



**Evolution of
the electricity
market
Annual report**

2023

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Executive summary / Market results

- ▶ During 2023, the total amount of energy negotiated on the day-ahead and intraday markets was 263.7 TWh, 2.2% higher than that negotiated in 2022. Of these 263.7 TWh, 212.3 TWh were negotiated on the day-ahead market and 51.4 TWh on the intraday markets.
- ▶ The average arithmetic price of the day-ahead market of the MIBEL was 87.69 €/MWh, 91.3% lower than that of 2022. The average price of the intraday auction market was slightly lower than the day-ahead, 87.99 €/MWh, and the weighted average price of the intraday continuous market was higher, 89.43 €/MWh.
- ▶ In 2023, the market shares in Spain for technology on the Daily Operations Base Program (Programa diario base de funcionamiento, PDBF) have highlighted that coal-fired power plants continue to reduce their contribution to the generation mix, with only 0.2%. On the other hand, the combined cycle has reduced its supply to 7.0% from the 18.4% of the previous year.
- ▶ Renewable energy, along with nuclear, continue to represent almost all of the generation (see figures 1.9 and 1.10). It is also remarkable the increase in photovoltaic solar energy, which has increased its contribution from 11.1% in 2022 to 16.2% in 2023.
- ▶ In the Portuguese area a similar evolution is observed. With respect to 2022, combined cycle units have decreased their supply, from 30.8% to 16.4%, remaining the rest of the generation technologies approximately at the same proportions as the previous year, except for hydropower, that has increased its contribution from 19.5% to 32.0%.

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- ▶ The technologies that most hours have marked marginal are, in order, hydraulic, combined cycles and biomass-cogeneration-waste (see figures 1.13 and 1.14).
- ▶ In regard to the international exchanges of energy and in comparison with the previous year, it can be seen that the MIBEL zone has equilibrium between exports and imports with respect to the previous year when MIBEL had a net exporter position (see figure 5.7). The exchange of energy on the market with Morocco was a net exporter.
- ▶ In the intraday continuous market it can be observed an stable negotiation trend along the year (figure 3.3 and following), confirming, in a way, that it represents a flexible and efficient tool that allows them to adjust their unit's programme until one hour before the delivery of real energy, minimizing their possible imbalances and costs. It is confirmed that for renewables, especially the wind energy, this market is very relevant due to its capability to adjust their output in the last trading period before the delivery of energy. Since the start of the continuous intraday market, the trading record was achieved on March 2023 with 1,047.9 GW, confirming the positive trend.
- ▶ In the European intraday continuous market energy from 25 countries is traded, being managed by 14 assigned market operators. It is remarkable that only 4 market operators take the role of coordinating the European intraday continuous market, being OMIE one of them.

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- ▶ On the other hand, and in relation to international exchanges, despite the fact that in the Day-ahead market the MIBEL area is quite balanced in total imports and exports, in the continuous intraday market, more trading occurs in the exports direction, as long as the capacity of the interconnectors allow it (see Figure 3.14).

Other relevant facts

- ▶ During 2023, OMIE has continued to carry out numerous adaptations in the operation processes in line with the agreements with the rest of the market and system operators at European level, and at regional level in Spain and Portugal in accordance with the new rules for the operation of the Day-ahead and Intraday markets approved on February 23 by the European regulators.
- ▶ On May 23, 2023, the first Market Agents Committee with the new organization in accordance with the provisions of the Rules of operation of the Day-ahead and Intraday energy markets. This new organization allows every market agent and association related to the sector to participate in the Committee.
- ▶ The gas adjustment mechanism, based on the requirements set out in Royal Decree-Law 10/2022, of May 13, 2022, those set out in the Decree-Law No. 33/2022 of May 14, 2022 and the ministerial Order TED/517/2022, of 8 June, has continued to apply until 31 December 2023, the date on which it was finalised in accordance with the legislation.

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- ▶ At the regional level, it is worth mentioning the seminars held by OMIE to inform about the progress of current projects, such as the new European Intraday auctions, the implementation of the 15-minute negotiation period and the new type of products in the Day-ahead market for MIBEL.
- ▶ Related to the new type of products, OMIE launched a consultation from March 10 to April 10 so that agents could give their opinion on which products, of the current SDAC methodology of products approved by ACER, could be the most suitable for MIBEL. On April 26, OMIE submitted a proposal of the type of orders to regulators and on June 13 the MIBEL regulators communicated that the proposal could be carried out.
- ▶ At the European level, on January 10 2023, ACER published a new version of the Maximum and Minimum Matching Price Methodologies in SDAC and SIDC. In accordance with the approved methodologies, the European market operators in charge of the operation of Day-ahead and Intraday markets updated the procedures for the detection of maximum and minimum price limits in both markets and to reflect the actions to be taken in the event that such limits are reached.
- ▶ At the same European level, 2023 has been a decisive year to establish the roadmap and design for the implementation of the 15 minutes negotiation period on the European Day-ahead and Intraday markets, the change is expected to occur early next year 2025. It should be noted that the implementation of the new type of products in MIBEL will be carried out in conjunction with the implementation of the 15 minute negotiation period.

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- ▶ On the other hand, in 2023 the design and development of the new European intraday auctions IDA was finalized, the testing began at the end of 2023 and will continue through 2024 until the go-live date which is expected for June 2024.
- ▶ As for the Continuous Intraday Market, OMIE has continued to participate in the prioritization of European projects to be implemented in the coming years, as well as in the design and implementation of all the improvements and evolutions of this market, which in January 2023 received a significant improvement in the performance of the central platform. The addition of ETPA as a new NEMO designated in Netherlands to trade in this Continuous Intraday Market on August 1 represented a significant advance in the extension of this Coupled market.
- ▶ In addition, OMIE has continued to carry out, at certain times of 2023, the operation of the Day-ahead and Intraday markets from the emergency system in collaboration with agents, system operators and market operators involved in the different markets.

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- ▶ During the year 2023, all the settlement, billing, collections and payments and guarantees management processes have been in operation normally and without incidents.
- ▶ The market operator has incorporated, during the year 2023 into its settlement and guarantees processes, the collection rights and payment obligations resulting from the application of the production cost adjustment mechanism for the reduction of the price of electricity in the wholesale market regulated in Royal Decree Law 10/2022 and extended by Royal Decree Law 3/2023 until 31th December 2023.
- ▶ During 2023 OMIE's commitment to electronic guarantees has been consolidated, allowing participants to formalize guarantees with greater agility in a year in which the guarantees' operations have remained at very high values.
- ▶ The use of the advance payment mechanism made available to agents by OMIE at the end of 2021, has been proven very effective to reduce the volume of guarantees required to participate in the markets.

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- ▶ The economic volume of purchases in the markets managed by OMIE in 2023 was €21,959 million, 57.1% less than the previous year.

Of this volume, €74 million correspond to the impact on the holders of acquisition units of the cost of the adjustment mechanism for production costs regulated in the Royal Decree-Law 10/2022 and the Decree Law No. 33/2022, which on average is 0.32 €/MWh.

- ▶ The economic volume of purchases in the Spanish zone during 2023 was €16,913 million, while in the Portuguese zone it was €5,047 million, decreasing respectively by 58.9% and 49.5% compared to previous year.
- ▶ The final average price of the national demand of the Spanish electricity system for 2023 was 100.20 €/MWh, 51.0% less than the previous year.
- ▶ The congestion income from the Spain-France interconnection in 2023 was €504 million, 75.8% less than the previous year. There were price difference between both zones 67.2% of the hours.
- ▶ The congestion income from the Spain-Portugal interconnection in 2023 was €30 million, 194.5% higher than the previous year. There were price difference between the zones 5.3% of the hours.

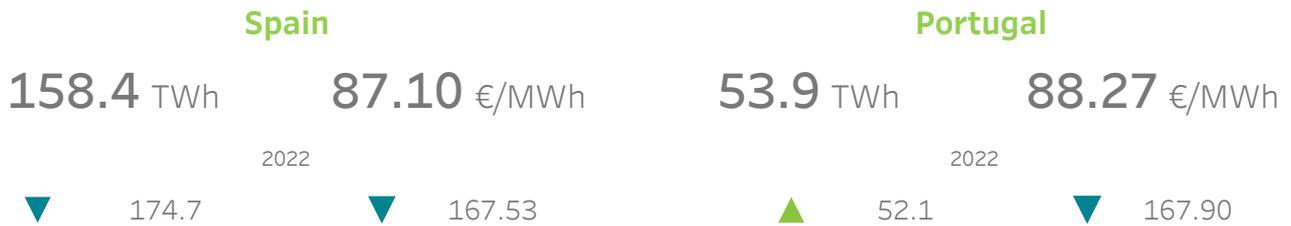
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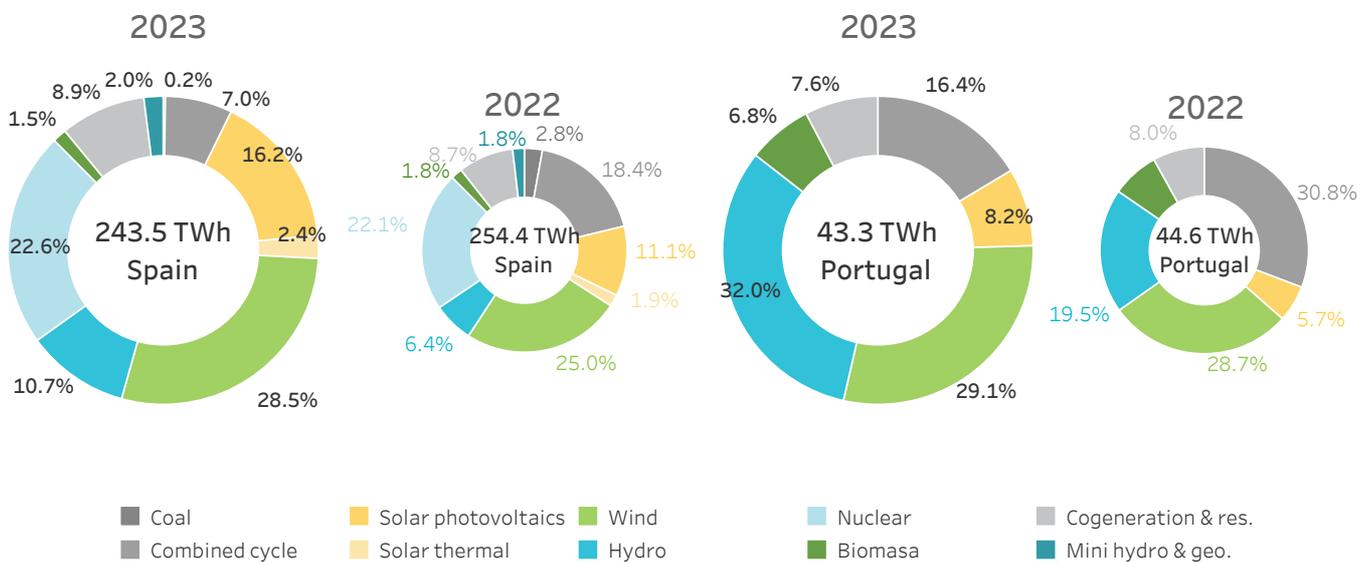
- ▶ The economic volume of the energy exchanges from MIBEL through the interconnection with France has risen to €960 million for imports and €1,010 million for exports, having a reduction of 13.8% in the first case and a reduction of 60.7% in the second compared to the previous year.
- ▶ Through the interconnection with Morocco, the economic volume of imports has risen to €36 million and that of exports to €196 million, having a reduction of 32.1% in the first case and an increase of 46.2% in the second compared to last year.
- ▶ The weekly average payments made to creditor agents on the market, in 2023, was €256 million, decreasing by 60.7% compared to the previous year.
- ▶ The settlement system of the market has efficiently managed the continuous participation increase in the market of direct consumers and retailers in the recent years, keeping this tendency during last year. The number of debtor agents in 2023 stayed, on average, at 360, while that of creditor agents at 110.
- ▶ During 2023, 173,125 purchase invoices and 92,100 sales invoices were issued for energy markets managed by OMIE, 7.7% less and 9.7% higher respectively compared to the values of the previous year.

Day-ahead market

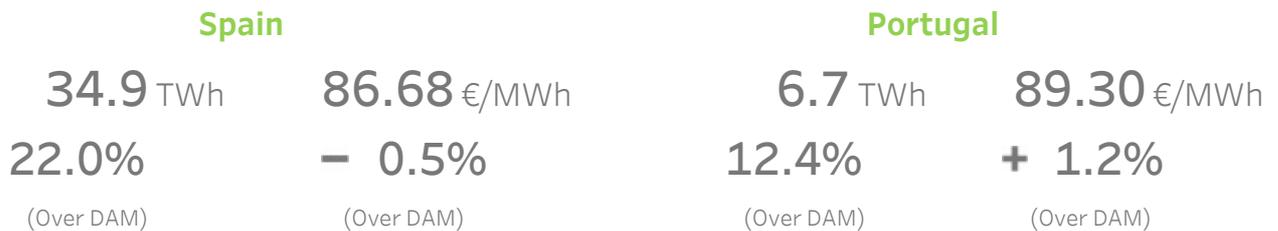
Energy and price day-ahead matched program (Programa Diario Base de Casación, PDBC)



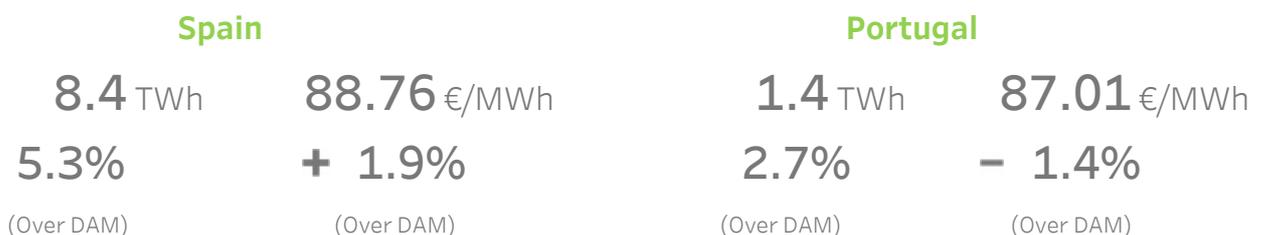
Tecnology day-ahead operations program (Programa Diario Base de Funcionamiento, PDBF)



Intraday auction market



Intraday continuous market



For the intraday continuous market, the energy and trades for each country include all the trades in which at least one of the agents involved in the trade belongs to that country.

