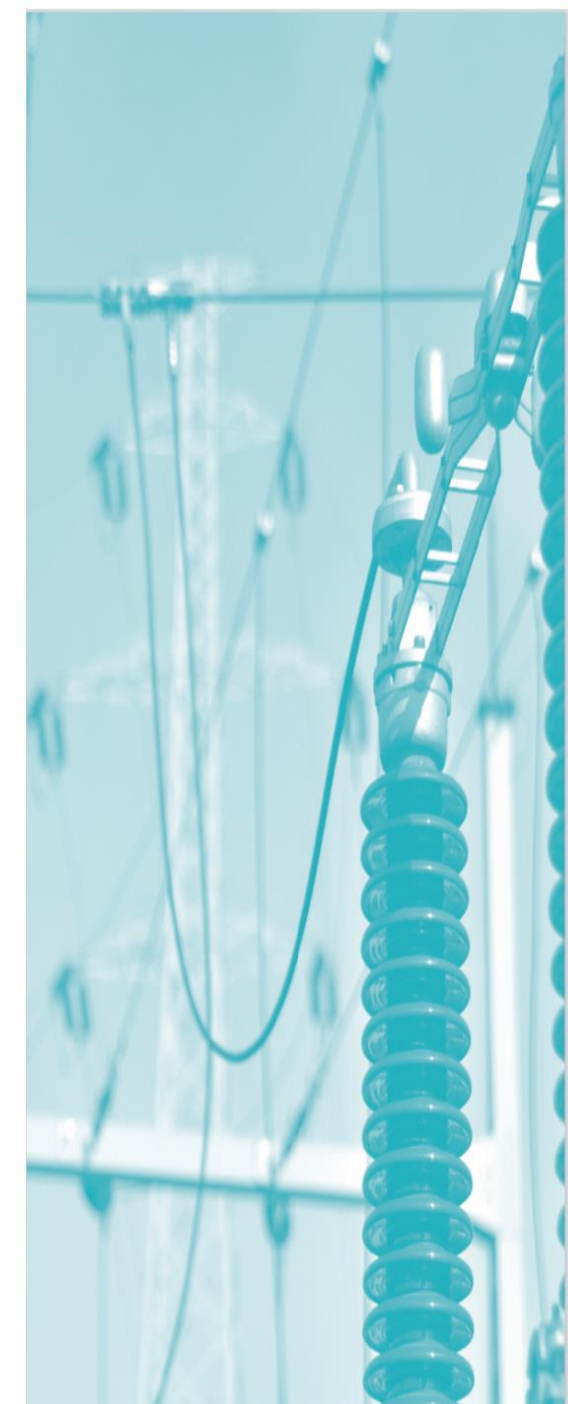


# Energy Market Monitoring Report

December 2022



## Market Results

# Summary Dashboard

Monthly Averages	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
DAM (€/MWh)	201.46	175.11	293.25	218.26	143.27	181.84	267.19	387.64	283.25	136.09	143.12	276.52
% Change from previous month	-20%	-13%	67%	-26%	-34%	27%	47%	45%	-27%	-52%	5%	93%
% Change from previous year	157%	204%	302%	155%	48%	91%	86%	195%	45%	-37%	-30%	10%
Actual System Demand (MW)	4834	4833	4675	4408	4208	4169	4085	4099	4197	4330	4733	4885
% Change from previous month	1%	0%	-3%	-6%	-5%	-1%	-2%	0%	2%	3%	9%	3%
% Change from previous year	2%	3%	4%	3%	0%	2%	-1%	-1%	-2%	-1%	0%	2%
Actual Wind Generation (MW)	1682	2777	1559	1426	1428	1129	854	817	1081	2047	2233	1647
% Change from previous month	-15%	65%	-44%	-9%	0%	-21%	-24%	-4%	32%	89%	9%	-26%
% Change from previous year	11%	13%	-3%	31%	34%	13%	90%	-3%	24%	33%	45%	-16%
Gas Price p/therm	199.74	188.07	305.39	162.26	95.13	139.03	222.44	365.79	235.85	102.32	128.91	264.54
% Change from previous month	-27%	-6%	62%	-47%	-41%	46%	60%	64%	-36%	-57%	26%	105%
% Change from previous year	240%	317%	586%	217%	45%	93%	145%	234%	52%	-49%	-35%	-3%
Carbon Price (€/Tonne)	84.16	90.96	74.69	81.09	85.41	83.74	81.34	88.20	70.29	70.46	75.84	85.61
% Change from previous month	7%	8%	-18%	9%	5%	-2%	-3%	8%	-20%	0%	8%	13%
% Change from previous year	149%	138%	81%	77%	63%	59%	52%	56%	14%	19%	15%	8%
Coal Price (\$/tonne)	152.64	188.51	348.03	308.61	321.33	337.07	383.18	354.67	341.33	275.16	212.52	243.46
% Change from previous month	12%	23%	85%	-11%	4%	5%	14%	-7%	-4%	-19%	-23%	15%
% Change from previous year	124%	185%	418%	338%	284%	214%	196%	142%	96%	16%	48%	78%
EWIC % Import Periods	17.61%	18.15%	68.75%	0.00%	12.33%	27.16%	33.03%	25.84%	16.25%	30.51%	18.61%	30.58%
EWIC % Export Periods	48.19%	59.19%	17.04%	0.00%	23.49%	43.56%	56.52%	51.92%	41.81%	46.24%	54.10%	35.08%
EWIC % Not Flow Periods	34.21%	33.37%	14.21%	100.00%	64.18%	29.28%	10.45%	22.24%	45.28%	23.25%	27.29%	34.34%
Moyle % Import Periods	35.65%	27.31%	55.04%	56.33%	38.54%	40.44%	24.90%	31.55%	35.35%	40.52%	29.51%	44.19%
Moyle % Export Periods	64.35%	72.69%	44.83%	43.63%	61.46%	59.56%	10.72%	66.26%	63.85%	59.44%	69.83%	55.78%
Moyle % Not Flow Periods	0.00%	7.14%	0.13%	0.00%	0.00%	0.00%	64.38%	2.18%	0.80%	0.03%	0.66%	0.03%

# Market Volumes December 2022

## Daily Average Volume MWh

DAM	124,627
IDA1	15,426
IDA2	2,785
IDA3	1,004
IDC	61

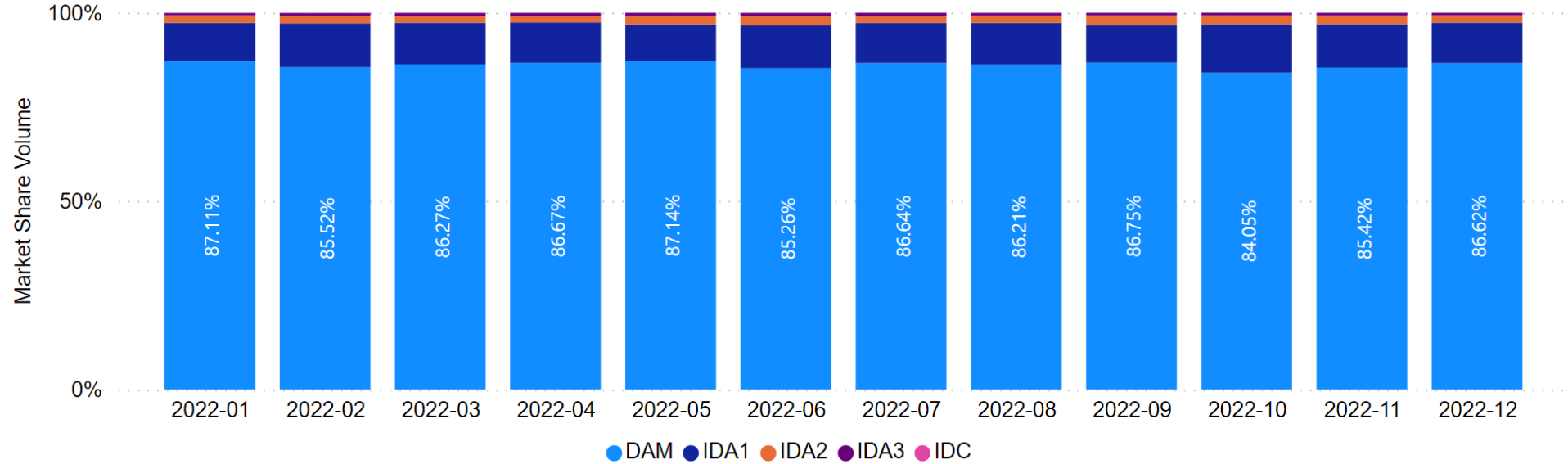
## Total Monthly Volume MWh

DAM	3,863,425
IDA1	478,197
IDA2	86,321
IDA3	31,110
IDC	1,289
<b>Total</b>	<b>4,460,342</b>

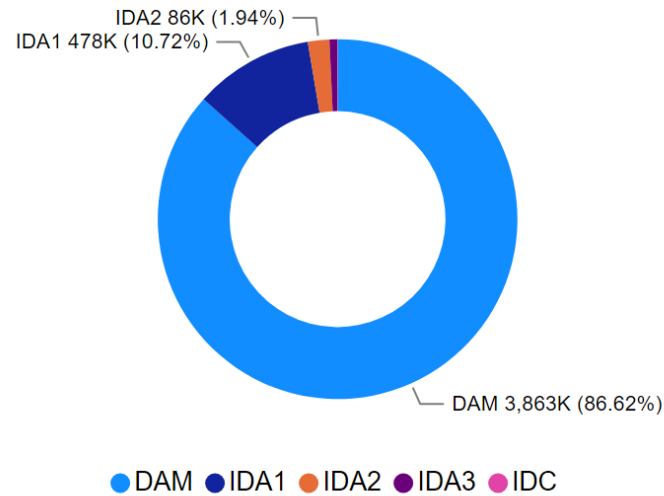
## Total Market Value €

IDC	€ 423,859
IDA3	€ 9,178,759
IDA2	€ 24,035,331
IDA1	€ 128,366,522
DAM	€ 1,116,392,703
<b>Total</b>	<b>€ 1,278,397,174</b>

