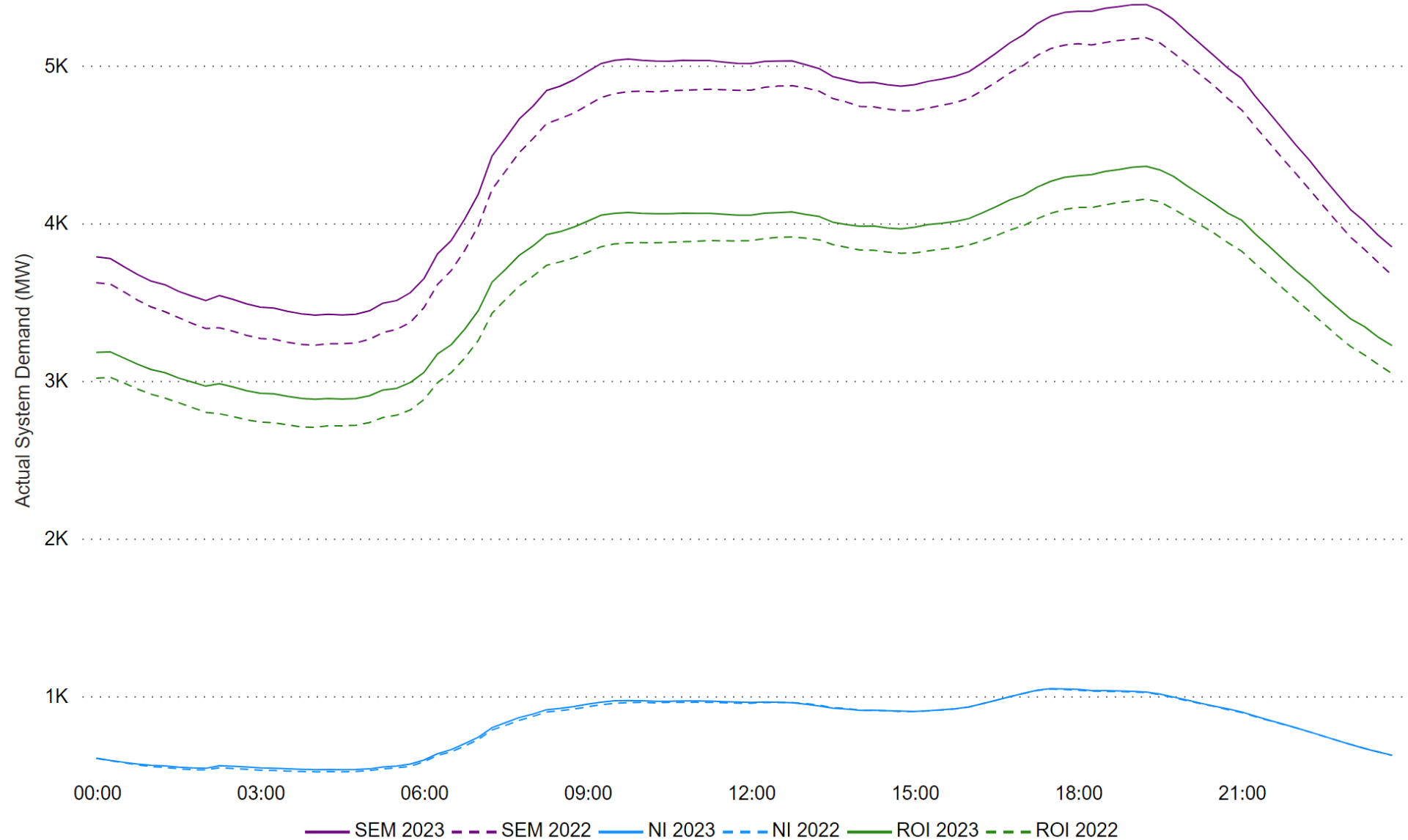
## NI Demand (MW)

815.95	809.30
NI Average 2023	NI Average 2022
533.90	520.35
NI Min 2023	NI Min 2022
1,047.26	1,044.84
NI Max 2023	NI Max 2022

## ROI Demand (MW)

3,700.11	3,520.85
ROI Average 2023	ROI Average 2022
2,883.03	2,705.71
ROI Min 2023	ROI Min 2022
4,361.03	4,152.55
ROI Max 2023	ROI Max 2022