The prices shown for the day-ahead market and the intraday auctions market are arithmetic average prices.

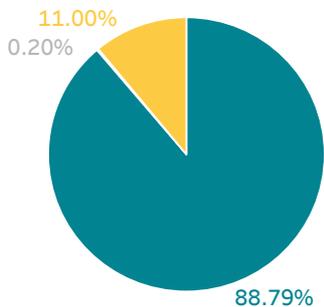
The prices shown for the intraday continuous market are weighted average prices.

Economic volume 2023 (Millions of €)

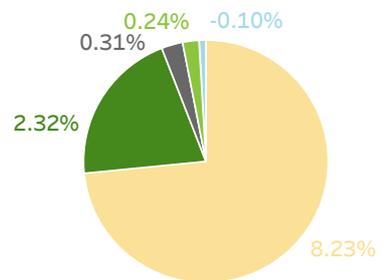
	Spain		Portugal	
Day-ahead market	13,306 M€	▼ 54.74%	4,521 M€	▼ 46.04%
	29,398 M€ Last year	Variation 2023 - 2022	8,378 M€ Last year	Variation 2023 - 2022
Intraday auctions market	2,795 M€	▼ 39.80%	447 M€	▼ 44.71%
	4,644 M€ Last year	Variation 2023 - 2022	808 M€ Last year	Variation 2023 - 2022
Continuous intraday market	749 M€	▼ 32.51%	68 M€	▼ 31.49%
	1,110 M€ Last year	Variation 2023 - 2022	99 M€ Last year	Variation 2023 - 2022
Adjustment mechanism	63 M€		11 M€	
	Spain-Portugal		Spain-France	
Congestion income	30 M€	▲ 194.52%	504 M€	▼ 75.78%
	10 M€ Last year	Variation 2023 - 2022	2,083 M€ Last year	Variation 2023 - 2022
% Hours with price difference	5.30 %		67.23 %	

Final average price of the Spanish electricity system

Components - National demand



- Day-ahead market
- Adjustment mechanism
- Others:
 - Constraints
 - Secondary band and ADRS
 - Intraday market
 - Other SO processes
 - Capacity payments



National demand

100.20 €/MWh

204.33 €/MWh
Last year
▼ 50.96%
Variation 2023 - 2022

Free market

100.09 €/MWh

202.60 €/MWh
Last year
▼ 50.60%
Variation 2023 - 2022

Reference retailers

101.41 €/MWh

222.63 €/MWh
Last year
▼ 54.45%
Variation 2023 - 2022

The economic volume values include purchases for each country, including in the case of Spain the exports received from the French and Moroccan interconnectors.

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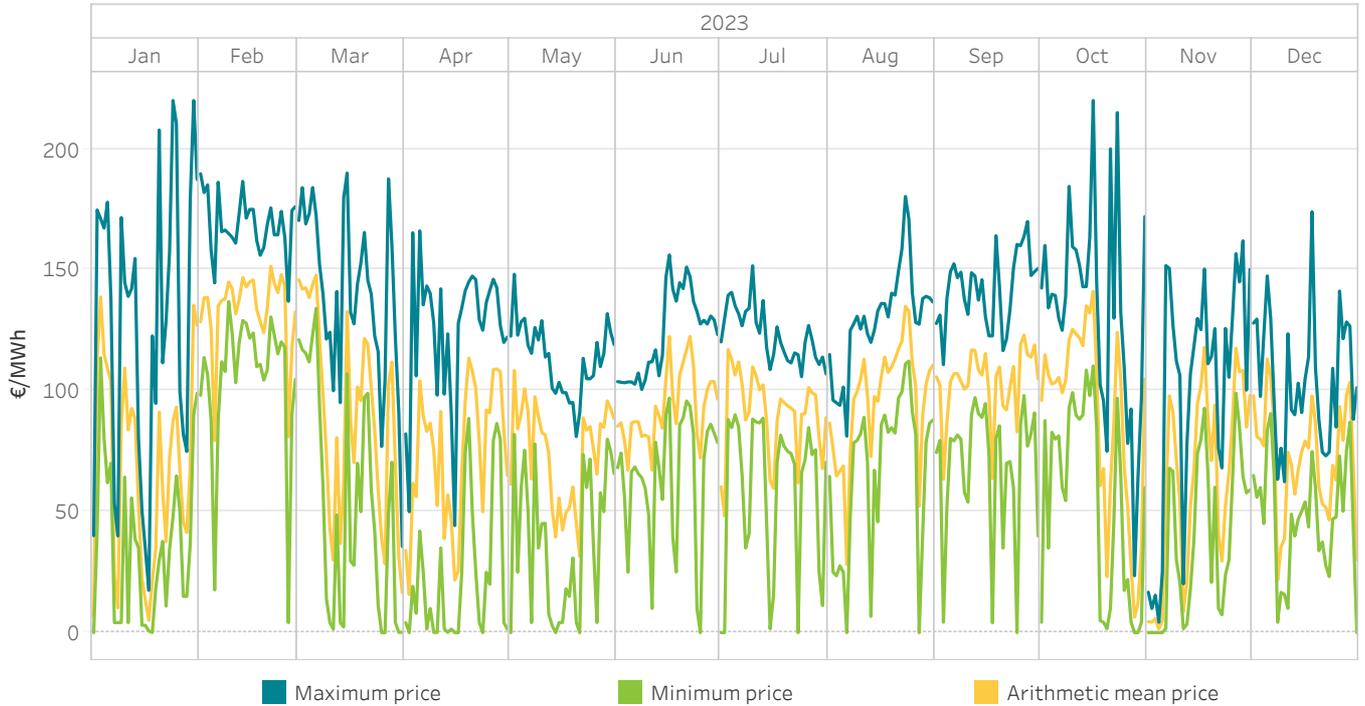
1.

Day-ahead market

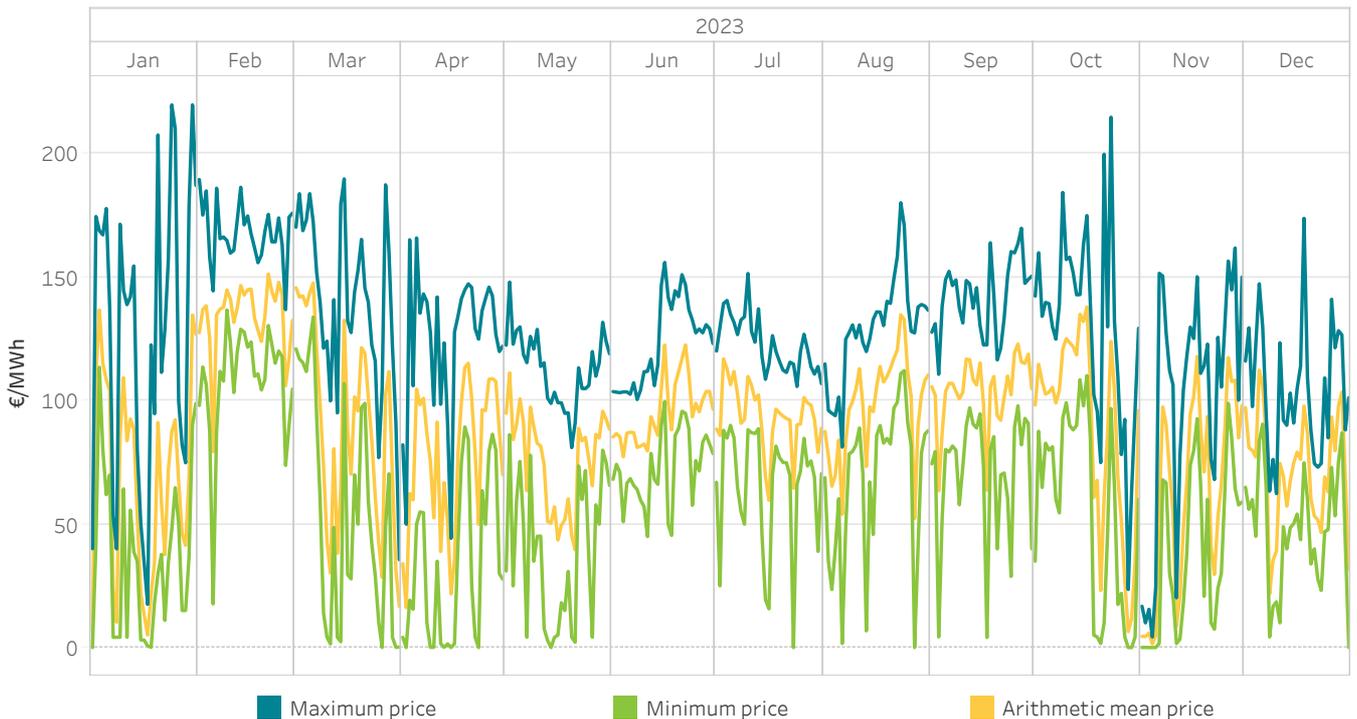
- Prices and energies on the day-ahead market
- Technologies on the day-ahead market
- Matched energy for acquisition units



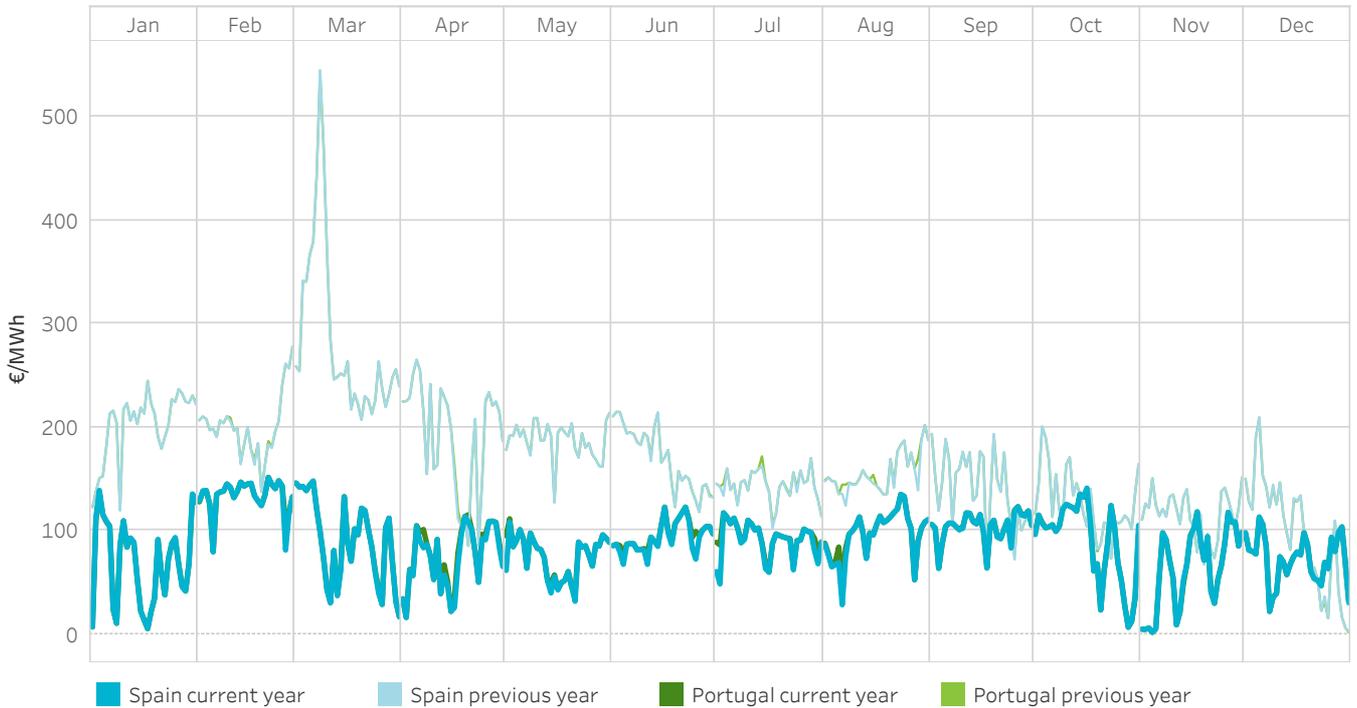
1.1 Maximum, minimum and arithmetic mean price on the day-ahead market In Spain