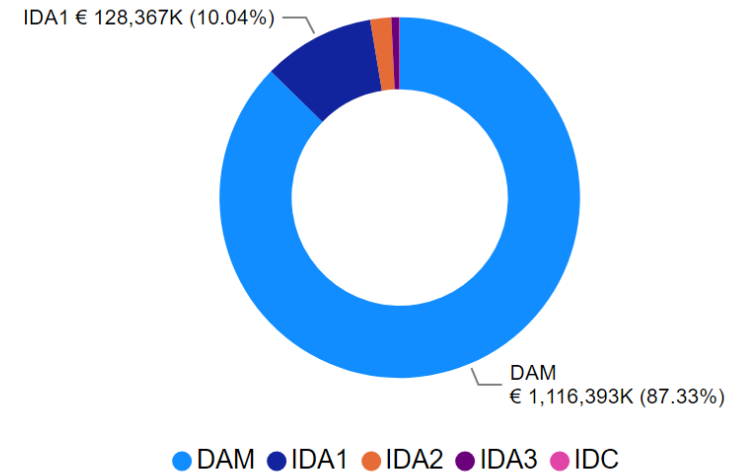
Ex-Ante Monthly Volume by Market



Ex-Ante Volumes (MWh)



Ex-Ante Values (€)

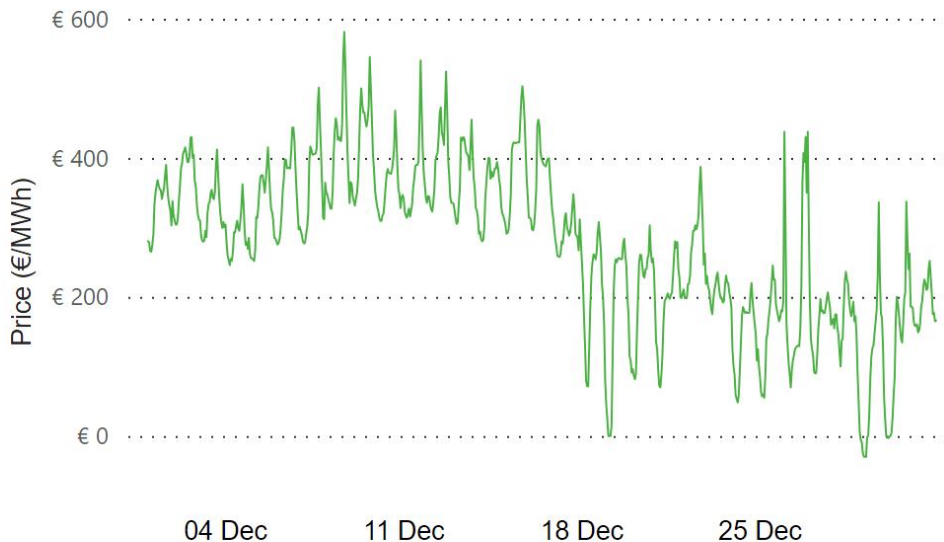


# Day Ahead Market December 2022

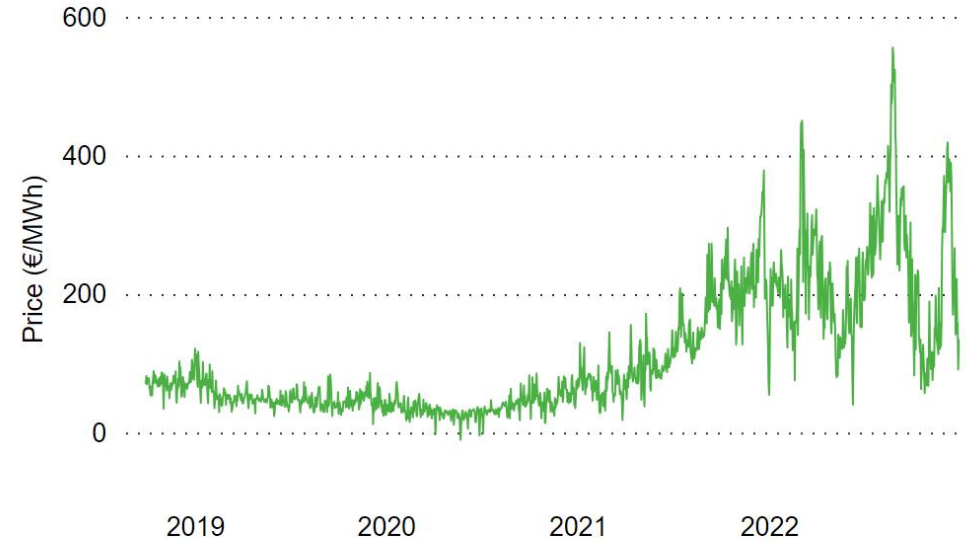
€ 276.52  
Average DAM Price  
-€ 30.00  
Min DAM Price  
€ 581.07  
Max DAM Price