### Monthly Average Hourly Demand Curves

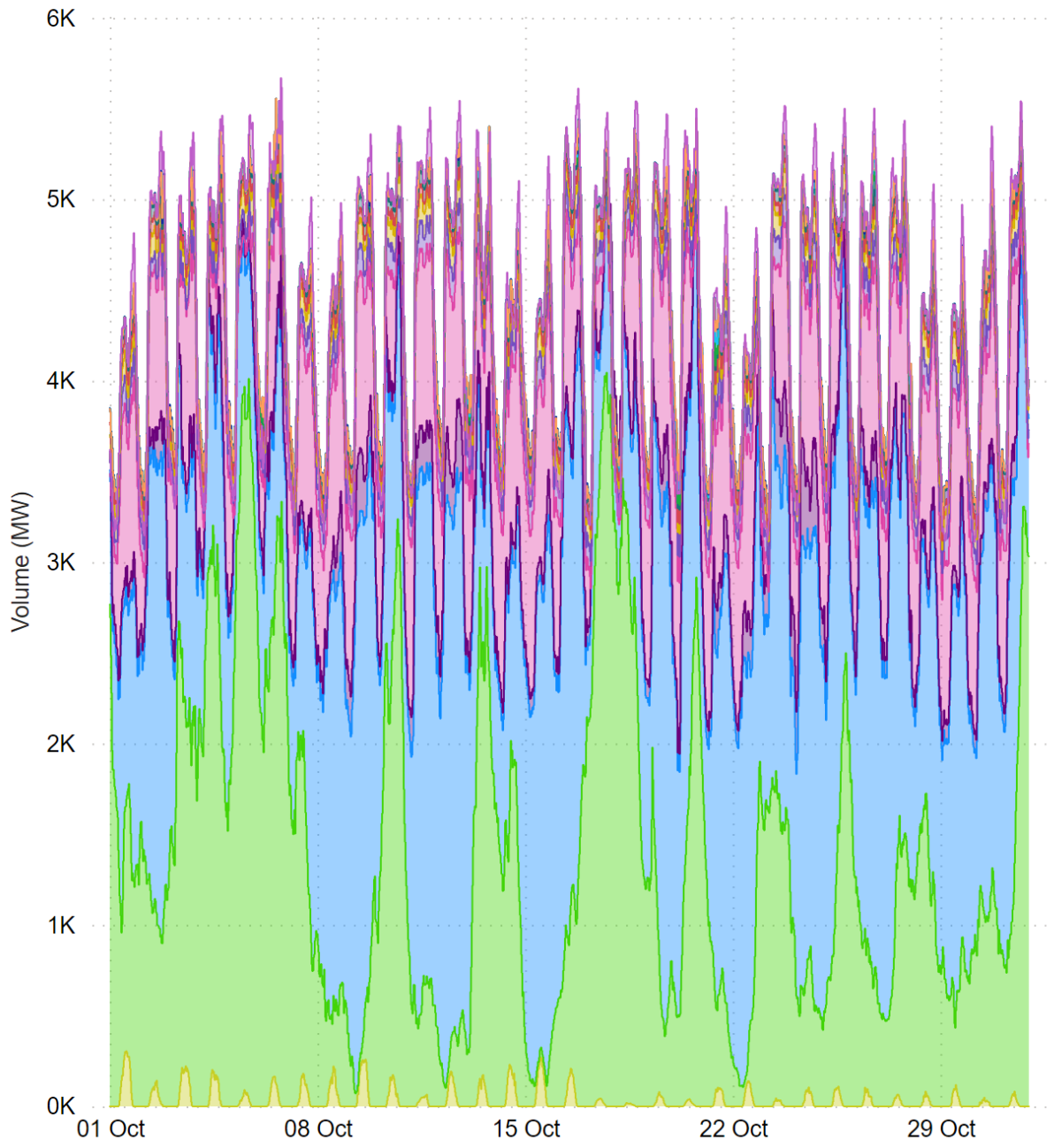


# Fuel Mix October 2023

Fuel Type	Average (MW)	%
CCGT	1,736	39.6%
WIND	1,364	31.1%
INTERCONNECTOR	697	15.9%
COAL	152	3.5%
HYDRO	130	3.0%
CHP	141	3.2%
PEAT	54	1.2%
WASTE	77	1.7%
SOLAR	33	0.7%
DSR	23	0.5%
OIL	2	0.1%
OCGT	2	0.1%
BATTERY	-4	-0.1
PUMPED STORAGE	-18	-0.4%

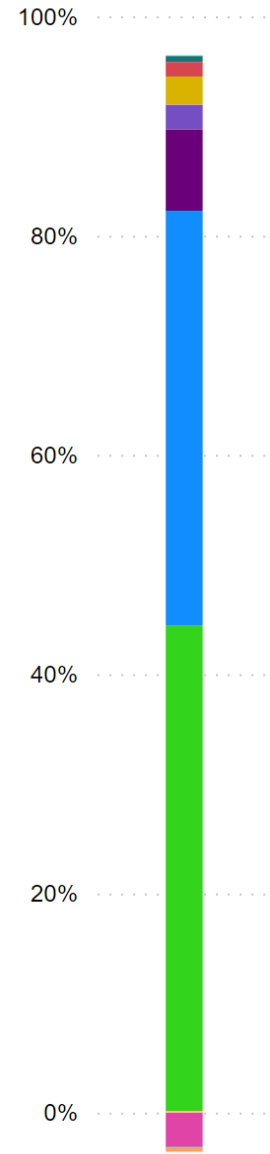
Fuel Type	Max (MW)	Min (MW)
CCGT	3,224	408
WIND	4,044	38
INTERCONNECTOR	979	-749
COAL	546	76
HYDRO	157	68
CHP	164	39
PEAT	82	41
WASTE	81	41
SOLAR	304	0
DSR	137	0
OIL	129	0
OCGT	85	0
BATTERY	33	-54
PUMPED STORAGE	292	-301