1.2 Maximum, minimum and arithmetic mean price on the day-ahead market In Portugal



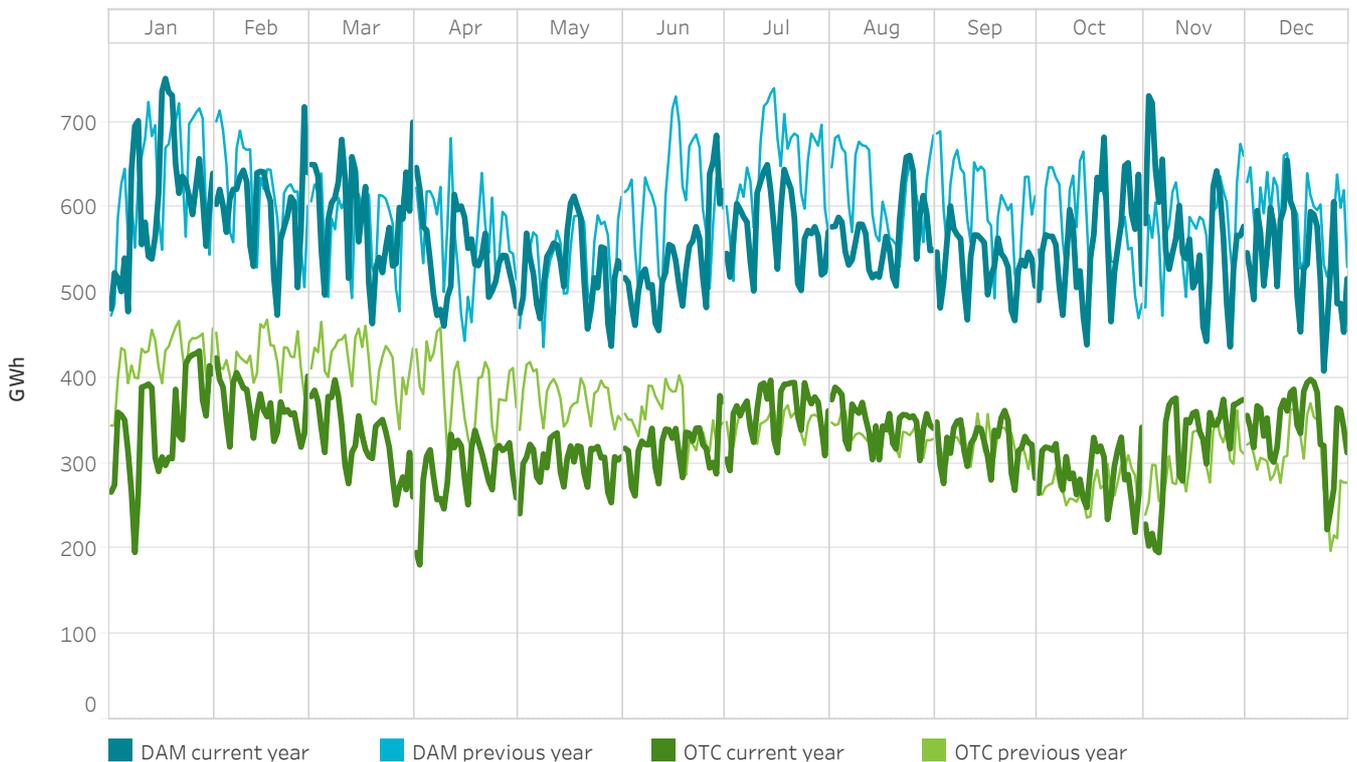
1.3 Day-ahead arithmetic mean prices for 2023 compared to 2022 In Spain and Portugal



1.4 Energy negotiated on the day-ahead market and over the counter contracts (OTC) for 2023 compared to 2022 In Spain and Portugal

In Spain and Portugal

The negotiated energy is calculated as the addition of the acquisitions plus the net exports.



1.5 Prices [€/MWh] and energies [GWh] on the day-ahead market In Spain

Año de study	Mes de study	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2023	January	69.55	220.00	0.00	13,782.3	10,575.6
	February	133.47	189.74	4.16	12,341.0	10,085.3
	March	89.61	190.00	0.00	14,814.5	9,966.6
	April	73.73	166.06	0.00	13,463.3	8,540.7
	May	74.21	148.16	0.00	13,093.2	9,183.2
	June	93.02	156.13	0.00	12,721.6	9,448.2
	July	90.47	151.65	0.00	13,898.6	11,097.3
	August	96.05	180.34	0.00	13,905.0	10,666.6
	September	103.34	170.00	0.00	12,340.7	9,571.6
	October	90.14	220.00	0.00	13,222.4	8,908.6
	November	63.45	161.99	0.00	12,638.8	9,555.0
	December	72.17	174.00	0.00	12,228.5	10,550.4
Interannual results		87.10	220.00	0.00	158,449.8	118,149.1

Año de estudio	Period	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2022	January-December	167.53	700.00	0.00	174,672.8	116,038.7
2023	January-December	87.10	220.00	0.00	158,449.8	118,149.1

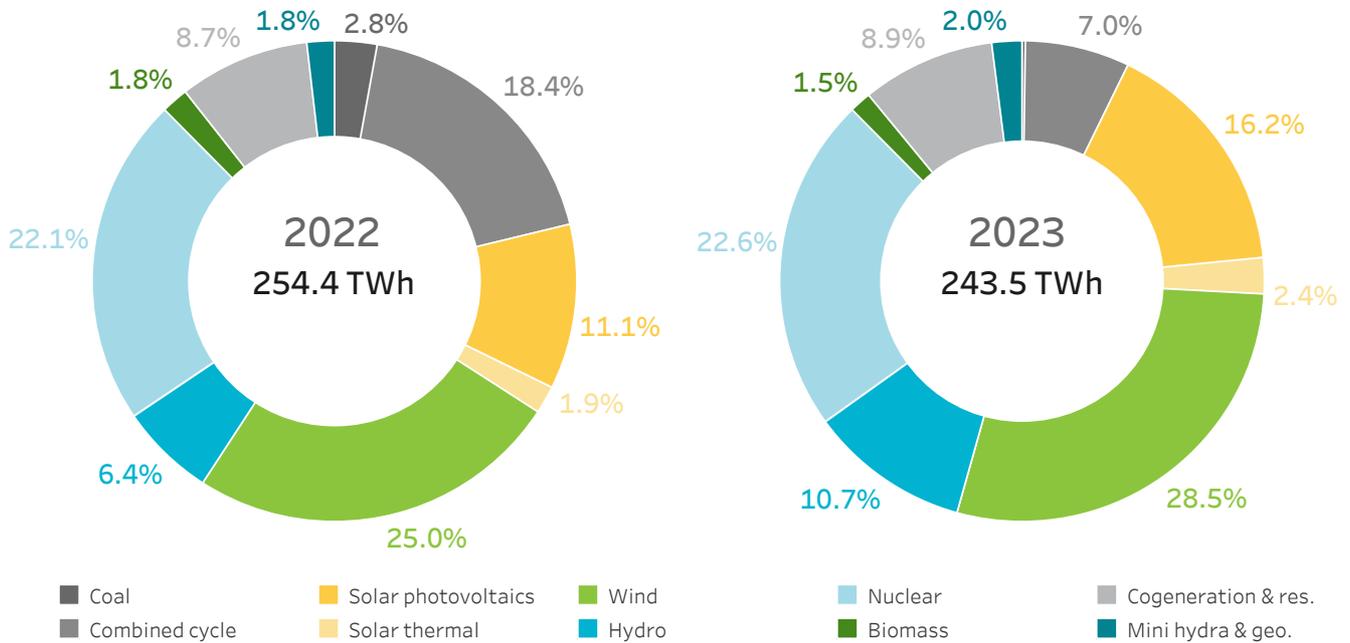
1.6 Prices [€/MWh] and energies [GWh] on the day-ahead market In Portugal

Año de study	Mes de study	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2023	January	69.35	220.00	0.00	5,428.0	171.7
	February	134.23	189.74	17.69	4,867.0	154.9
	March	89.96	190.00	0.00	4,571.5	158.8
	April	76.96	166.06	0.00	3,945.8	177.3
	May	76.09	148.16	0.00	4,104.0	167.7
	June	95.59	156.13	45.00	3,983.2	140.2
	July	93.80	151.65	0.00	4,282.1	106.2
	August	97.86	180.34	0.00	4,244.5	105.8
	September	104.15	170.00	4.08	4,189.7	81.8
	October	89.85	215.02	0.00	4,534.4	80.3
	November	63.26	161.99	0.00	4,766.3	82.0
	December	72.20	174.00	0.00	4,984.7	77.3
Interannual results		88.27	220.00	0.00	53,901.2	1,504.1

Año de estudio	Period	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2022	January-December	167.90	651.00	0.00	52,127.6	13,437.3
2023	January-December	88.27	220.00	0.00	53,901.2	1,504.1

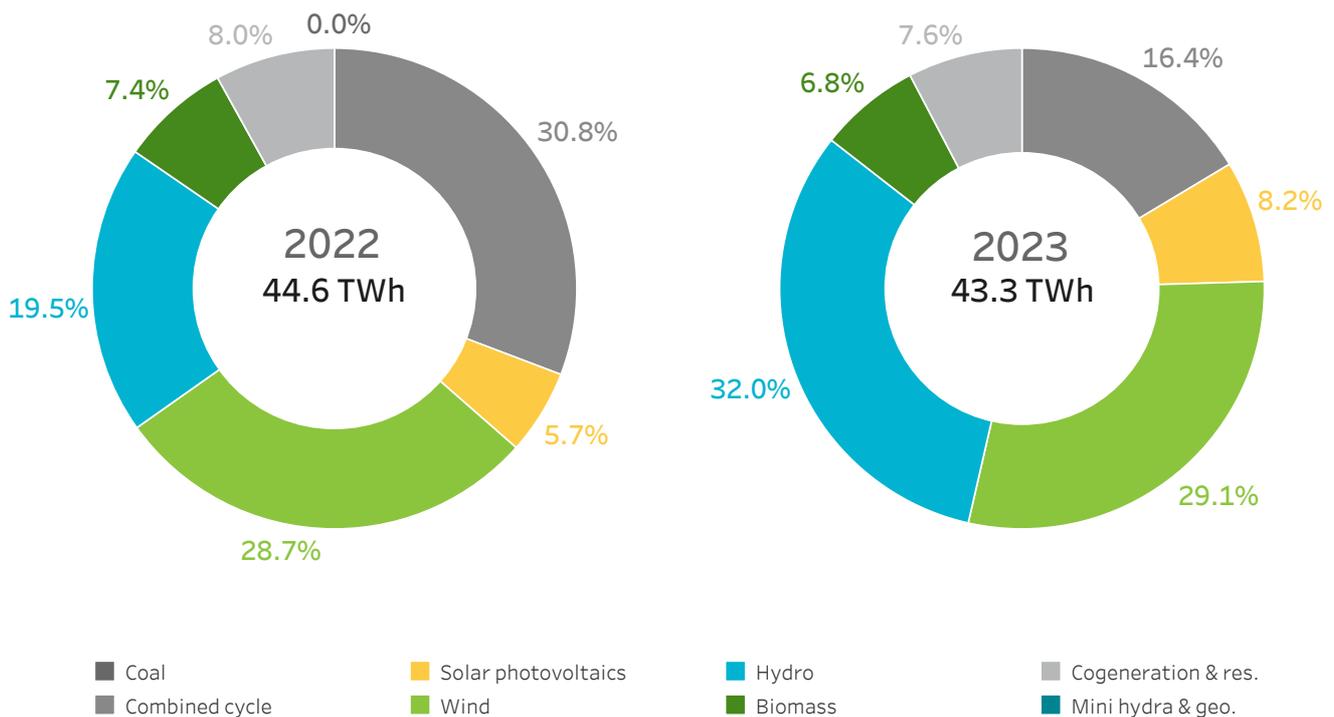
1.7 Technologies in the day-ahead operations program (Programa Diario Base de Funcionamiento, PDBF)