The most frequent price range for December was between €270 and €360

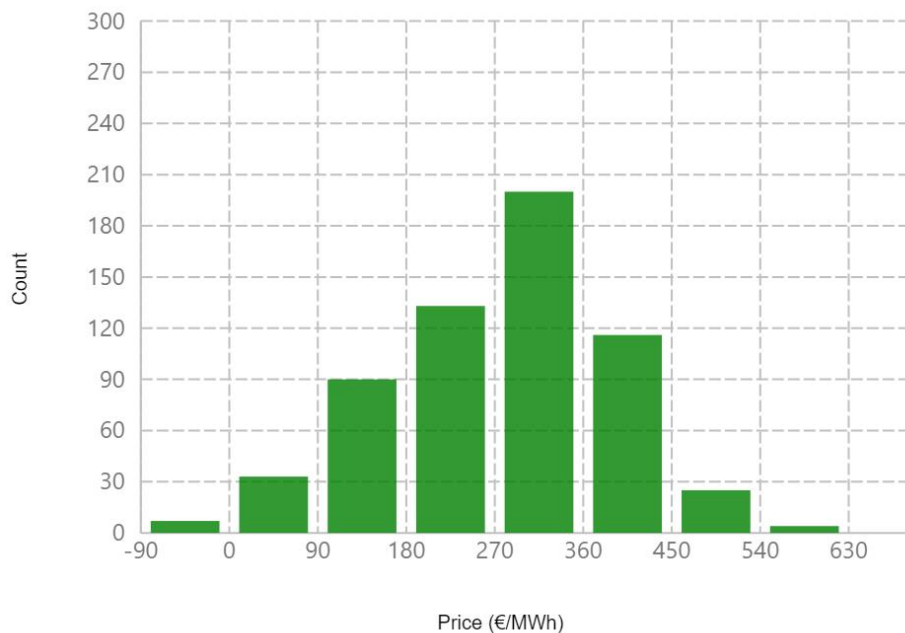
DAM Prices



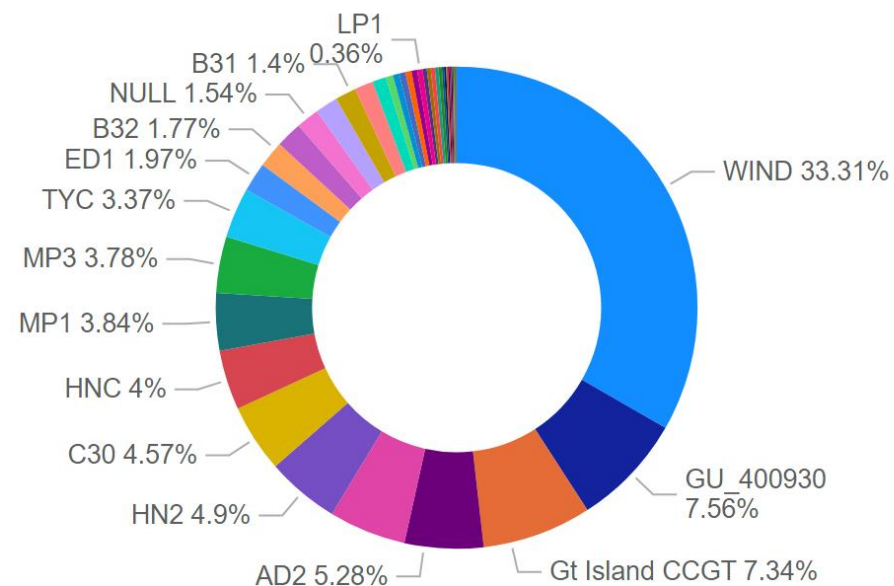
Historic Daily Average DAM Prices



Histogram of DAM Prices



DAM Sell Side Generator Order Results

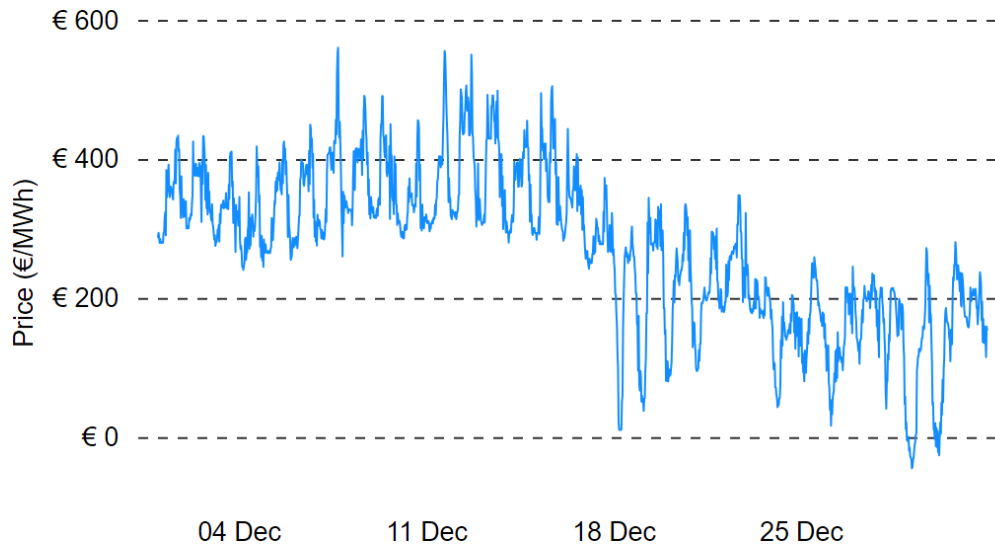


# Intraday Market December 2022

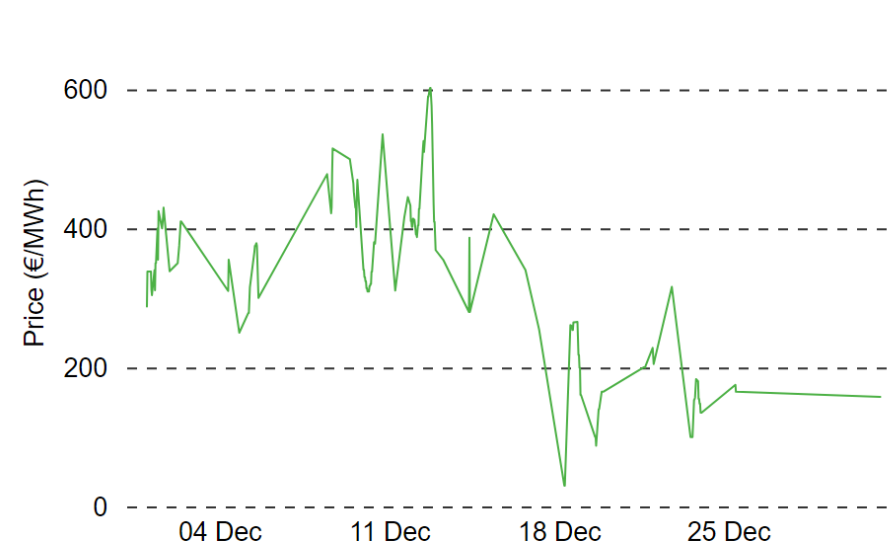
€ 270.87  
Average IDA1 Price  
-€ 45.00  
Min IDA1 Price  
€ 560.00  
Max IDA1 Price

The most frequent price range for December was between €240 and €320

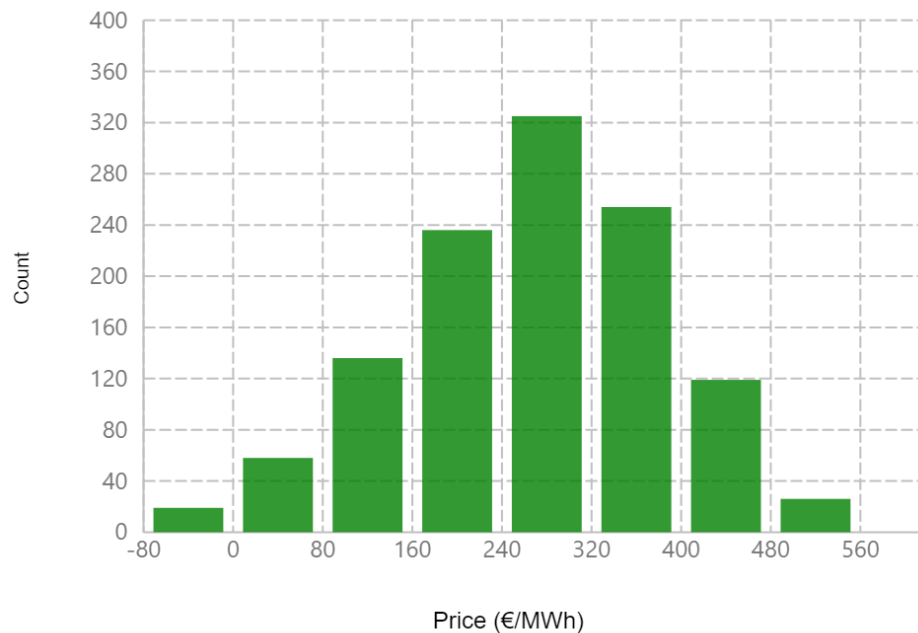
### IDA 1 Prices



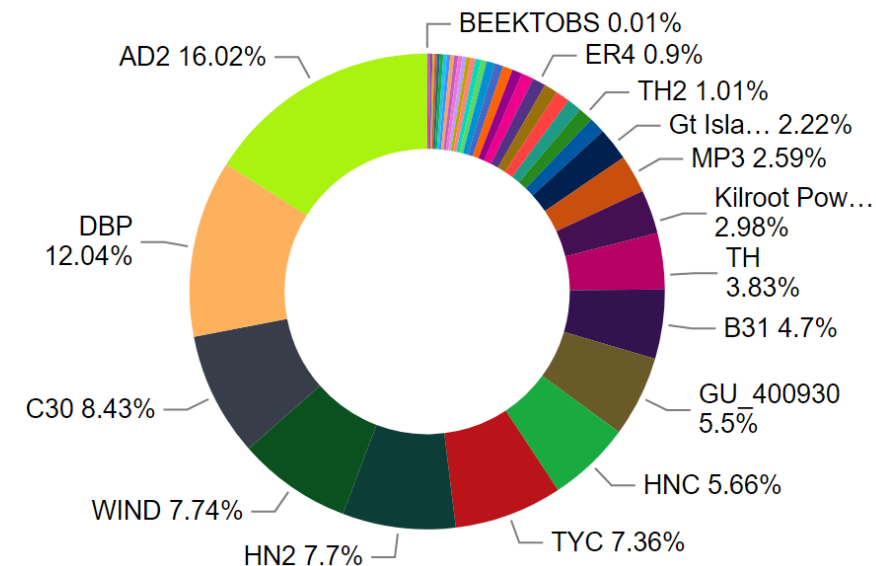
### IDC Prices



### Histogram of IDA1 Prices



### IDA1 Sell Order Results By Market Participant



# SEM vs GB

## December 2022

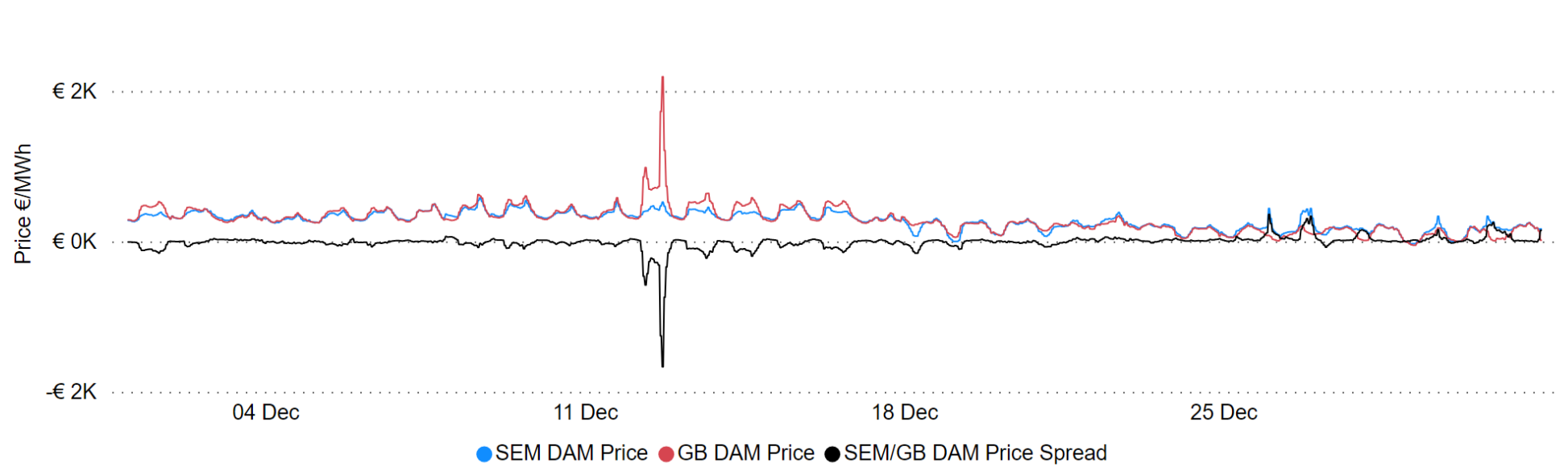
**SEM Day Ahead Price**  
 € 276.52  
 Average Price  
 -€ 30.00  
 Min Price  
 € 581.07  
 Max Price

**GB Day Ahead Price**  
 € 287.80  
 Average Price  
 -€ 49.88  
 Min Price  
 € 2,191.32  
 Max Price

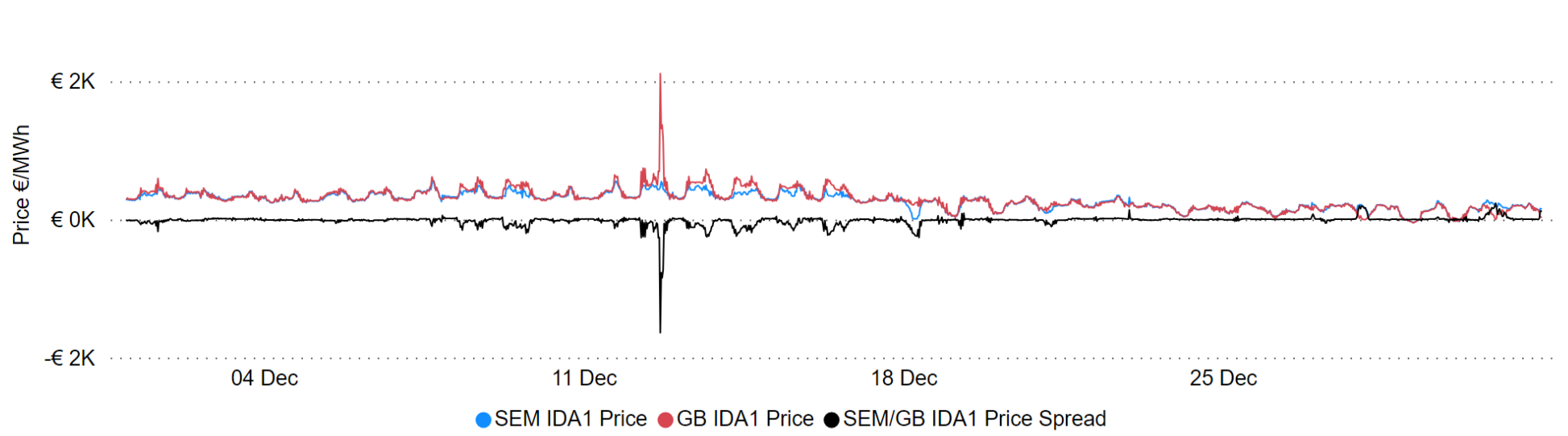
**SEM IDA1 Price**  
 € 270.87  
 Average Price  
 -€ 45.00  
 Min Price  
 € 560.00  
 Max Price