SEM 30 Minute Fuel Mix

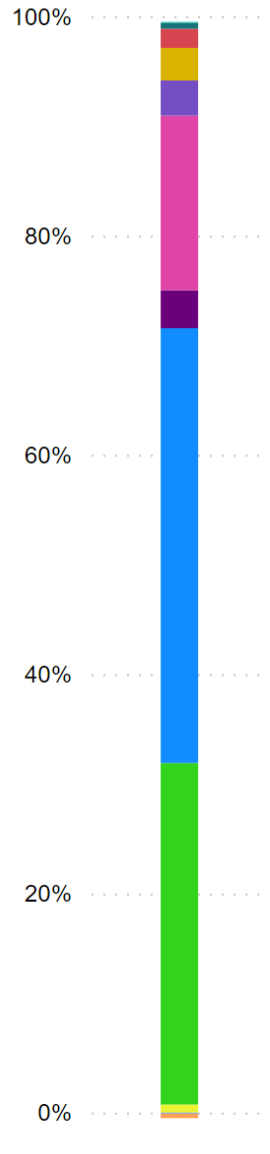


- SOLAR
- WIND
- CCGT
- COAL
- IC
- CHP
- HYDRO
- PEAT
- WASTE
- DSR
- OIL
- OCGT
- BATTERY
- PS

SEM Fuel Mix  
October 2022



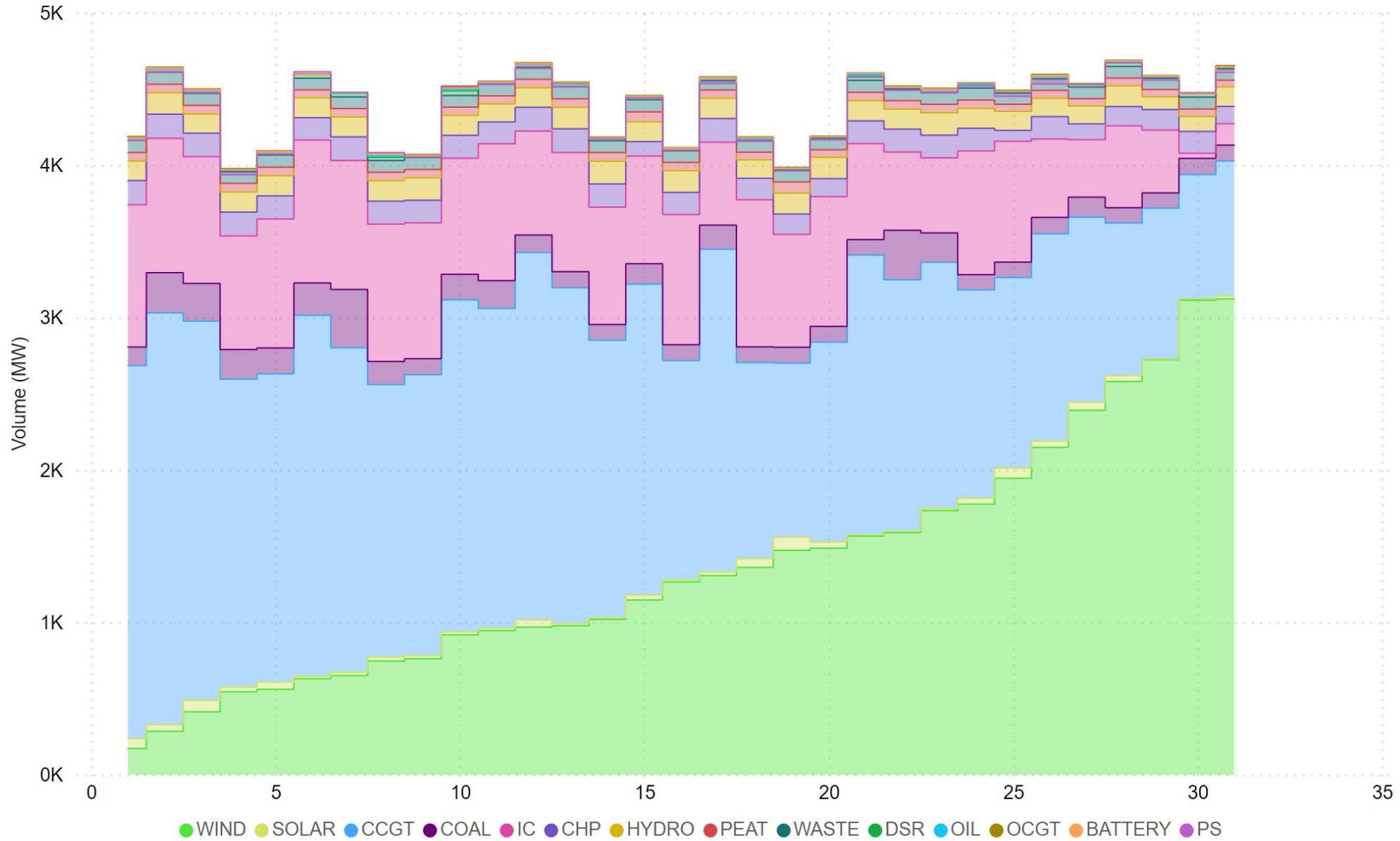
SEM Fuel Mix  
October 2023



# Fuel Mix Ranked by Wind Volume October 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 October 2023

Average Flow NI to ROI (MW)

-296.59

Average Flow ROI to NI (MW)