In Spain



1.8 Technologies in the day-ahead operations program (Programa Diario Base de Funcionamiento, PDBF)

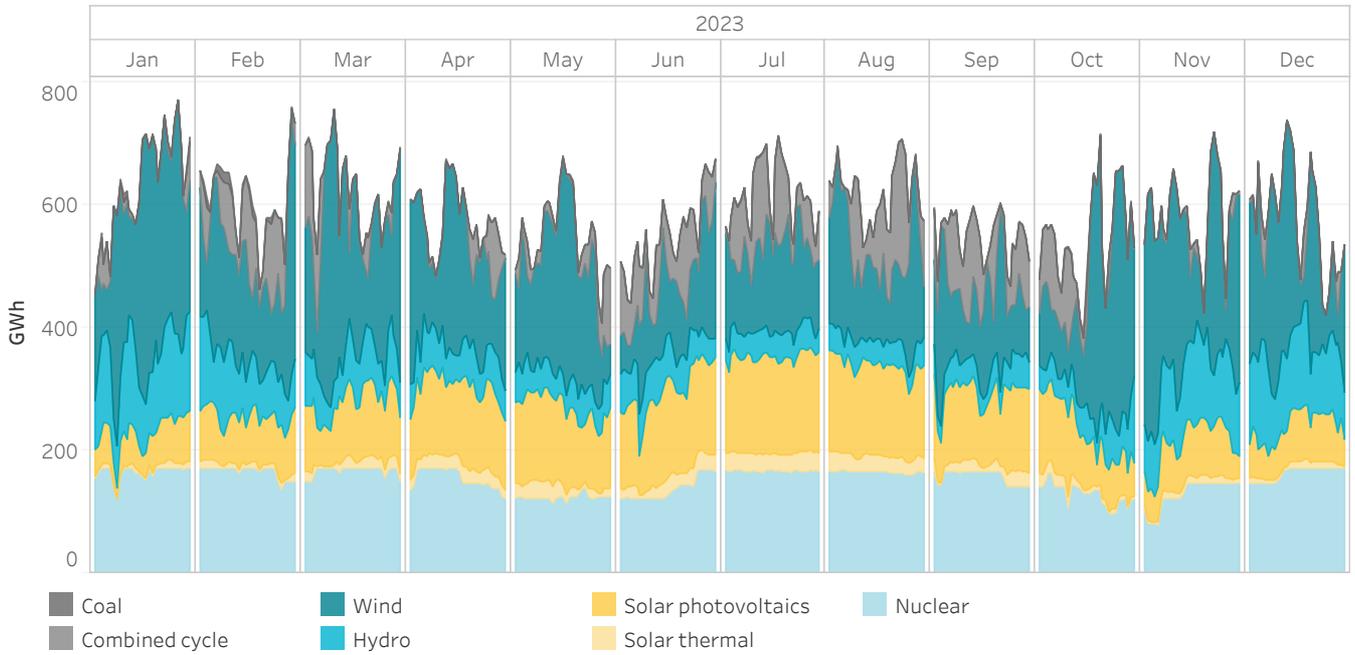
In Portugal



1.9 Energy classified by technology in the day-ahead operations program (Programa Diario Base de Funcionamiento, PDBF)

In Spain

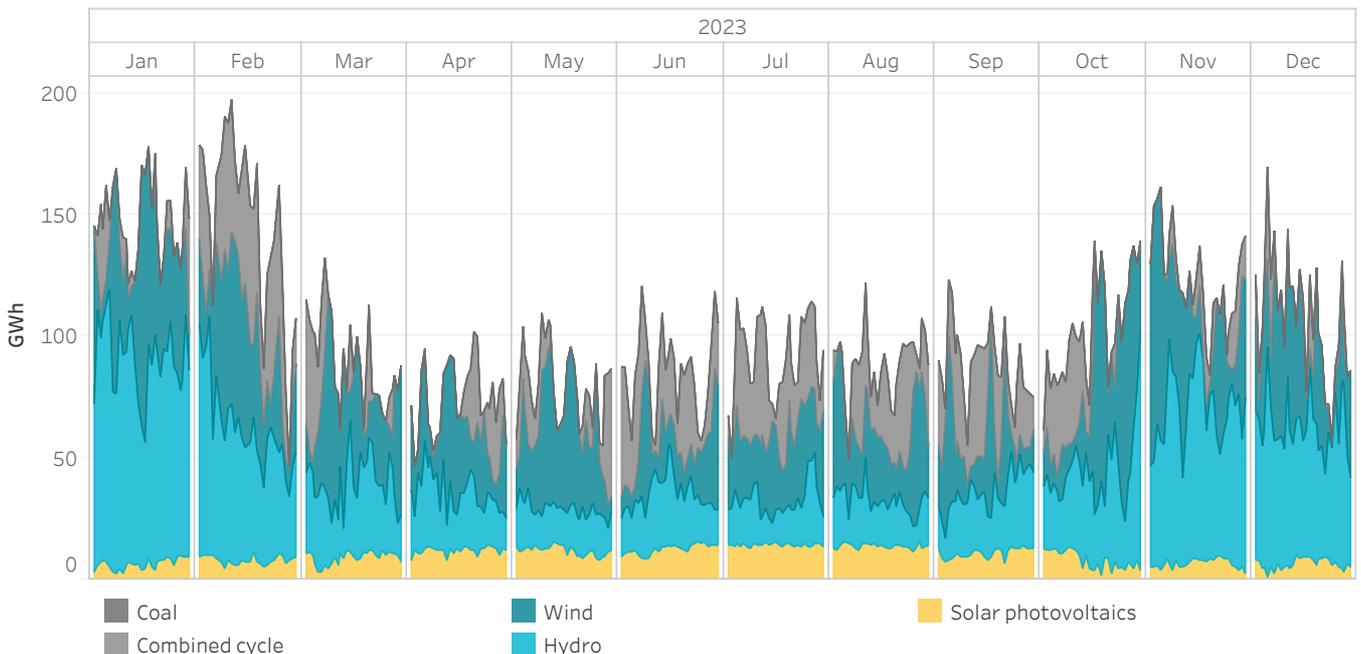
"Other renewables" includes the energy negotiated by cogeneration, waste, biomass, geothermics and minihydraulic.



1.10 Energy classified by technology in the day-ahead operations program (Programa Diario Base de Funcionamiento, PDBF)

In Portugal

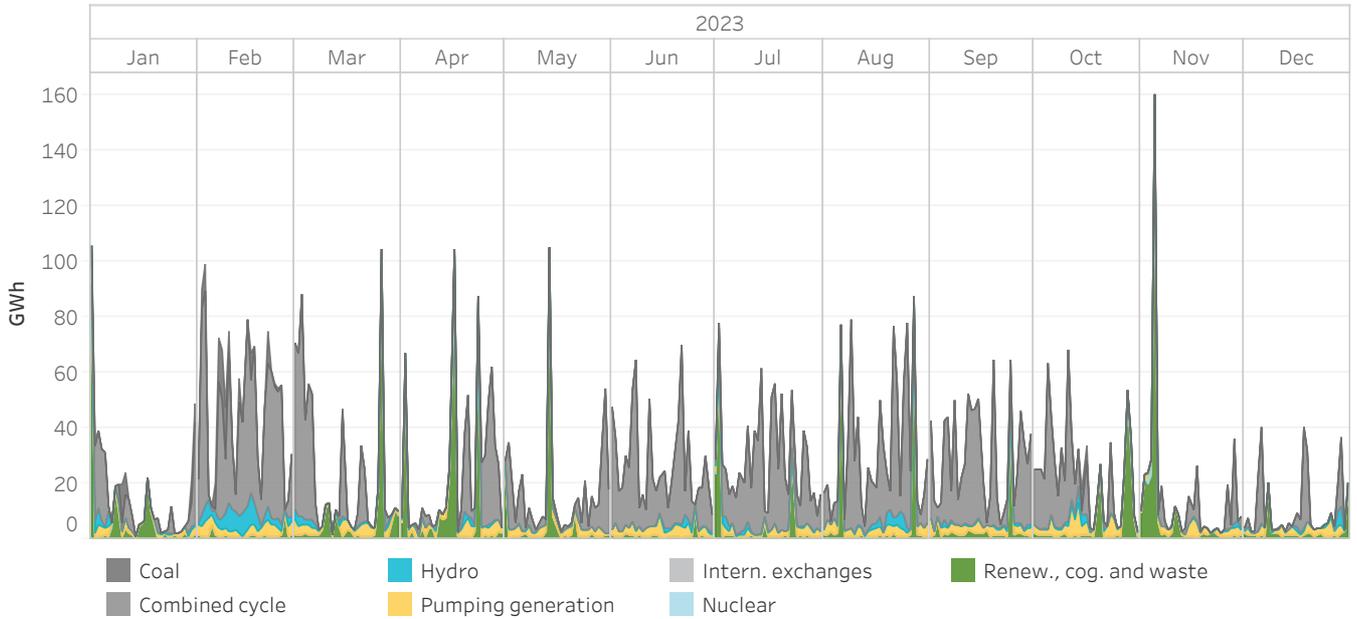
"Other renewables" includes the energy negotiated by cogeneration, waste, biomass, geothermics and minihydraulic.



1.11 Energy classified by technology at 95% of the marginal day-ahead market price

In Spain

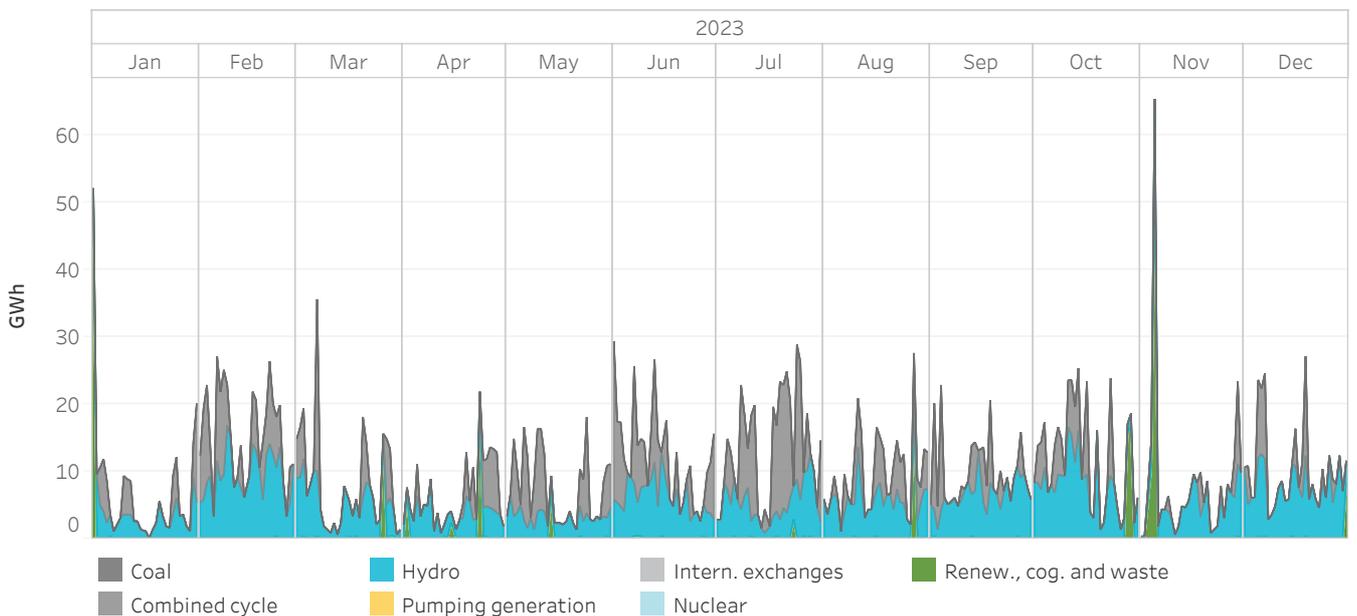
Energy matched classified by technology in the day-ahead market with bid price offered at a price greater than or equal to the 95% of the marginal price, including complex bids. The graph does not show the technologies setting the marginal price. This information is shown in graph 1.13.



1.12 Energy classified by technology at 95% of the marginal day-ahead market price

In Portugal

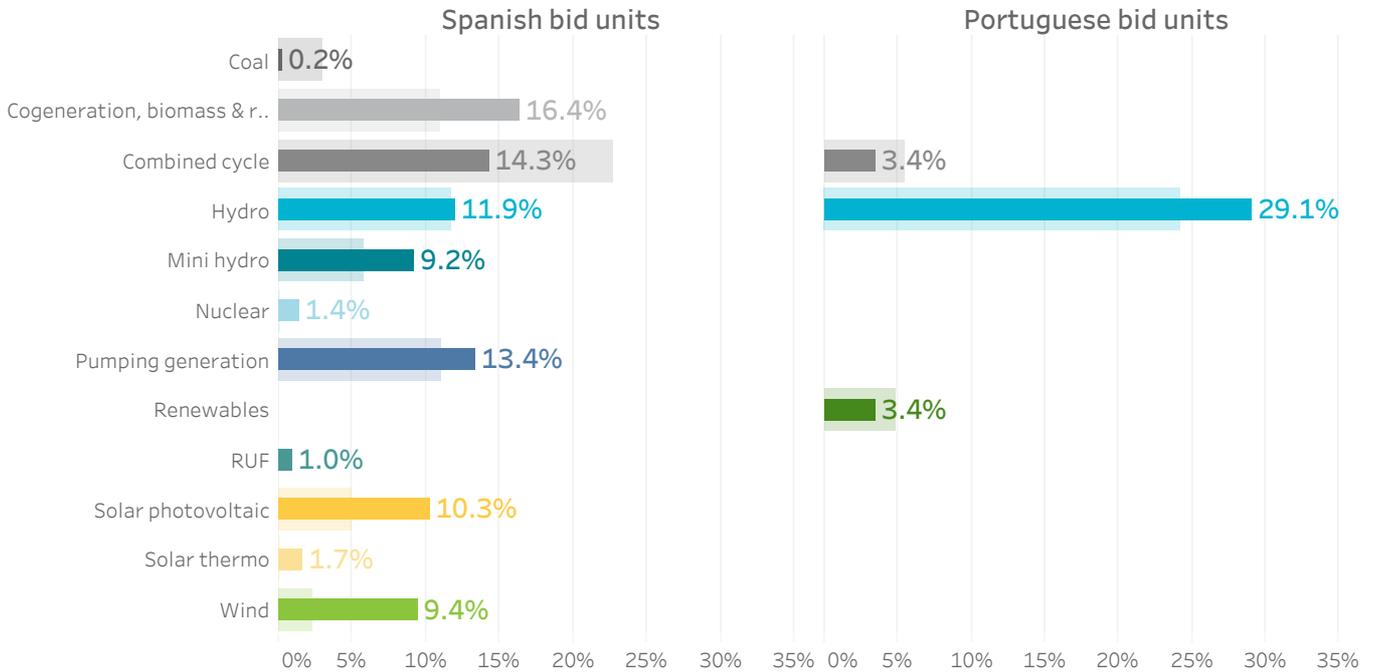
Energy matched classified by technology in the day-ahead market with bid price offered at a price greater than or equal to the 95% of the marginal price, including complex bids. The graph does not show the technologies setting the marginal price. This information is shown in graph 1.14.



1.13 Percentage of hours in which each technology sets a price

In Spain

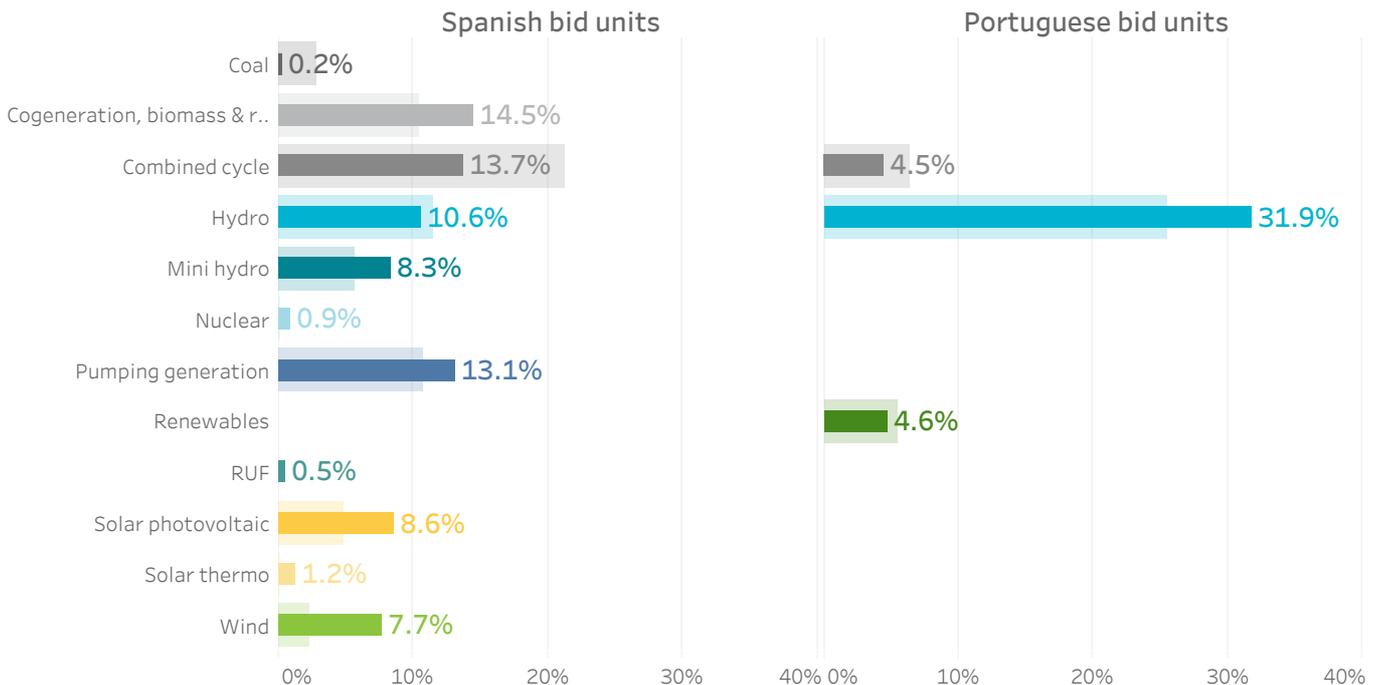
The previous year is shown in a lighter and thicker bar in the back of the graph.