**GB IDA1 Prices**  
 € 286.41  
 Average Price  
 -€ 47.14  
 Min Price  
 € 2,113.20  
 Max Price

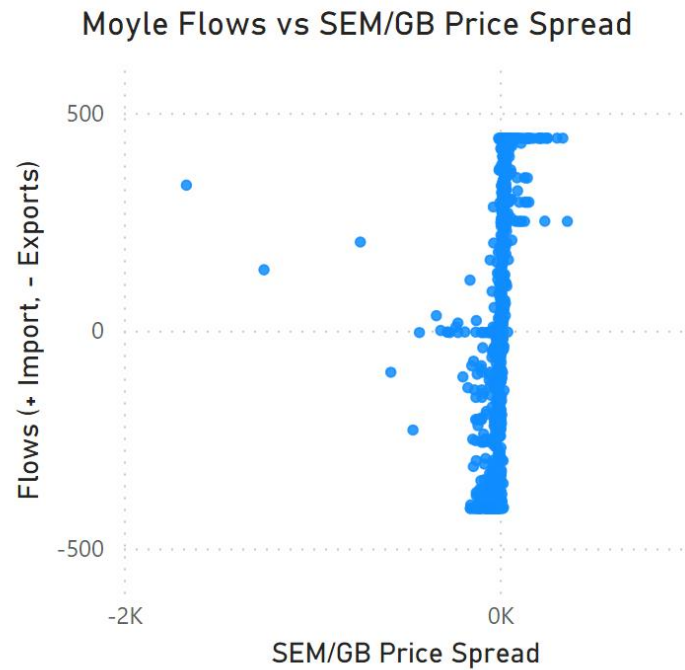
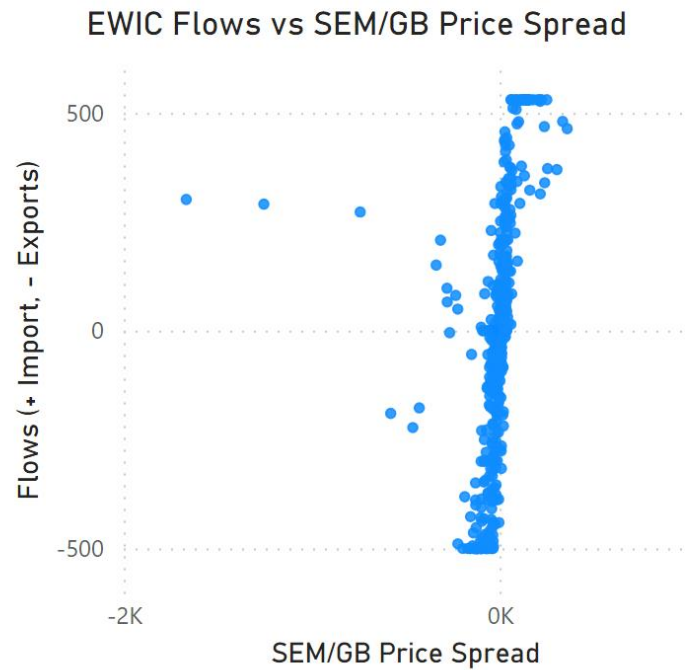
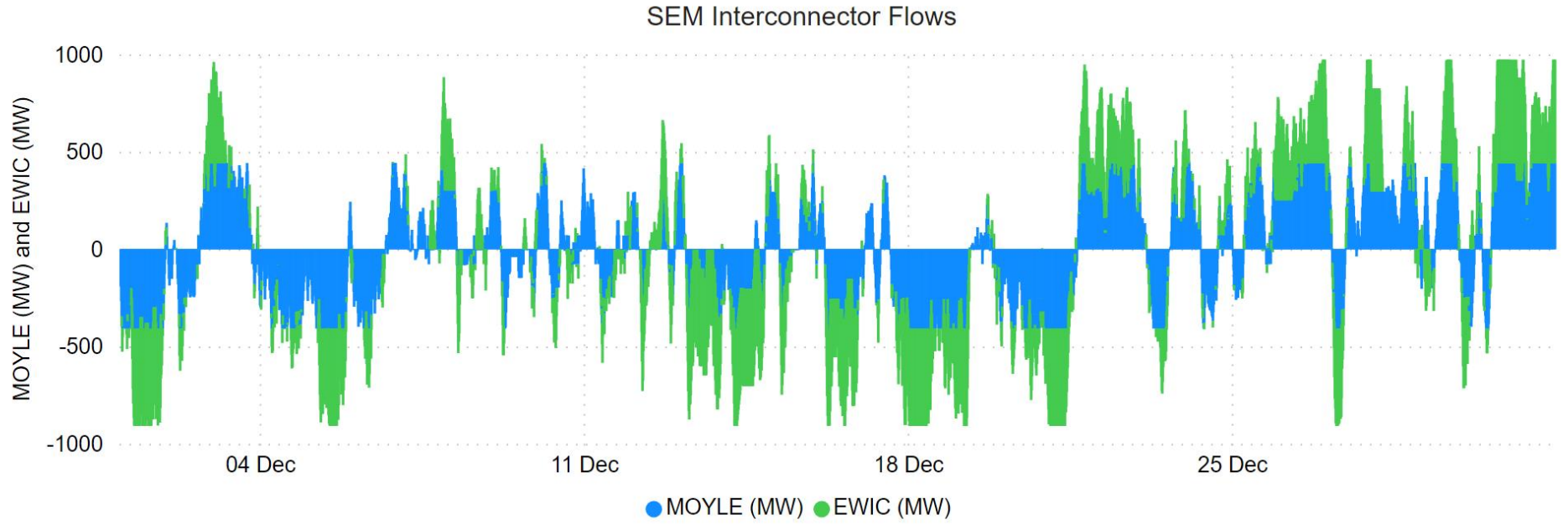
SEM & GB DAM Prices



SEM & GB IDA1 Prices



# SEM Interconnectors December 2022



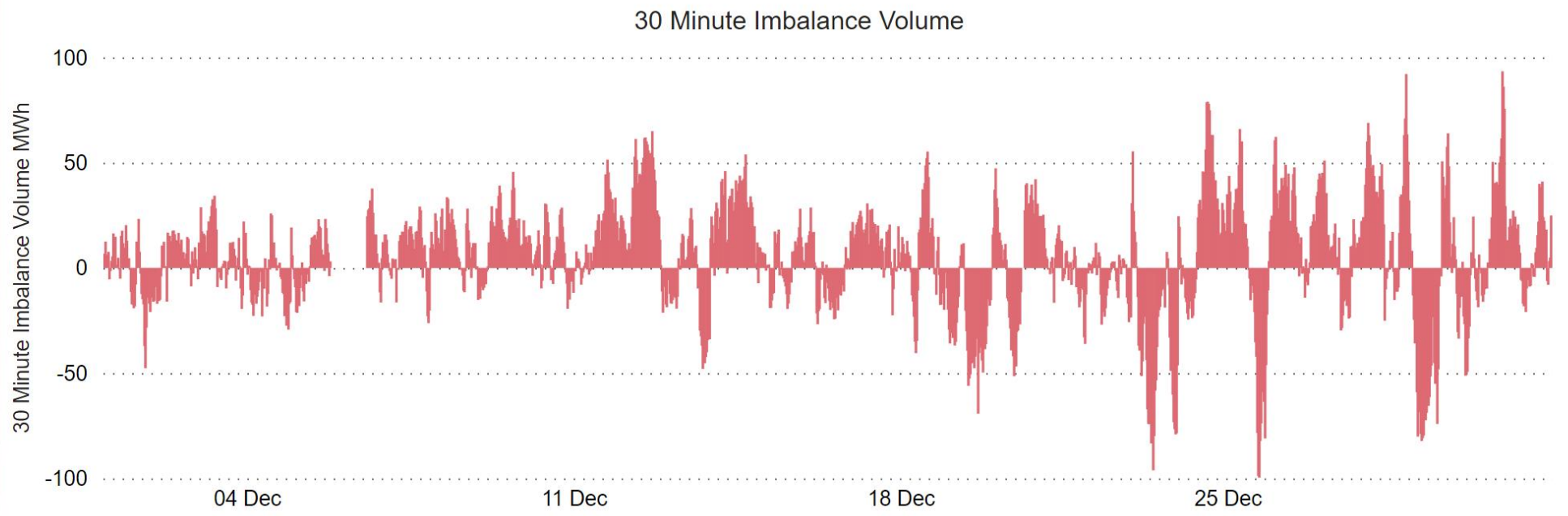
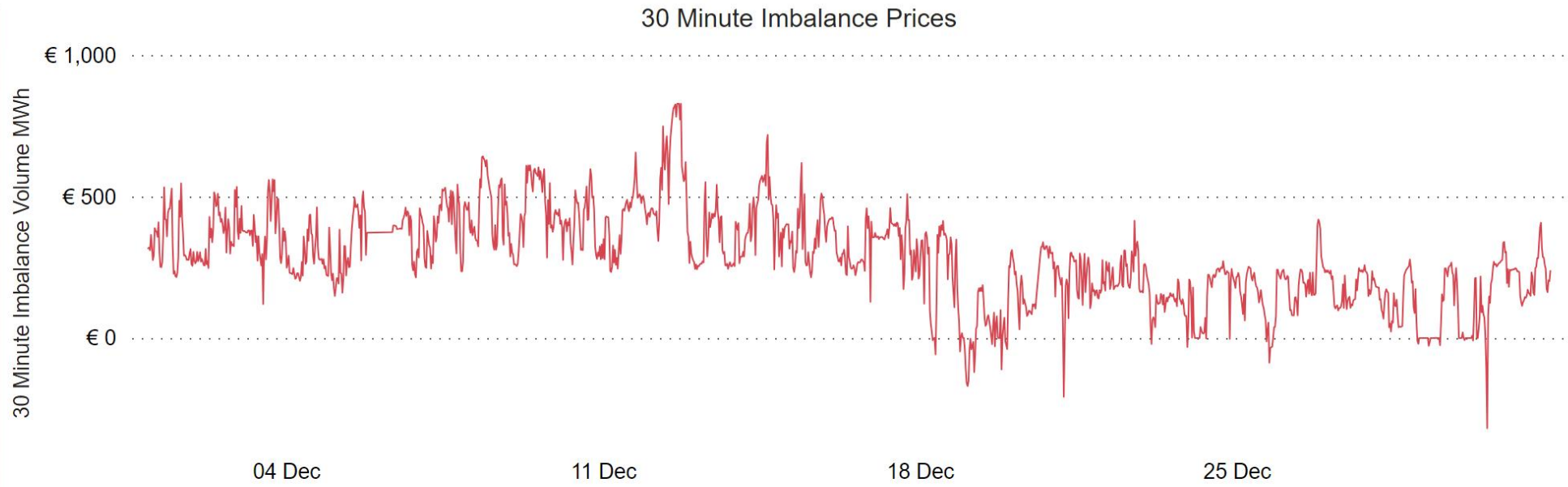
### Interconnector Flows