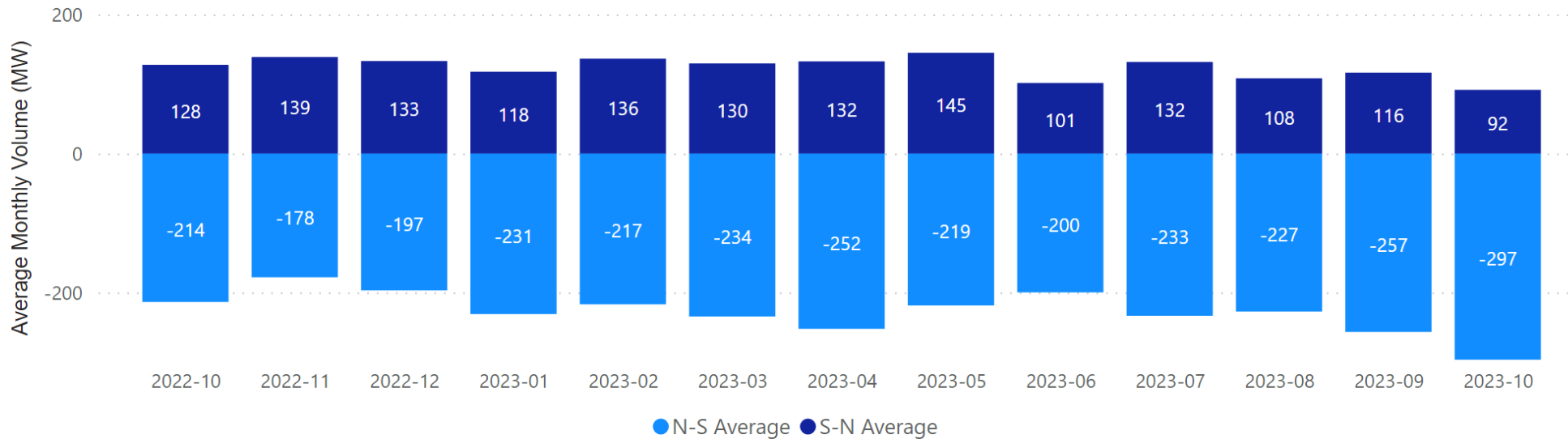
91.55

Average Net Flow (MW)