1.14 Percentage of hours in which each technology sets a price

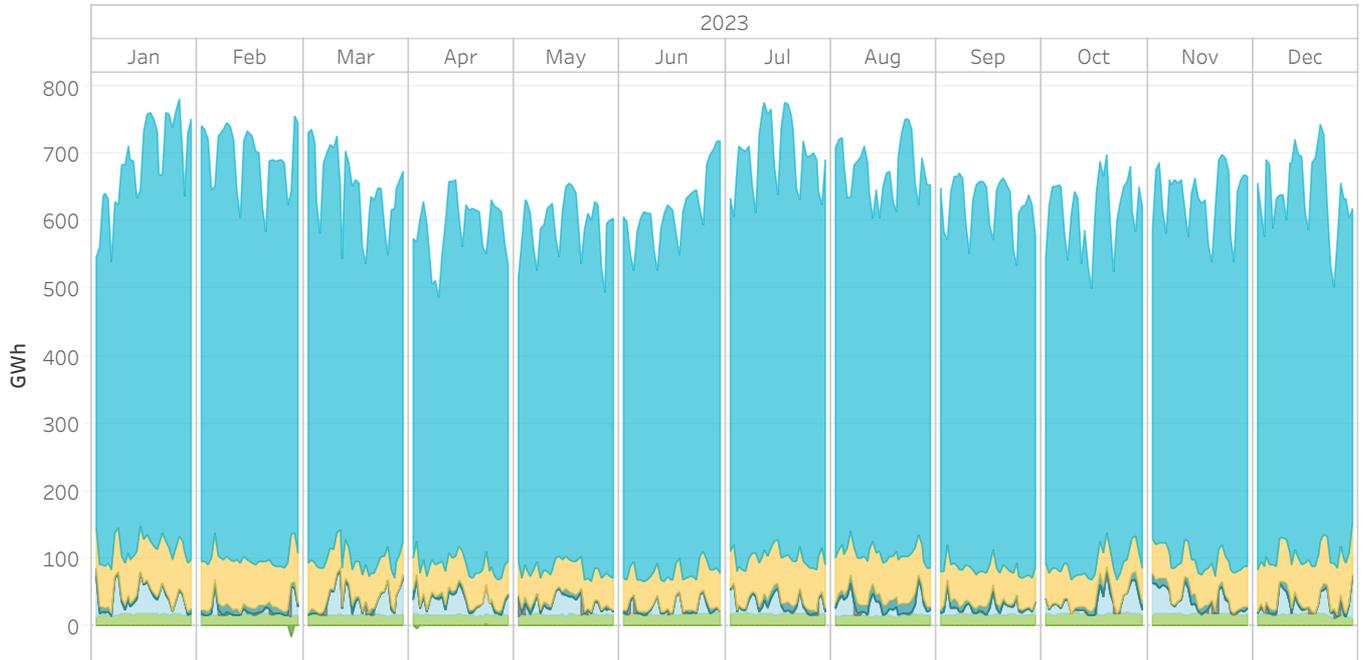
In Portugal

The previous year is shown in a lighter and thicker bar in the back of the graph.



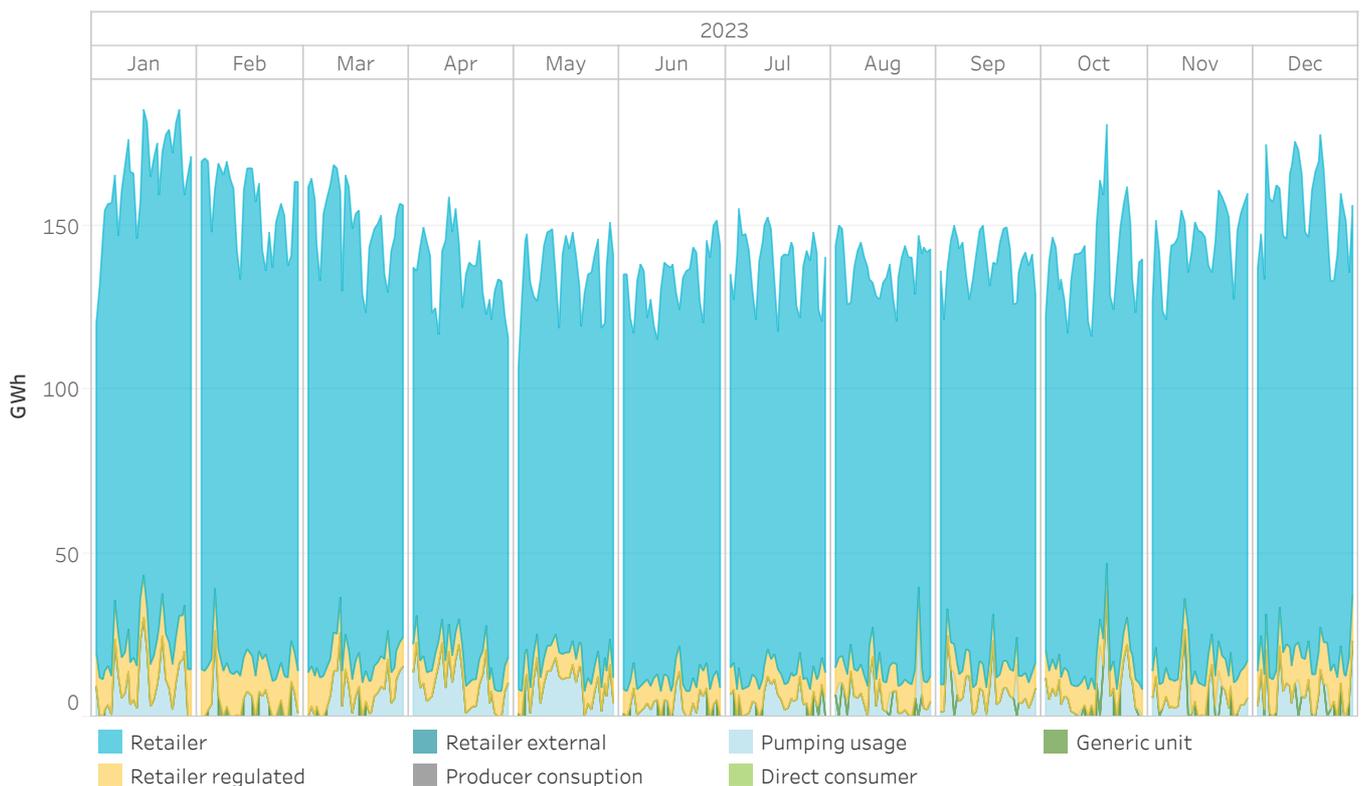
1.15 Matched energy for acquisition units in the day-ahead operational program (Programa Diario Base de Funcionamiento, PDBF)

In Spain

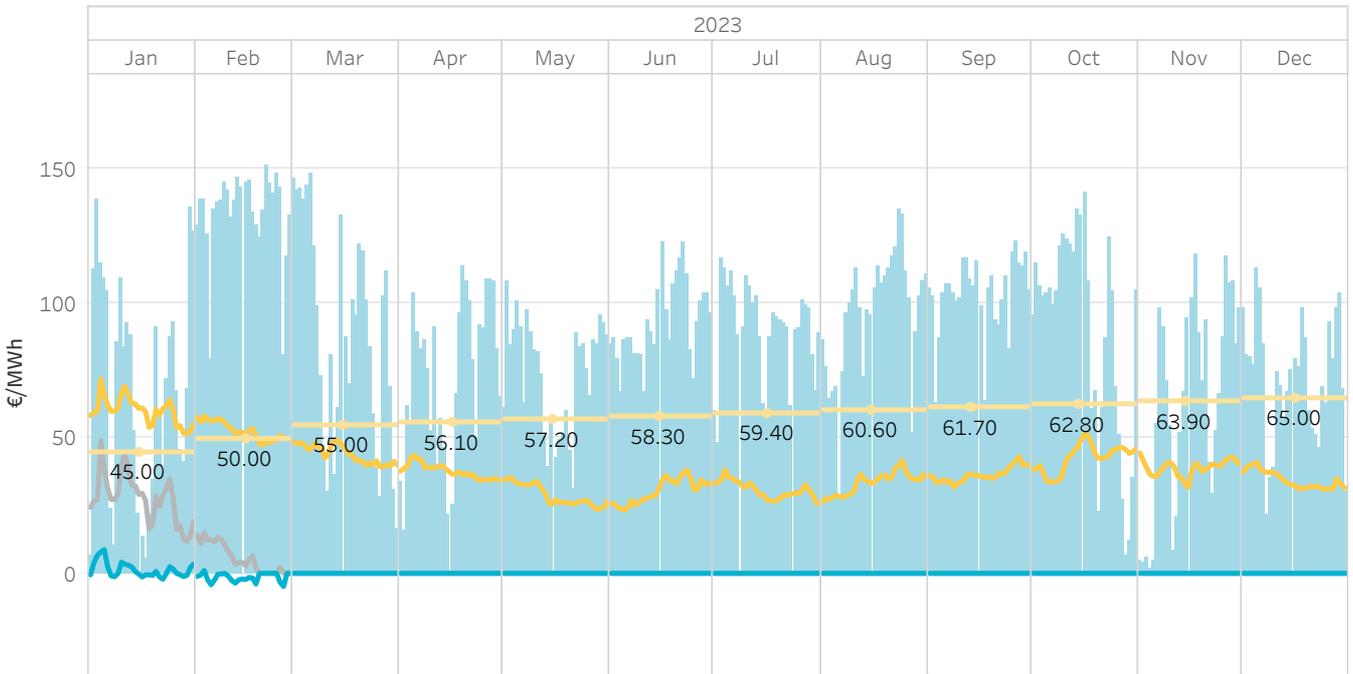


1.16 Matched energy for acquisition units in the day-ahead operational program (Programa Diario Base de Funcionamiento, PDBF)

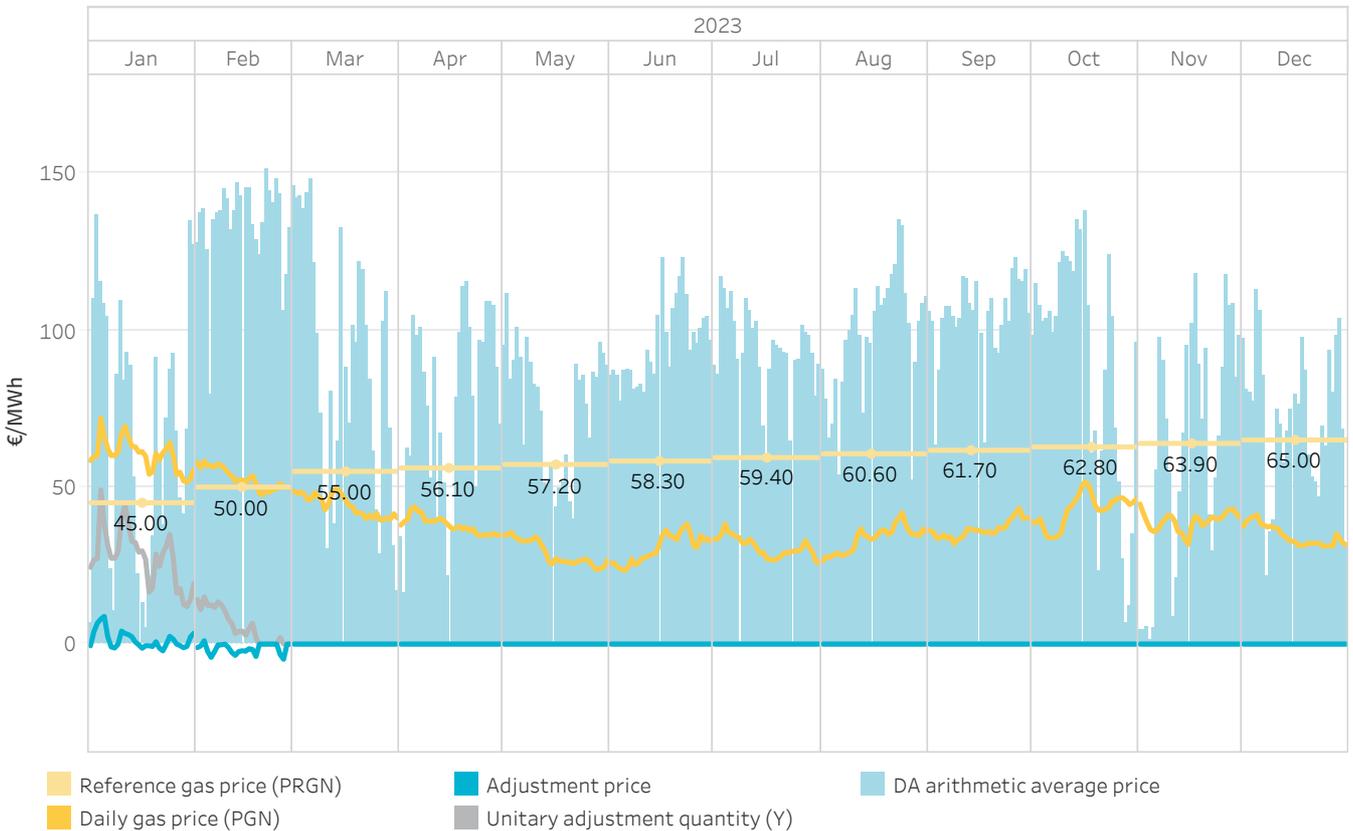
In Portugal



1.17 Average Day-ahead market prices. Adjustment mechanism In Spain



1.18 Average Day-ahead market prices. Adjustment mechanism In Portugal



■ Reference gas price (PRGN)
 ■ Adjustment price
 ■ DA arithmetic average price
■ Daily gas price (PGN)
 ■ Unitary adjustment quantity (Y)

2.