December 2022	MW
Moyle Imports	277
EWIC Imports	209
Moyle Exports	-220
EWIC Exports	-256
SEM Imports	403
SEM Exports	-390
SEM Net Import/Export	-26



# Balancing Market December 2022

30 Minutes Imbalance Price  
€ 282.19  
Average Price  
-€ 318.69  
Lowest Price  
€ 827.54  
Highest Price



## Demand and Generation Mix

# Demand December 2022

## SEM Demand (MW)

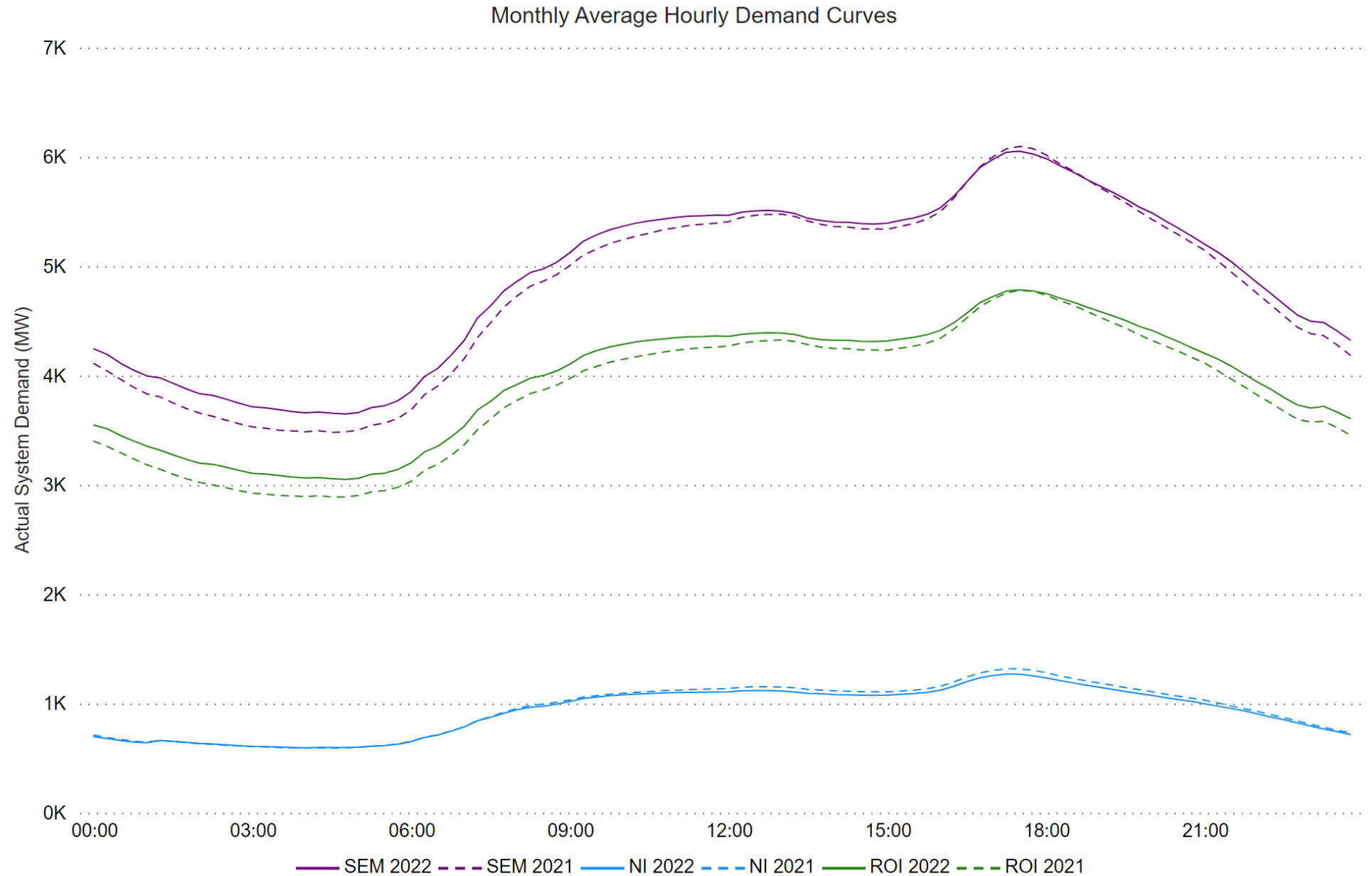
4,885.47	4,788.70
SEM Average 2023	SEM Average 2022
3,647.94	3,480.48
SEM Min 2023	SEM Min 2022
6,051.90	6,095.39
SEM Max 2023	SEM Max 2022

## NI Demand (MW)

929.41	949.06
NI Average 2023	NI Average 2022
595.35	591.39
NI Min 2023	NI Min 2022
1,269.97	1,318.55
NI Max 2023	NI Max 2022

## ROI Demand (MW)

3,956.05	3,839.69
ROI Average 2023	ROI Average 2022
3,050.00	2,889.16
ROI Min 2023	ROI Min 2022
4,784.19	4,778.77
ROI Max 2023	ROI Max 2022