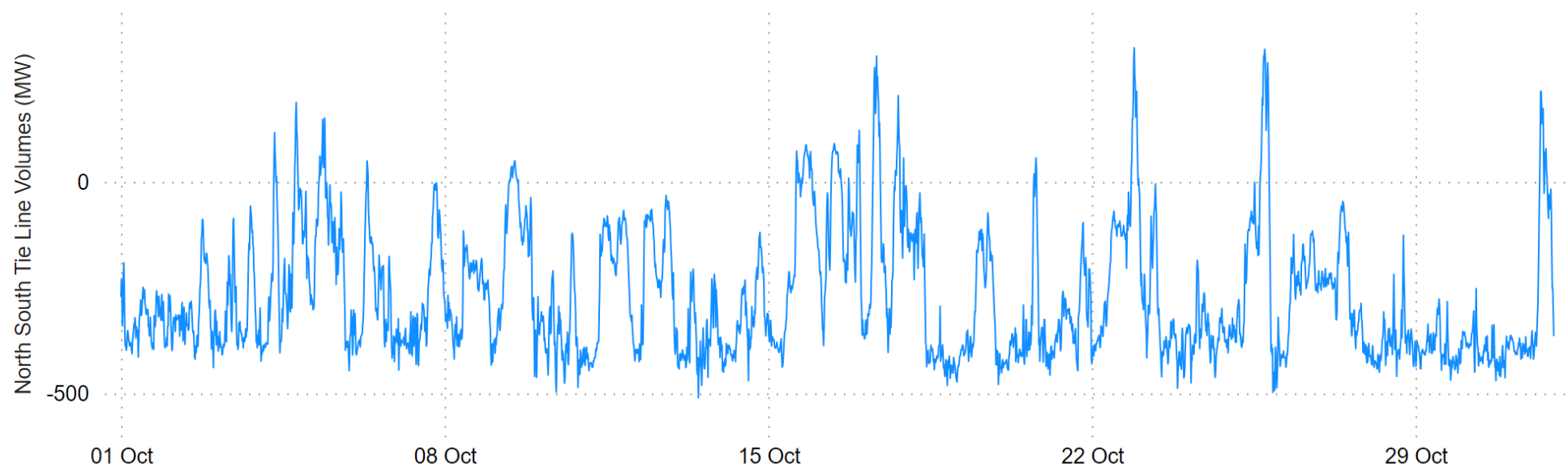
-273.03

-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



# Wind Generation October 2023

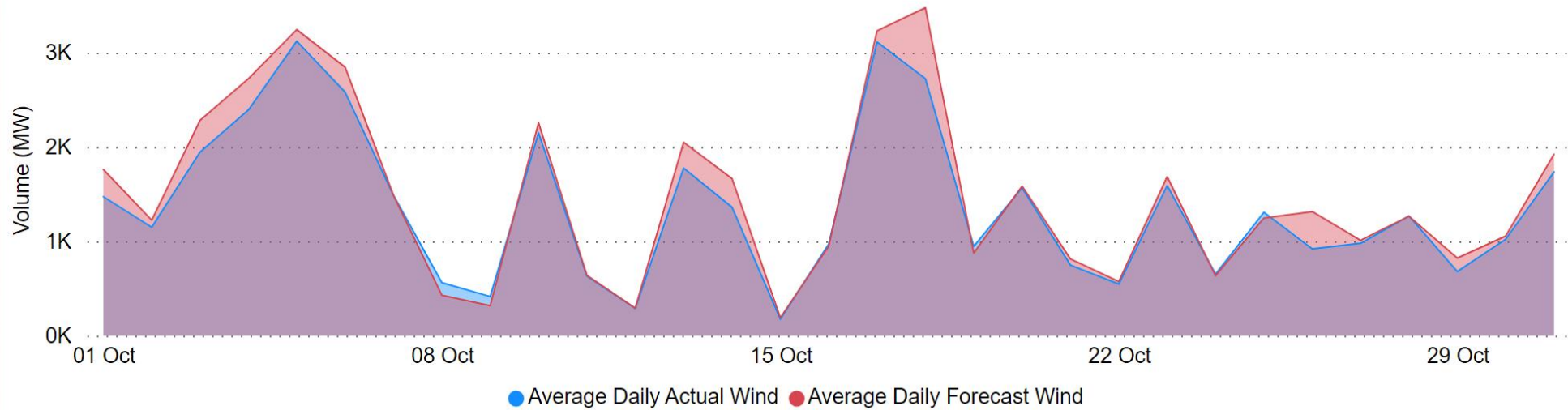
Average Daily Actual Wind (MW)  
1,363

Average Daily Forecast Wind (MW)  
1,479

Min SNSP %  
13.83

Max SNSP %  
75.58

Actual Daily Average Wind Relative to Forecast Daily Average Wind



SNSP %



# CO<sub>2</sub> October 2023

## CO2 Intensity

232.48  
Monthly Average (gCO<sub>2</sub>/KWh)  
112  
Monthly Low (gCO<sub>2</sub>/KWh)  
382  
Monthly High (gCO<sub>2</sub>/KWh)

## CO2 Emissions

1157.03  
Monthly Average (tCO<sub>2</sub>/hr)  
650  
Monthly Low (tCO<sub>2</sub>/hr)  
1807  
Monthly High (tCO<sub>2</sub>/hr)

### Note

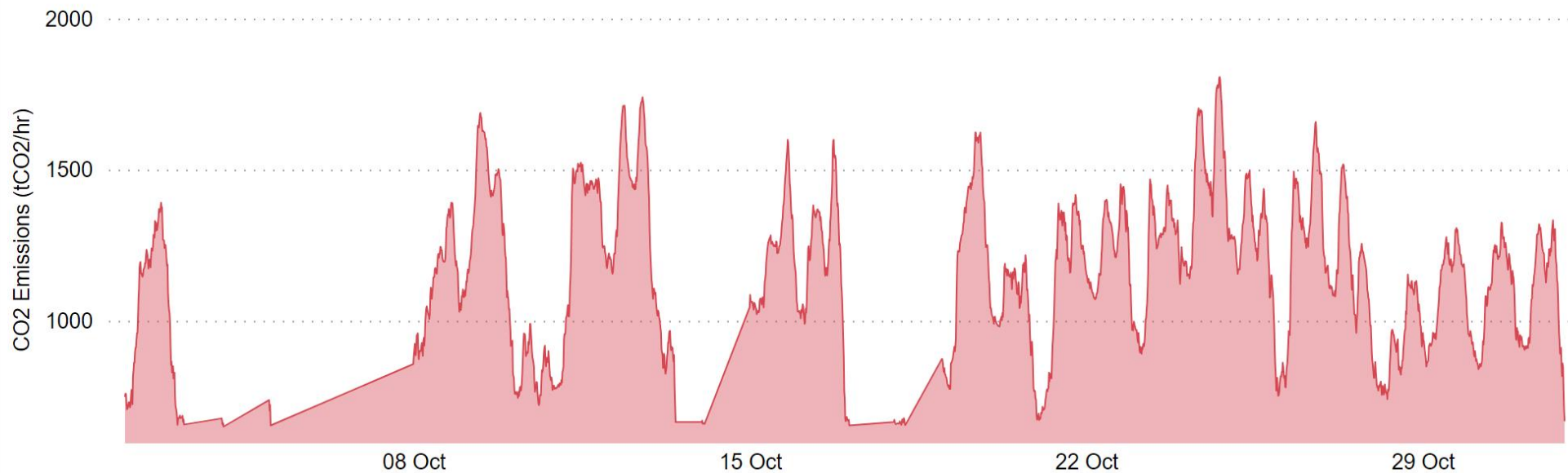
CO2 Emissions data missing  
3rd Oct 05:30 - 4th Oct 00:00  
4th Oct 01:15 - 5th Oct 00:00  
5th Oct 00:45 - 8th Oct 00:00  
13th Oct 11:15 - 14th Oct 00:00  
14th Oct 01:30 - 15th Oct 00:00  
17th Oct 01:45 - 18th Oct 00:00  
18th Oct 05:45 - 19th Oct 00:00