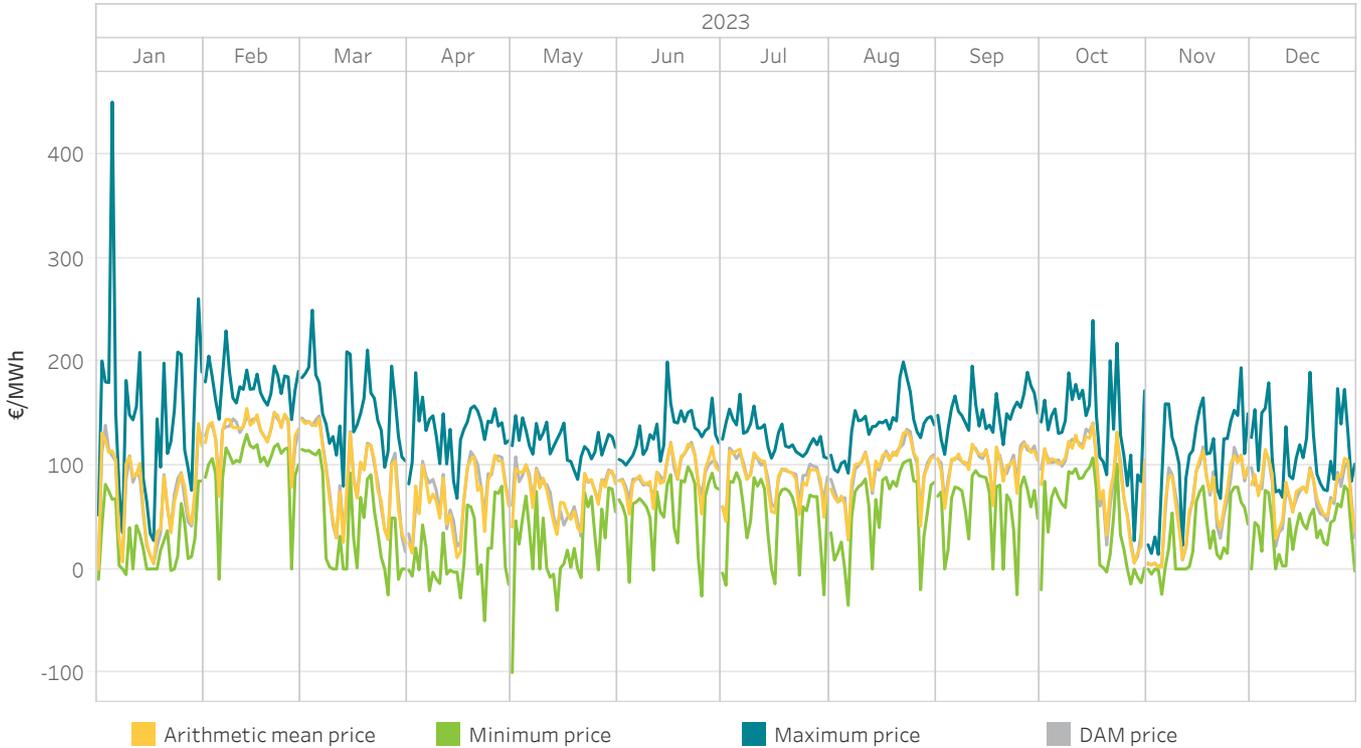
Intraday auction market

- Prices and energies on the intraday auction market
- Technologies on the intraday auction market



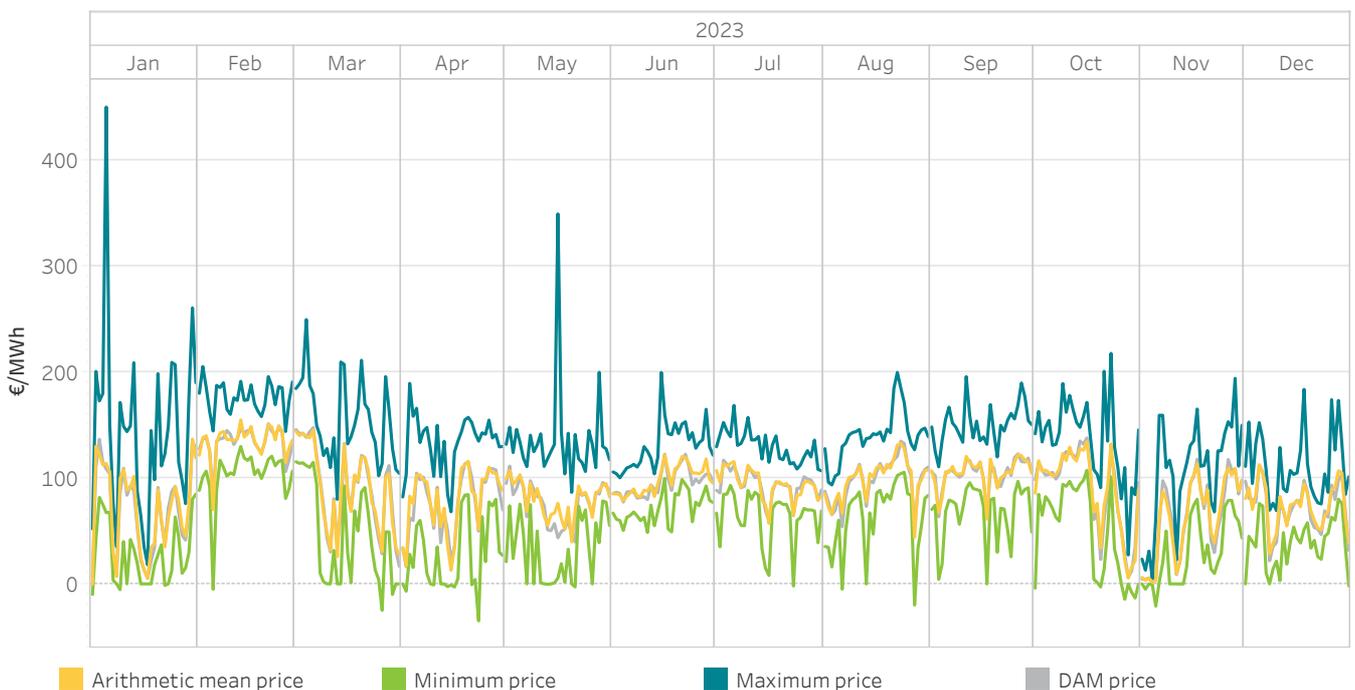
2.1 Maximum, minimum and arithmetic mean prices on the intraday auction market

In Spain



2.2 Maximum, minimum and arithmetic mean prices on the intraday auction market

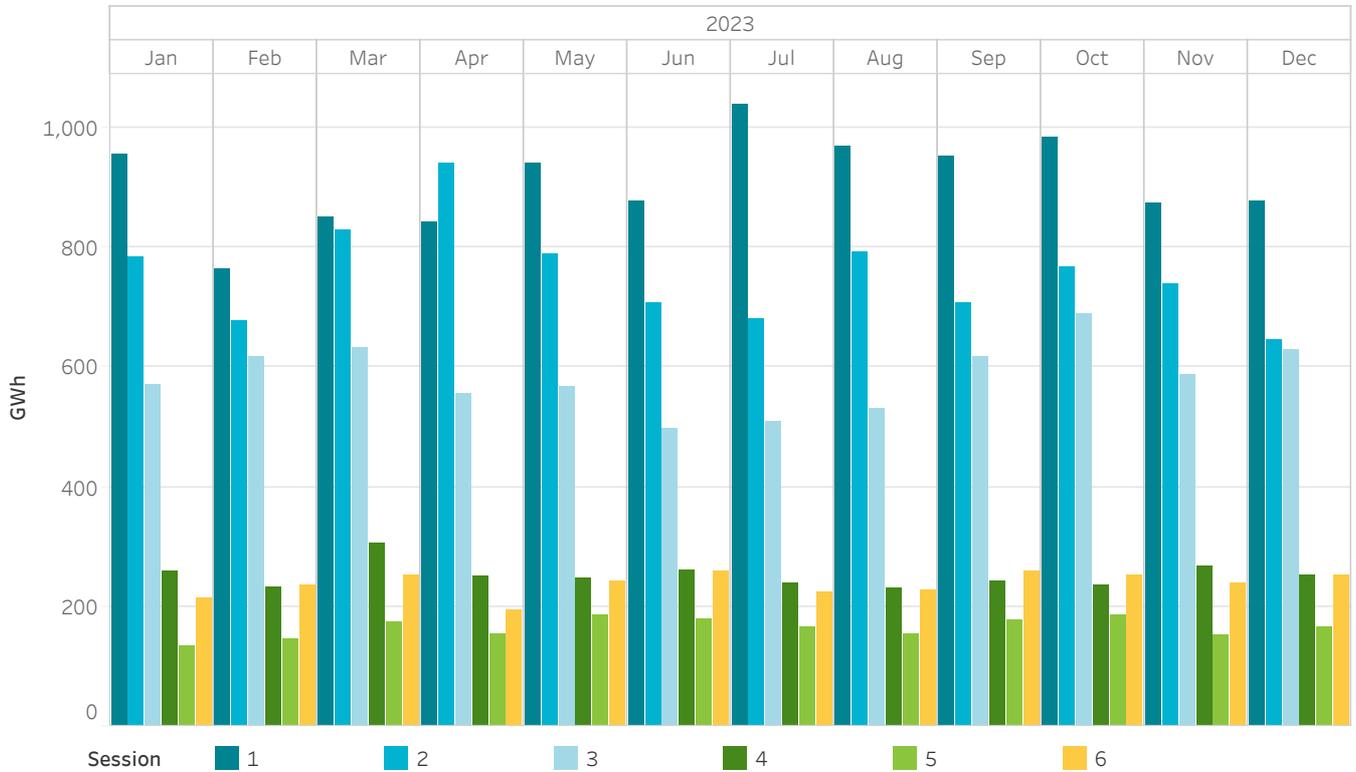
In Portugal



2.3 Monthly energy by session on the intraday auction market

In Spain

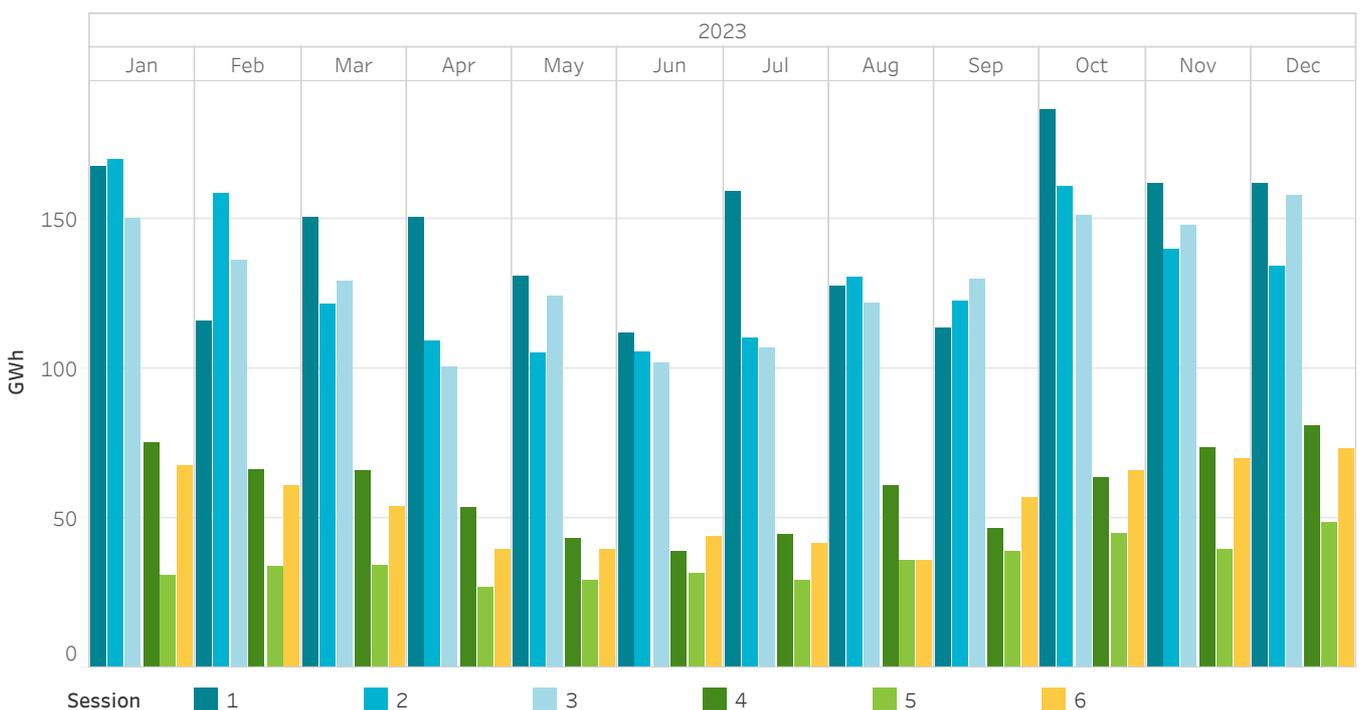
The negotiated energy is calculated as the addition of the acquisitions made in Spain plus the net exports.