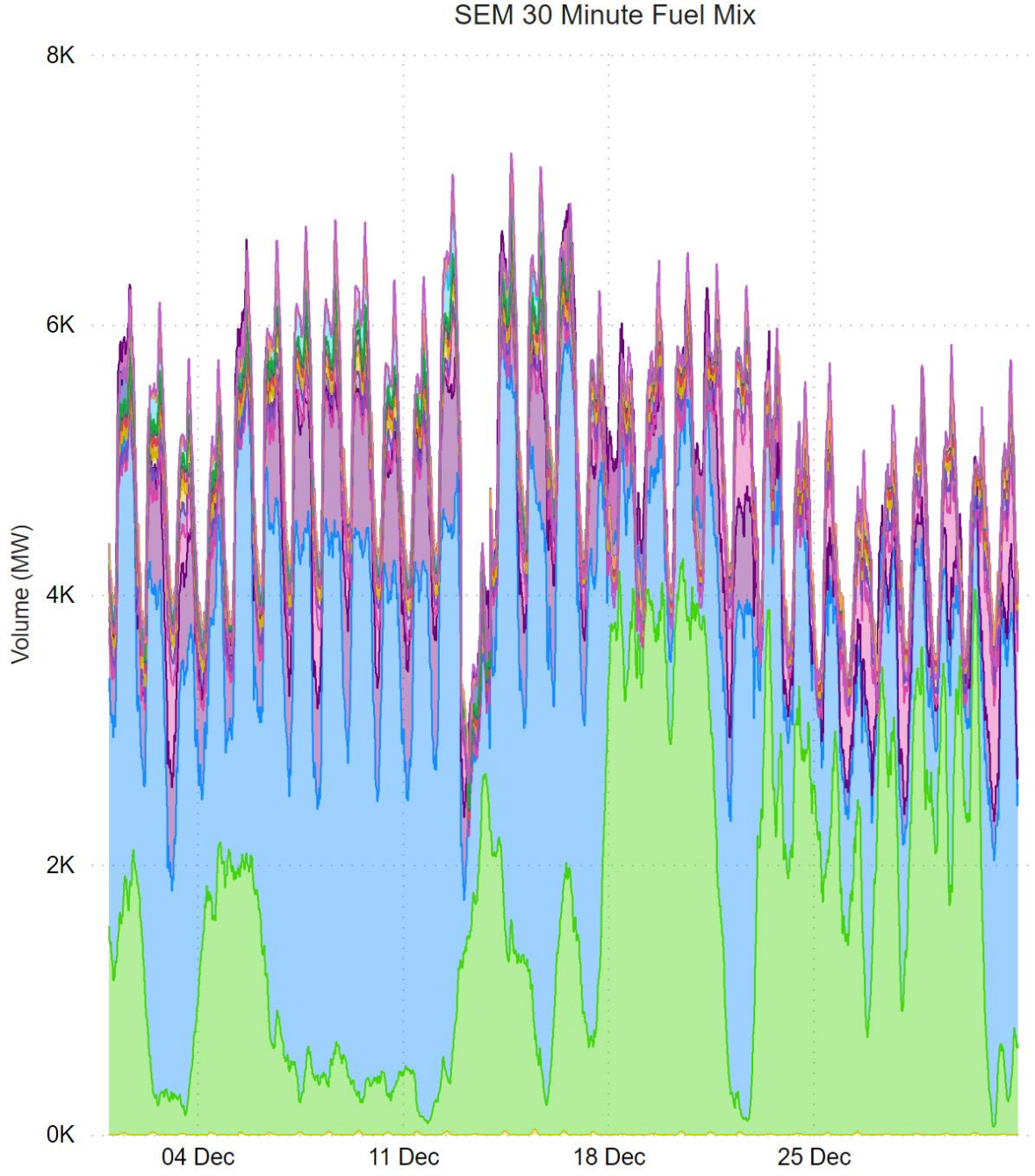


# Fuel Mix

## December 2022

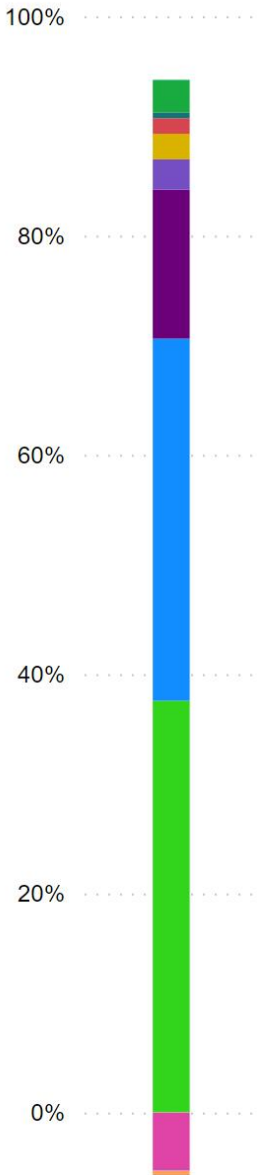
Fuel Type	Average (MW)	%
CCGT	2,232	44.9%
WIND	1,647	33.1%
INTERCONNECTOR	-27	-0.6%
COAL	637	12.8%
HYDRO	109	2.2%
CHP	133	2.7%
PEAT	73	1.5%
WASTE	70	1.4%
SOLAR	3	0.0%
DSR	23	0.5%
OIL	96	1.9%
OCGT	4	0.1%
BATTERY	-3	-0.1%
PUMPED STORAGE	-24	-0.5%

Fuel Type	Max (MW)	Min (MW)
CCGT	4,259	397
WIND	4,245	57
INTERCONNECTOR	976	-935
COAL	1,128	193
HYDRO	181	4
CHP	170	40
PEAT	96	0
WASTE	82	0
SOLAR	43	0
DSR	205	0
OIL	450	0
OCGT	195	0
BATTERY	79	-22
PUMPED STORAGE	292	-301

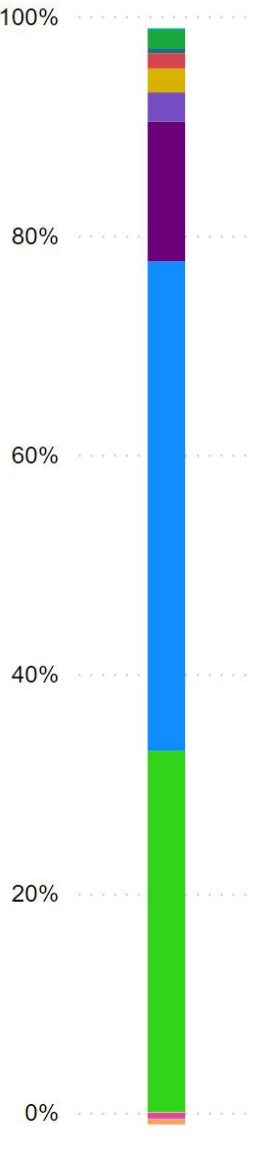


- SOLAR
- WIND
- CCGT
- COAL
- IC
- CHP
- HYDRO
- PEAT
- WASTE
- DSR
- OIL
- OCGT
- BATTERY
- PS

SEM Fuel Mix  
December 2021

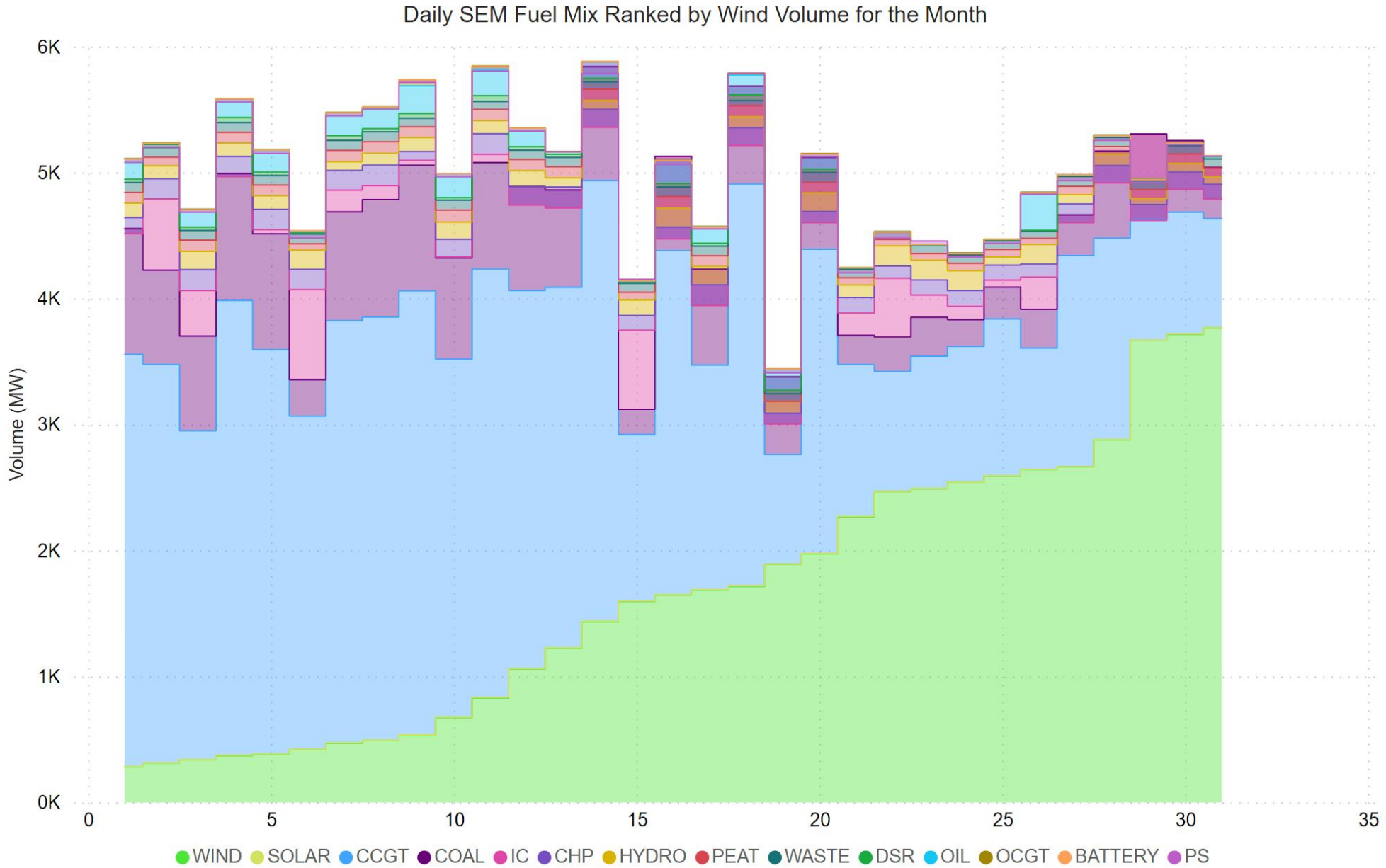


SEM Fuel Mix  
December 2022



# Fuel Mix Ranked by Wind Volume December 2022

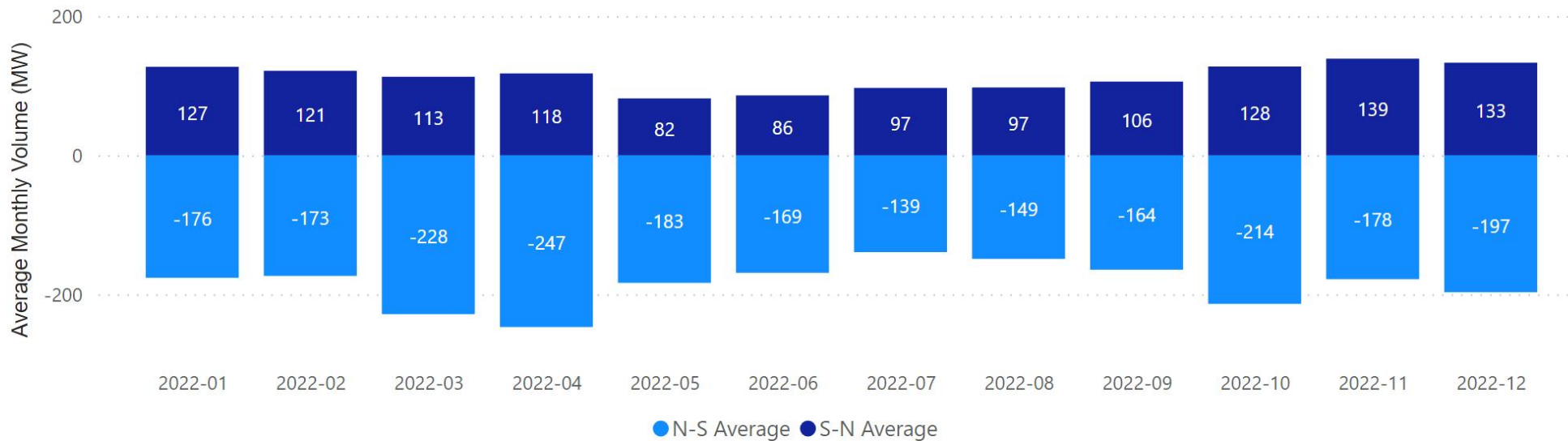
This chart shows the average daily fuel mix for the month but instead of being a timeline chart it is ranked by level of wind available from smallest to largest.