Data sourced from - SONI/ERIGRID

CO2 Intensity



CO2 Emissions

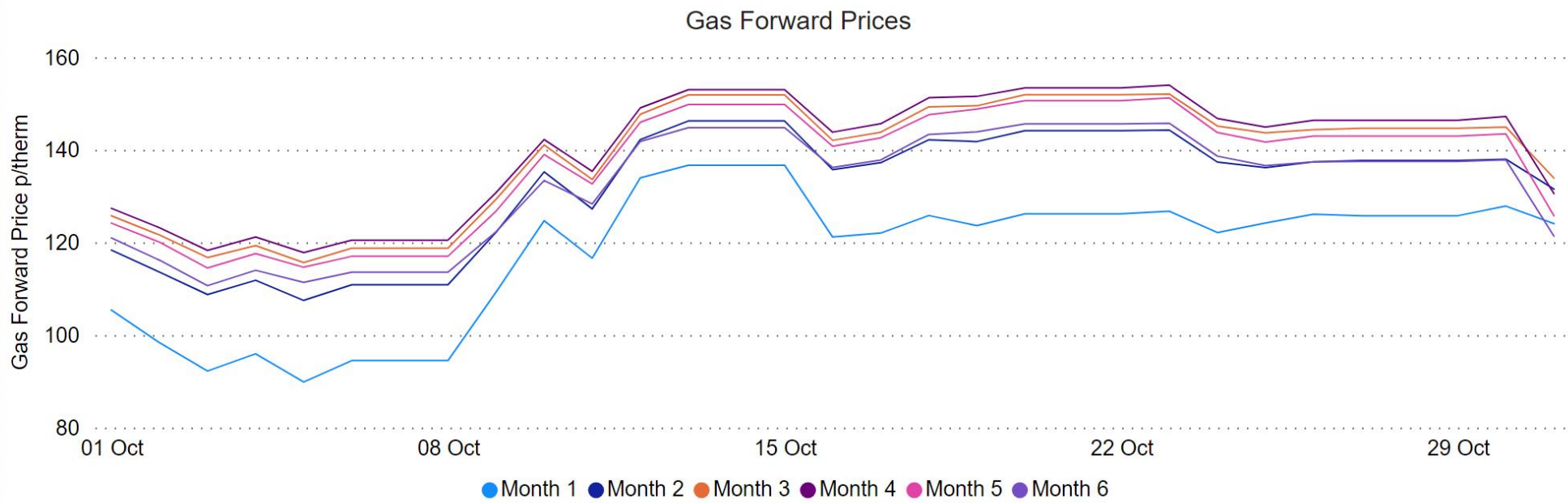
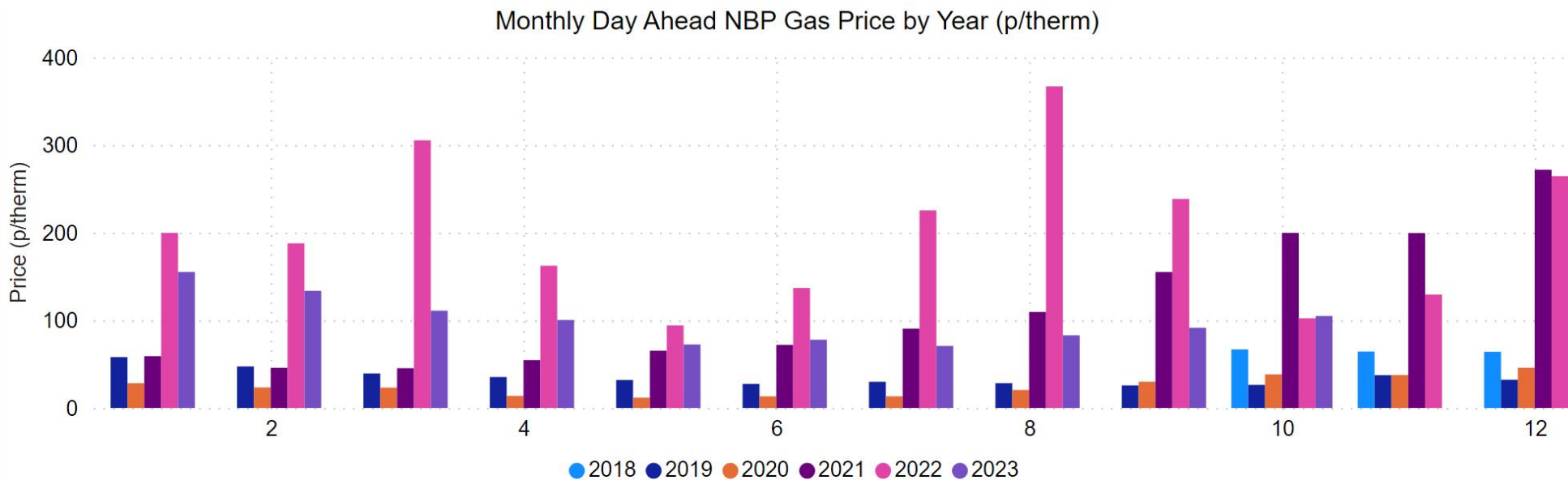