2.4 Monthly energy by session on the intraday auction market

In Portugal

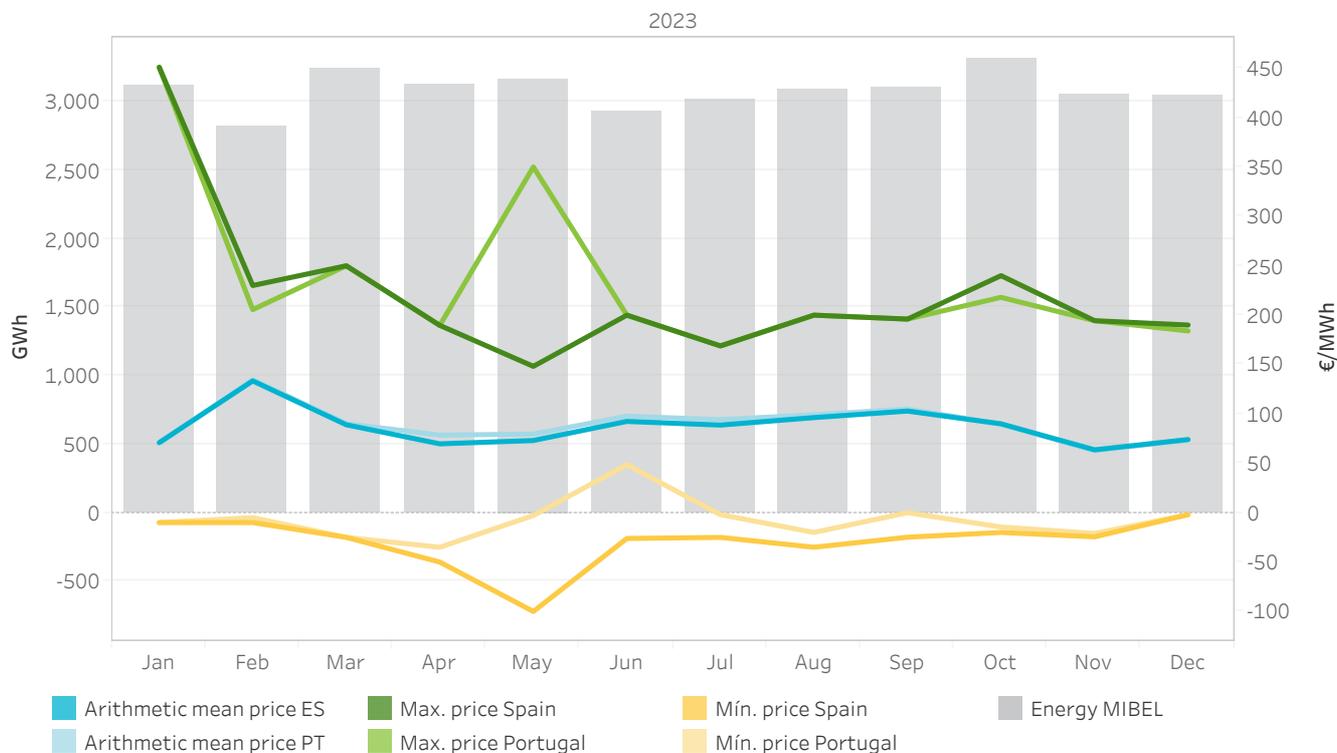
The negotiated energy is calculated as the addition of the acquisitions made in Portugal plus the net exports.



2.5 Prices and energy in the intraday auction markets

In Spain, Portugal and MIBEL

The maximum and minimum prices refer to hourly prices. The energy negotiated is calculated as the sum of acquisitions and net exports from each area.



2.6 Prices [€/MWh] and energy [GWh] in the intraday auction markets

In Spain, Portugal and MIBEL

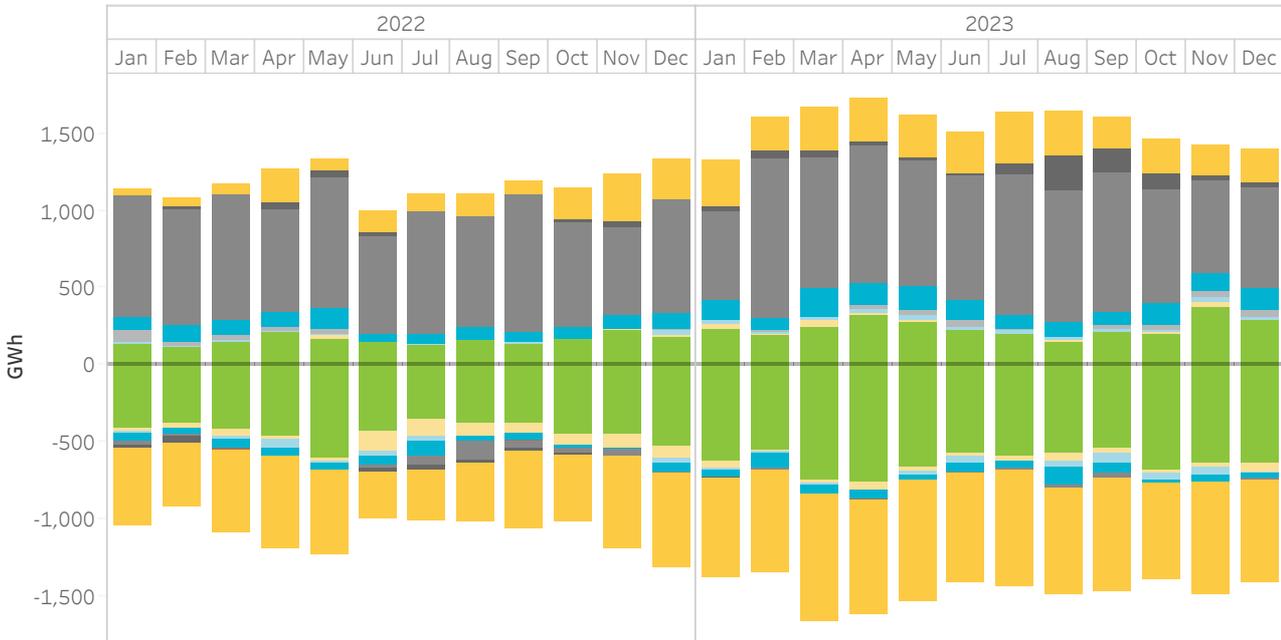
The maximum and minimum prices refer to hourly prices. The energy negotiated is calculated as the sum of acquisitions and net exports from each area.

	Arithmetic mean price ES	Arithmetic mean price PT	Max. price Spain	Max. price Portugal	Mín. price Spain	Mín. price Portugal	Energy Spain	Energy Portugal	Energy MIBEL
January	70.92	70.47	451.00	451.00	-10.00	-10.00	2,917.73	662.84	3,108.87
February	133.46	134.47	230.00	205.60	-10.00	-5.00	2,677.58	573.16	2,818.59
March	89.01	90.09	250.00	250.00	-25.00	-25.00	3,052.44	559.90	3,234.47
April	69.71	78.55	189.64	189.64	-50.00	-35.00	2,939.63	482.08	3,129.71
May	73.11	79.60	148.16	350.00	-100.00	-2.85	2,976.59	473.29	3,162.03
June	92.41	97.70	200.00	200.00	-26.10	48.61	2,787.16	436.95	2,923.14
July	88.70	94.22	168.83	168.83	-25.00	-2.00	2,856.92	494.86	3,008.44
August	96.28	99.13	200.00	200.00	-35.00	-20.00	2,906.01	514.71	3,087.45
September	102.91	104.93	196.00	196.00	-24.83	0.00	2,959.31	509.44	3,098.20
October	89.96	89.77	240.00	218.02	-20.00	-14.50	3,113.90	678.72	3,302.31
November	63.65	62.87	194.39	194.39	-24.46	-21.00	2,861.24	635.42	3,049.56
December	74.05	73.81	190.00	184.00	-2.00	-2.00	2,825.52	660.02	3,038.22
Annual total	86.68	89.30	451.00	451.00	-100.00	-35.00	34,874.00	6,681.40	36,960.99

2.7 Energy negotiated on the intraday auction market classified by technology

In Spain

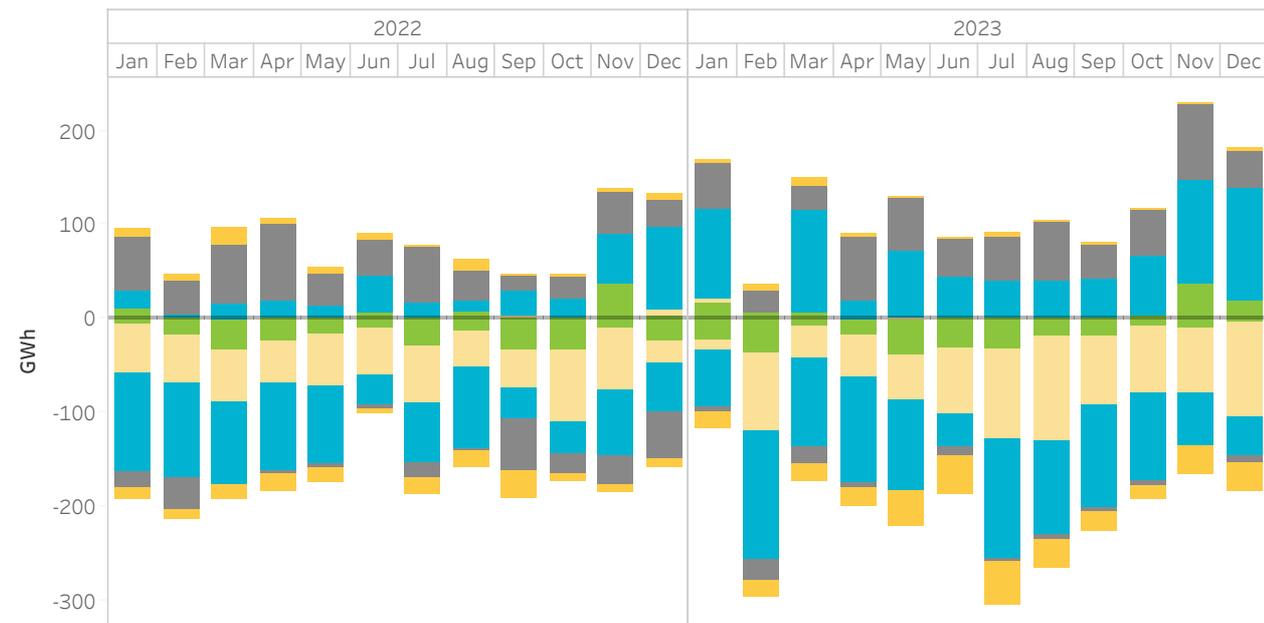
The positive values represent energy sales and the negative values represent energy purchases.



2.8 Energy negotiated on the intraday auction market classified by technology

In Portugal

The positive values represent energy sales and the negative values represent energy purchases.



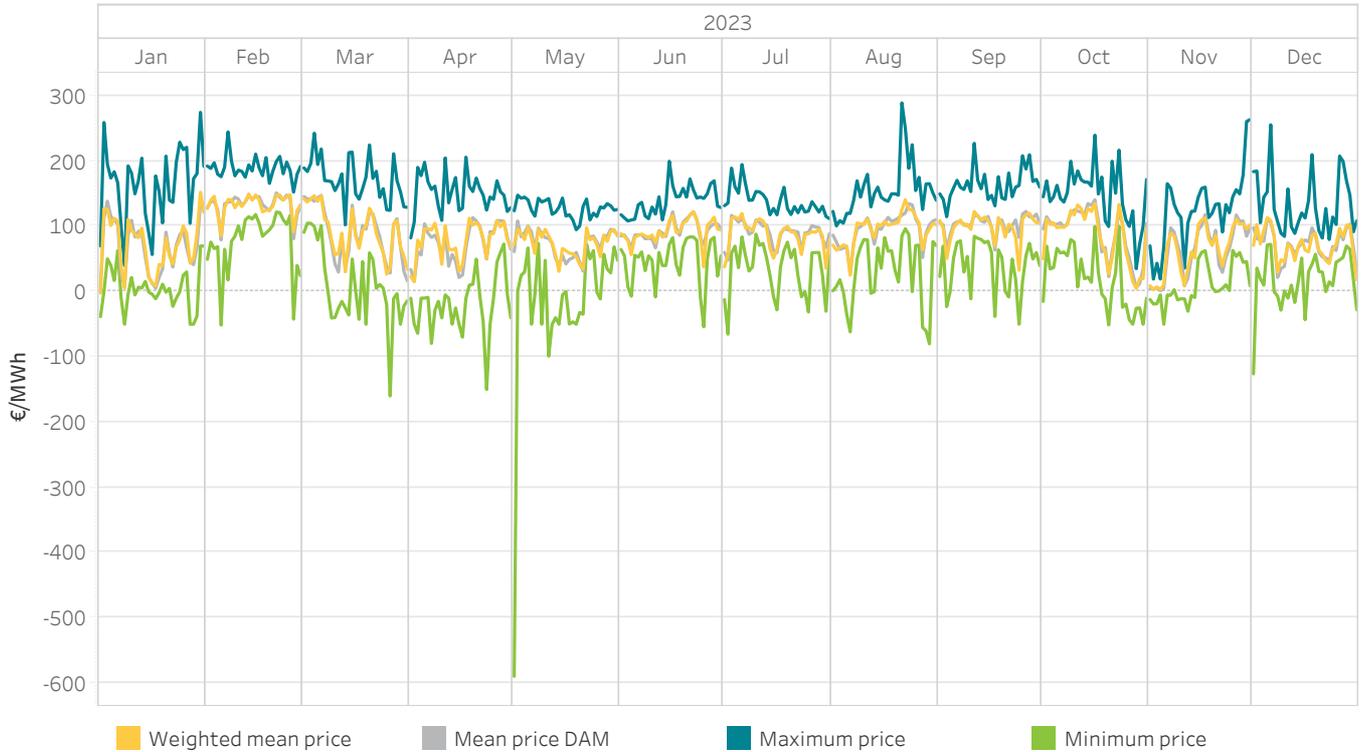
3. Intraday continuous market

- Prices and energies on the intraday continuous market
- Technologies on the intraday continuous market
- Negotiation on the intraday continuous market