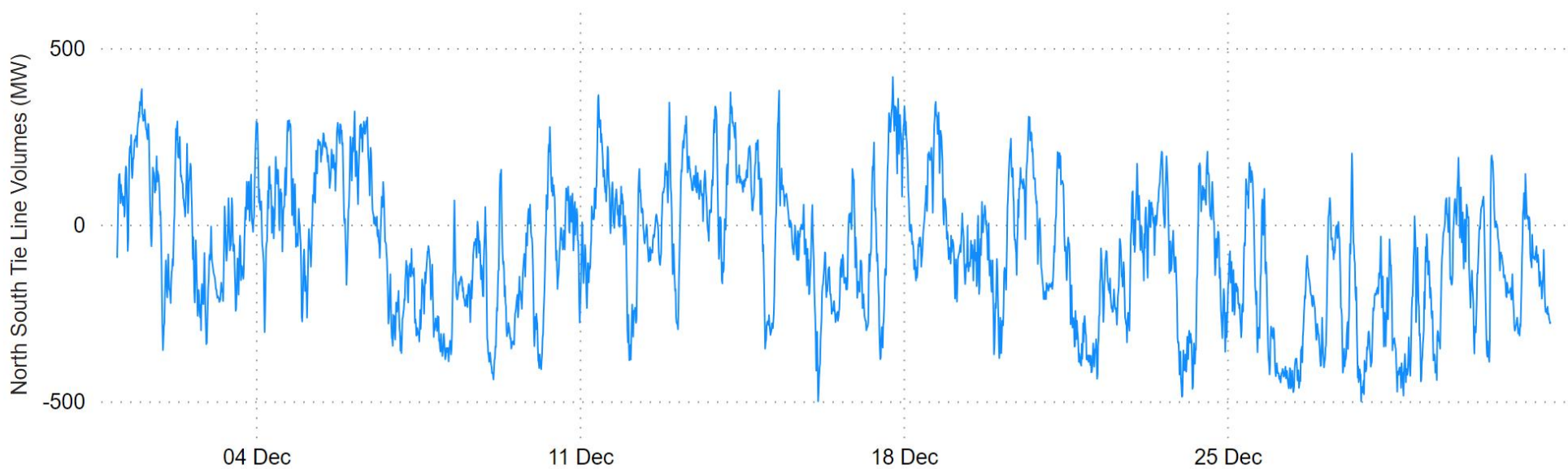
# North-South Tie Line December 2022

Flow Direction (Average)	MW
NI to ROI	-196.87
ROI to NI	132.99
NET NI to ROI	-76.95

Average Flows N-S Tie Line Long Term Trend



North South Tie Line Volumes 15 minute periods

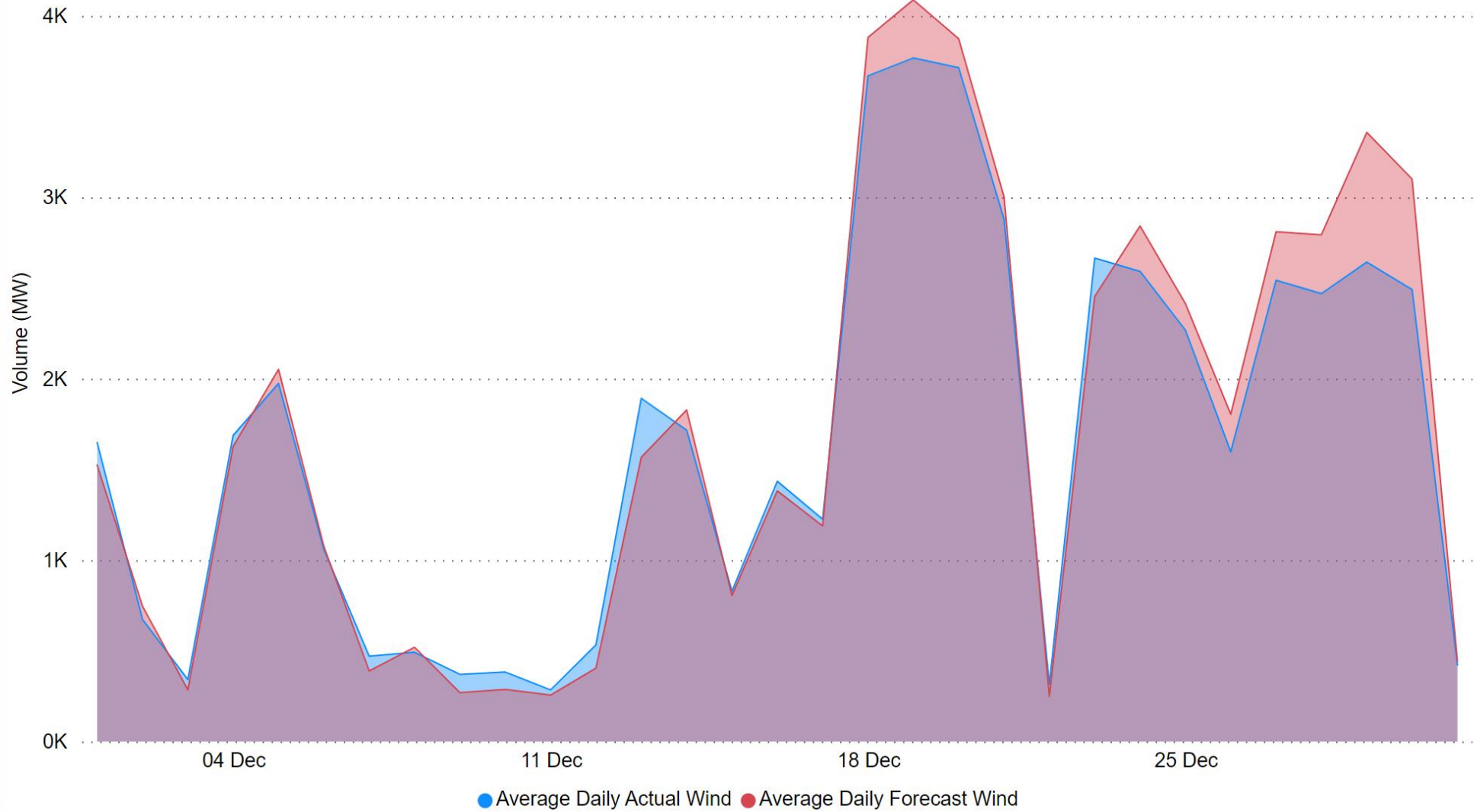


# Wind Generation December 2022

Average Daily Actual Wind (MW)  
1,647

Average Daily Forecast Wind (MW)  
1,720

Actual Daily Average Wind Relative to Forecast Daily Average Wind

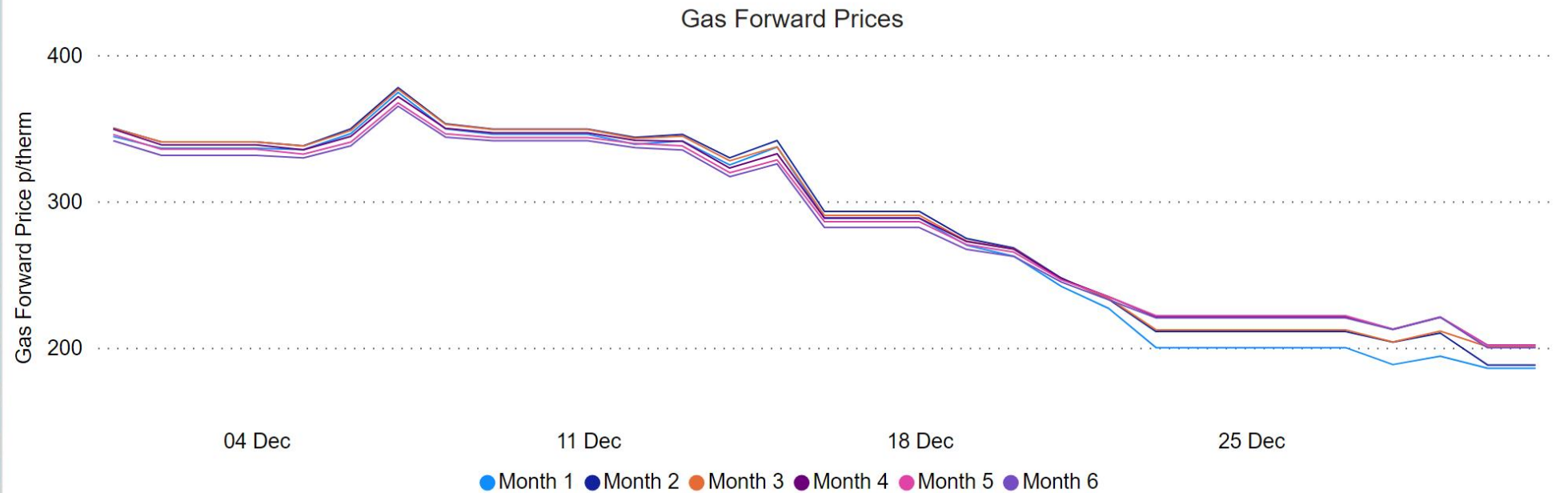
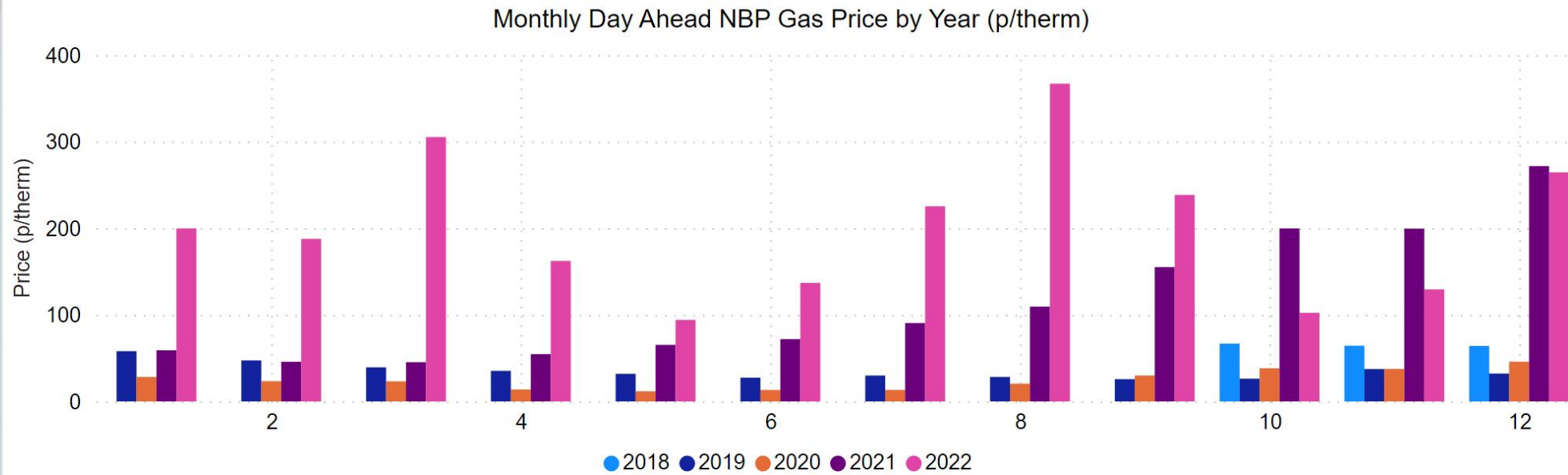