## Fuel Costs and Spreads

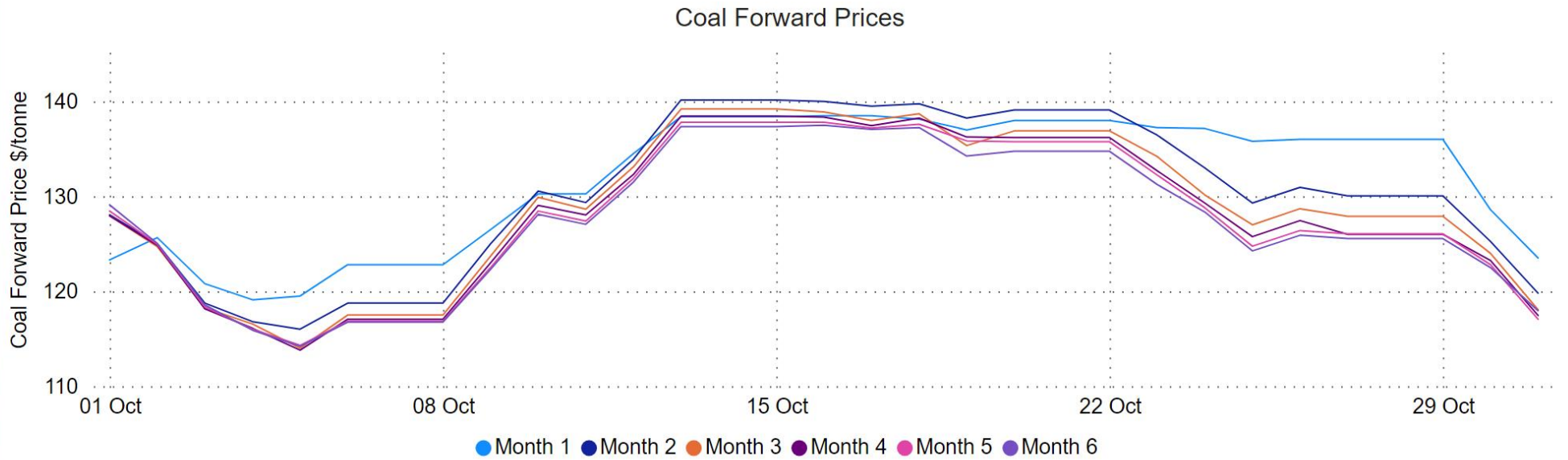
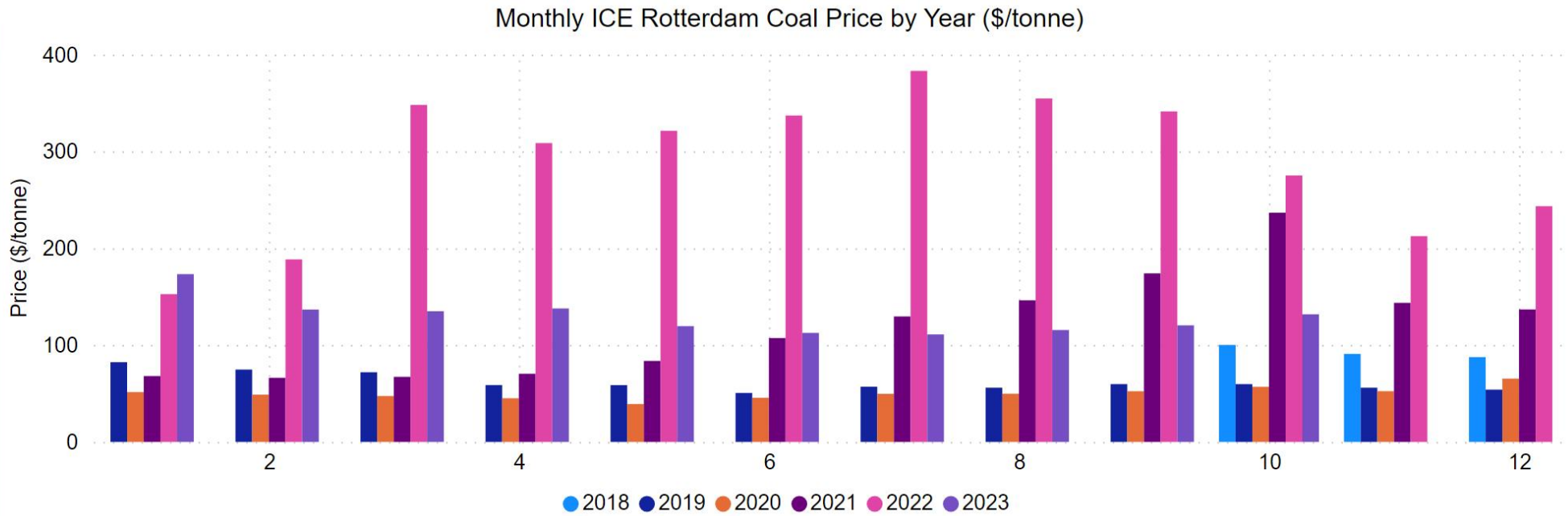
# Gas Price October 2023

104.88  
Monthly Average (p/therm)  
63.05  
Monthly Low (p/therm)  
138.20  
Monthly High (p/therm)



# Coal Price October 2023

\$131.80  
Monthly Average \$/tonne  
\$119.10  
Monthly Low \$/tonne  
\$138.50  
Monthly High \$/tonne



# Carbon Price October 2023

€ 81.10  
Monthly Average €/tonne

€ 78.25  
Monthly Low €/tonne

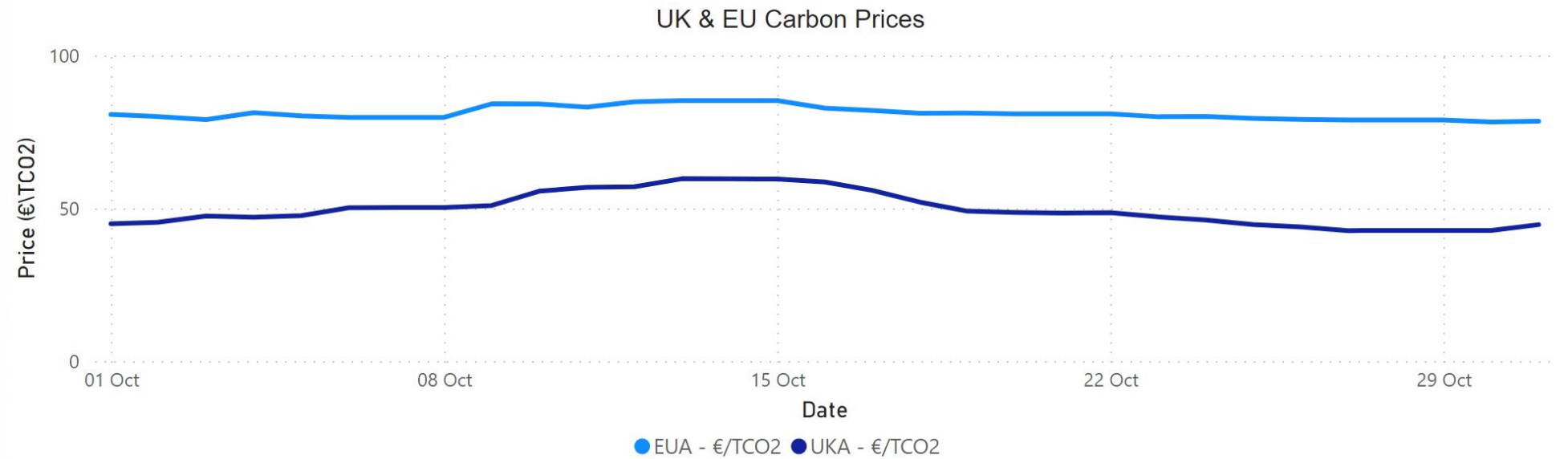
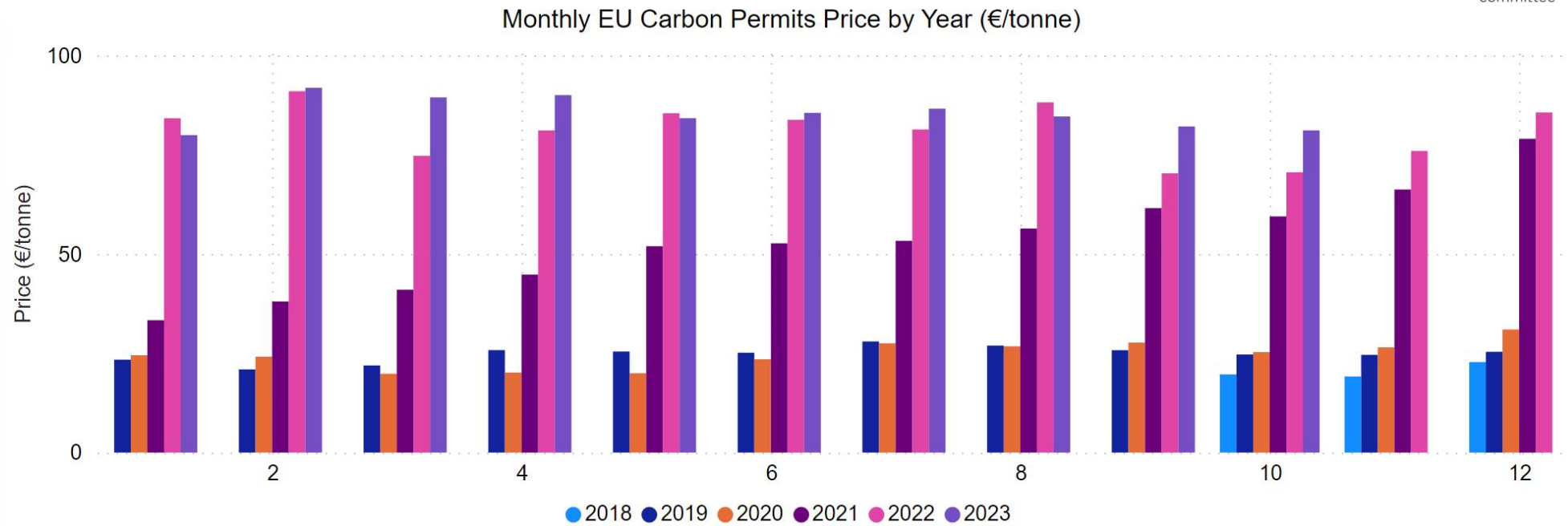
€ 85.23  
Monthly High €/tonne

UK Carbon Prices (€/tonne)

€ 49.75  
Monthly Average

€ 42.72  
Monthly Low

€ 59.70  
Monthly High

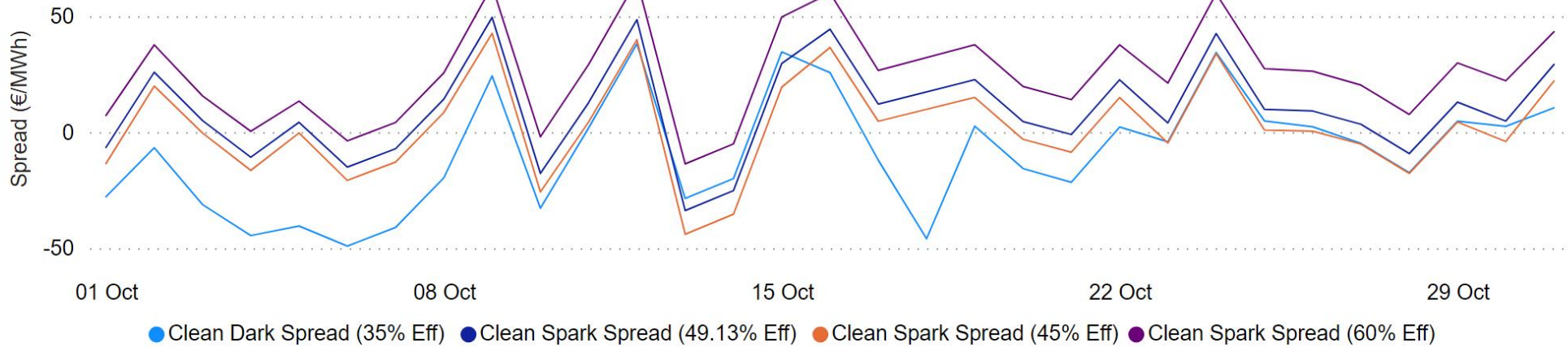


# Spark Spreads October 2023

**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.

Clean Dark Spread v Clean Spark Spread



Clean Dark Spread v Clean Spark Spread (October 2018 Onwards)