## Fuel Costs and Spreads



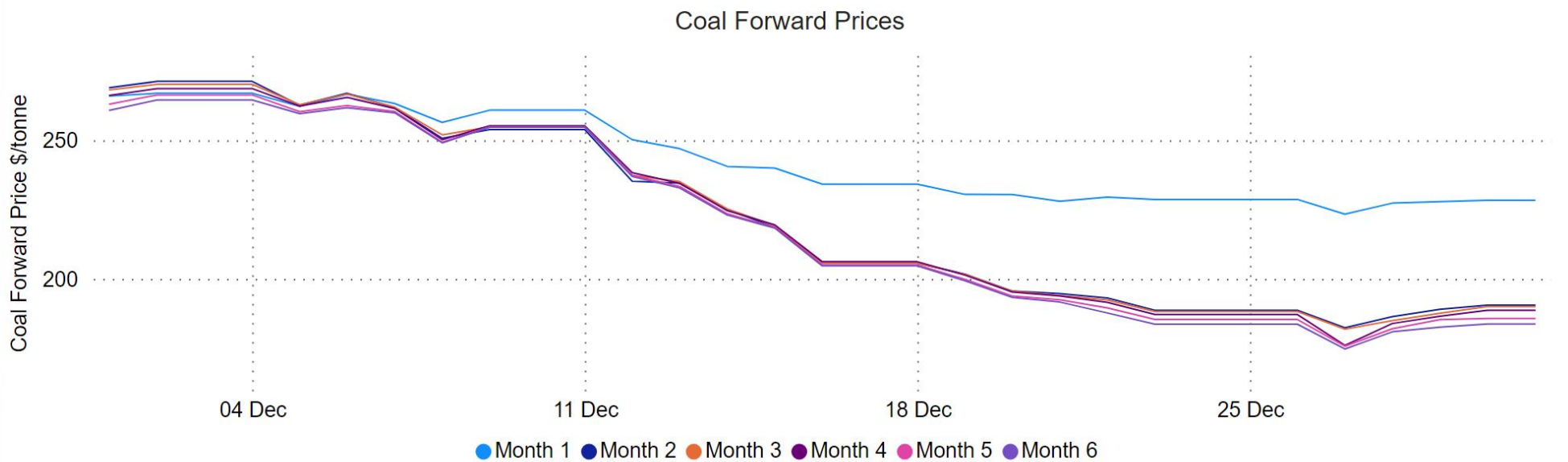
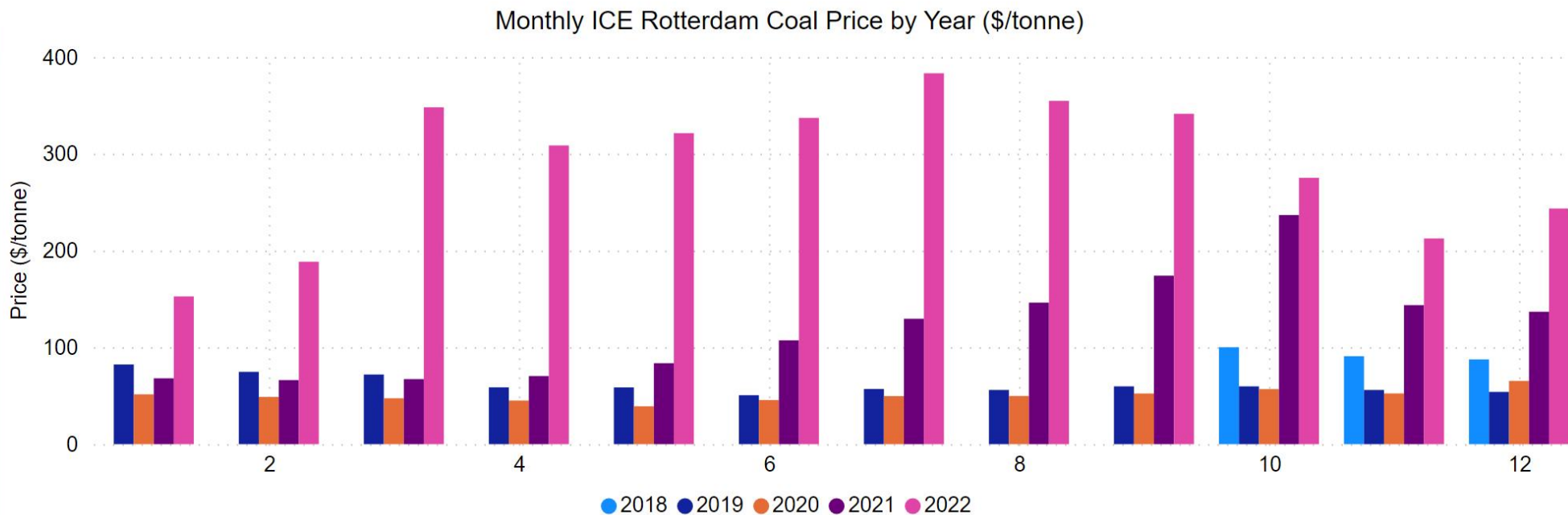
# Gas Price December 2022

264.54  
Monthly Average (p/therm)  
147.30  
Monthly Low (p/therm)  
373.05  
Monthly High (p/therm)



# Coal Price December 2022

\$243.46  
Monthly Average \$/tonne  
\$223.35  
Monthly Low \$/tonne  
\$267.00  
Monthly High \$/tonne

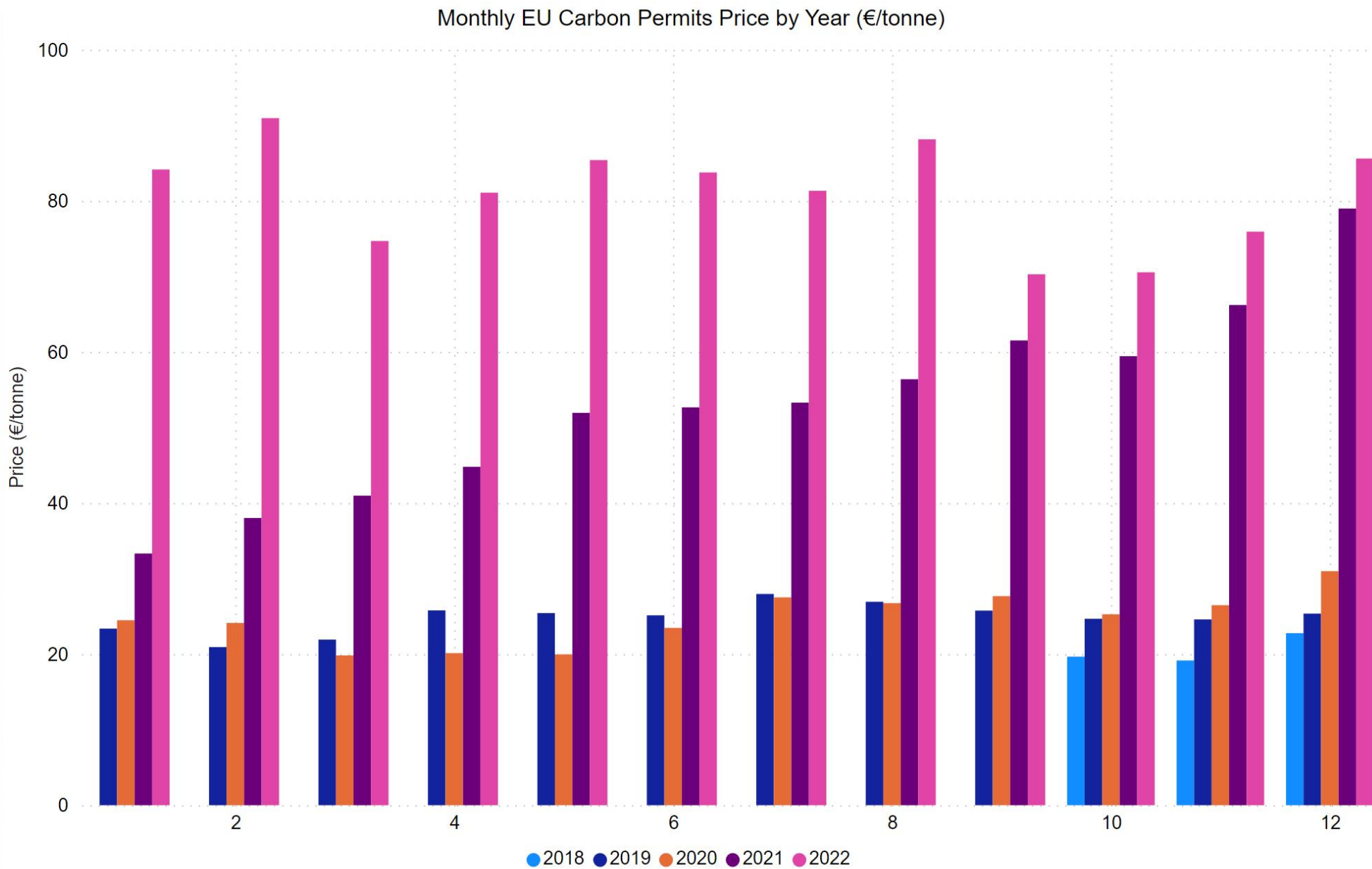


# Carbon Price December 2022

€ 85.61  
Monthly Average €/tonne

€ 78.70  
Monthly Low €/tonne

€ 89.91  
Monthly High €/tonne



# Spark Spreads December 2022

**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.