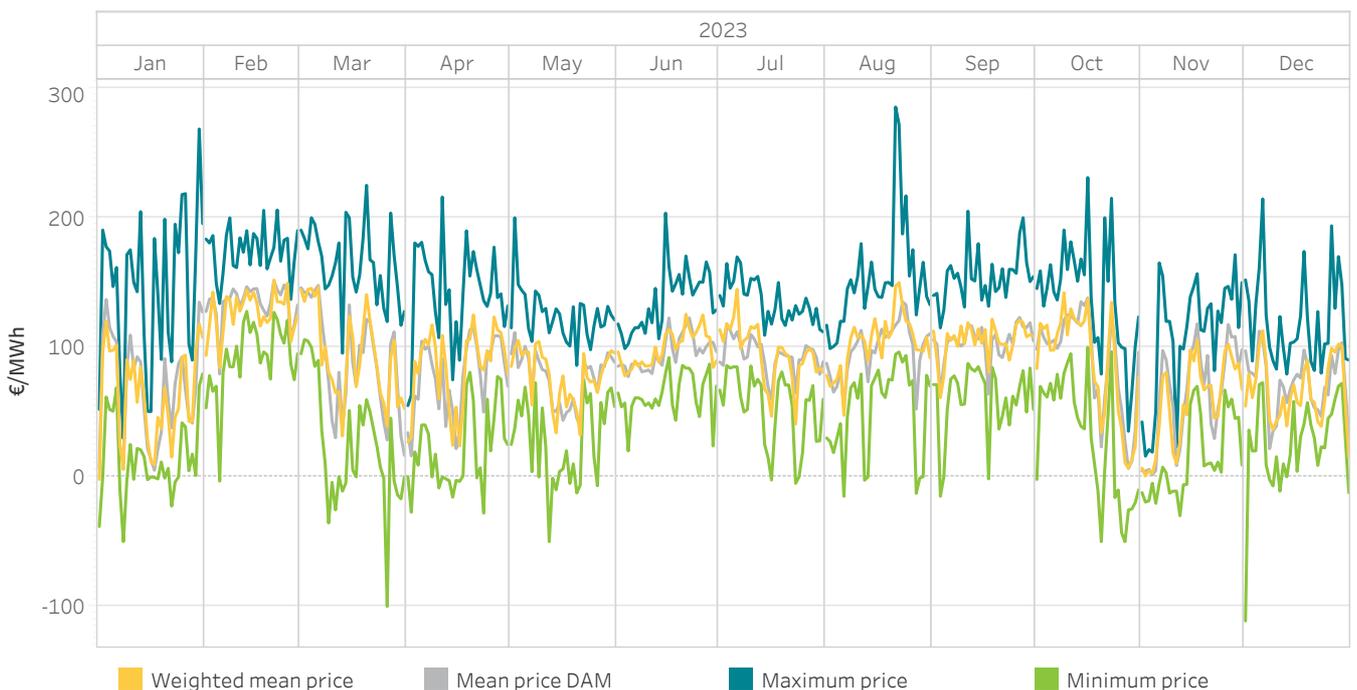
3.1 Maximum, minimum and weighted mean price on the intraday continuous market

In España

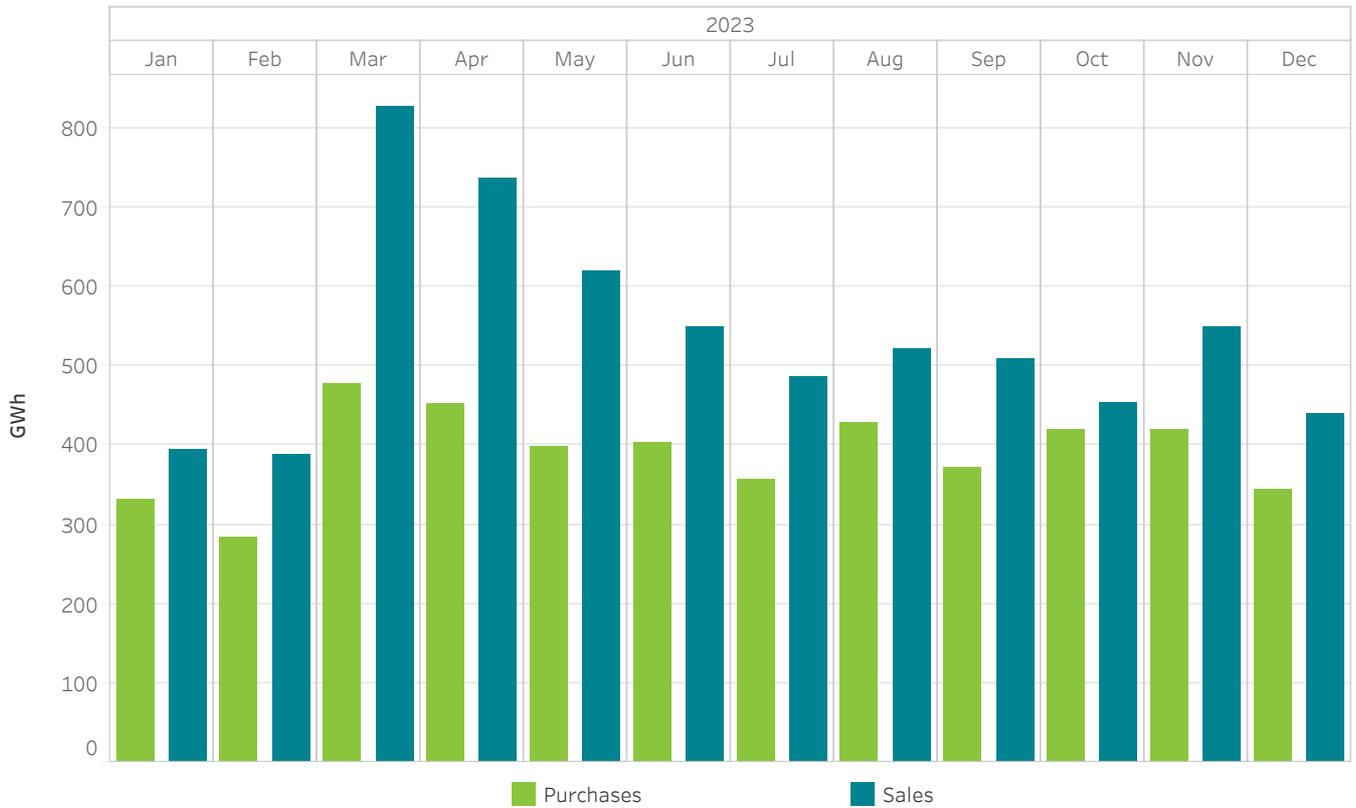


3.2 Maximum, minimum and weighted mean price on the intraday continuous market

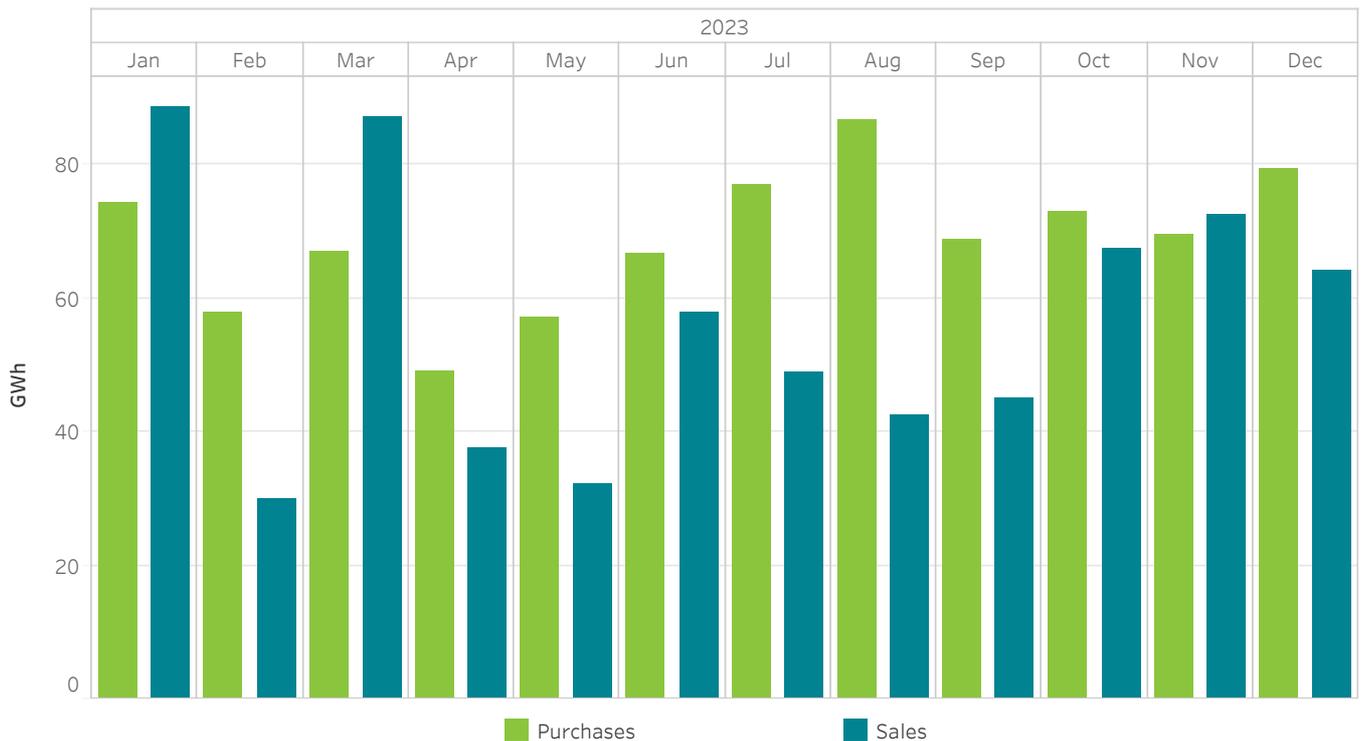
In Portugal



3.3 Monthly energy negotiated on the intraday continuous market In Spain



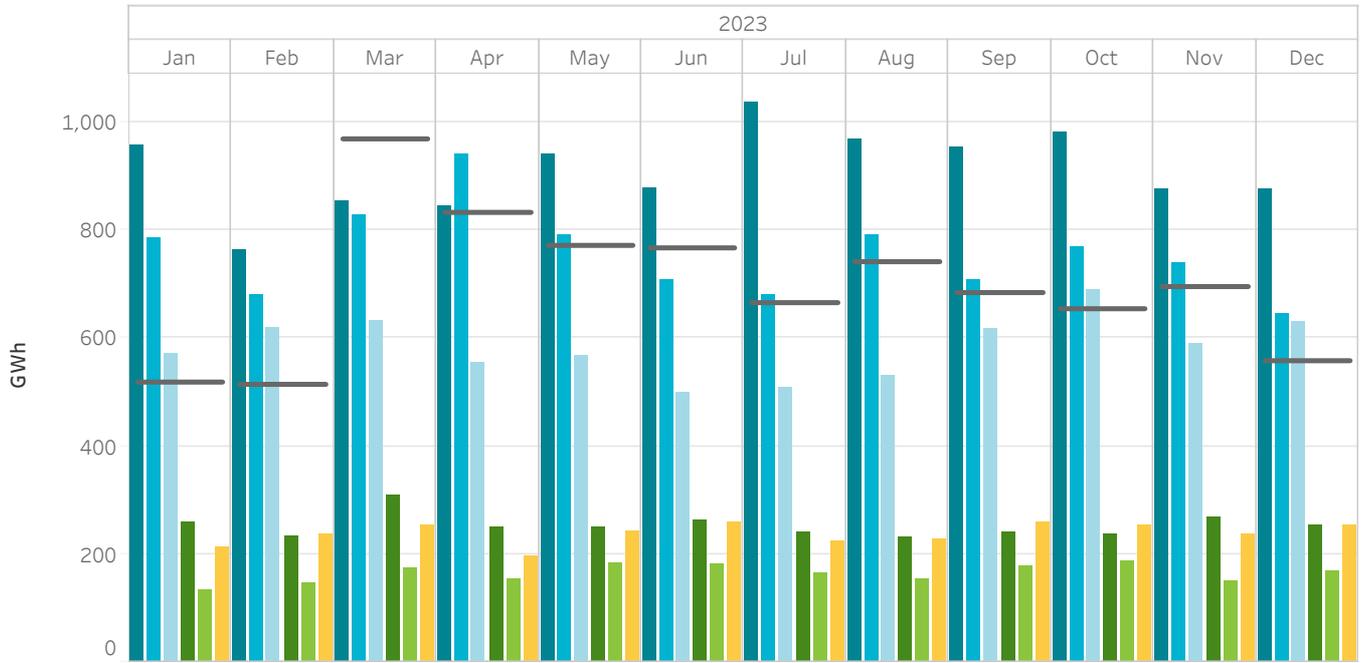
3.4 Monthly energy negotiated on the intraday continuous market In Portugal



3.5 Energy negotiated on the intraday continuous market compared to auction sessions

In Spain

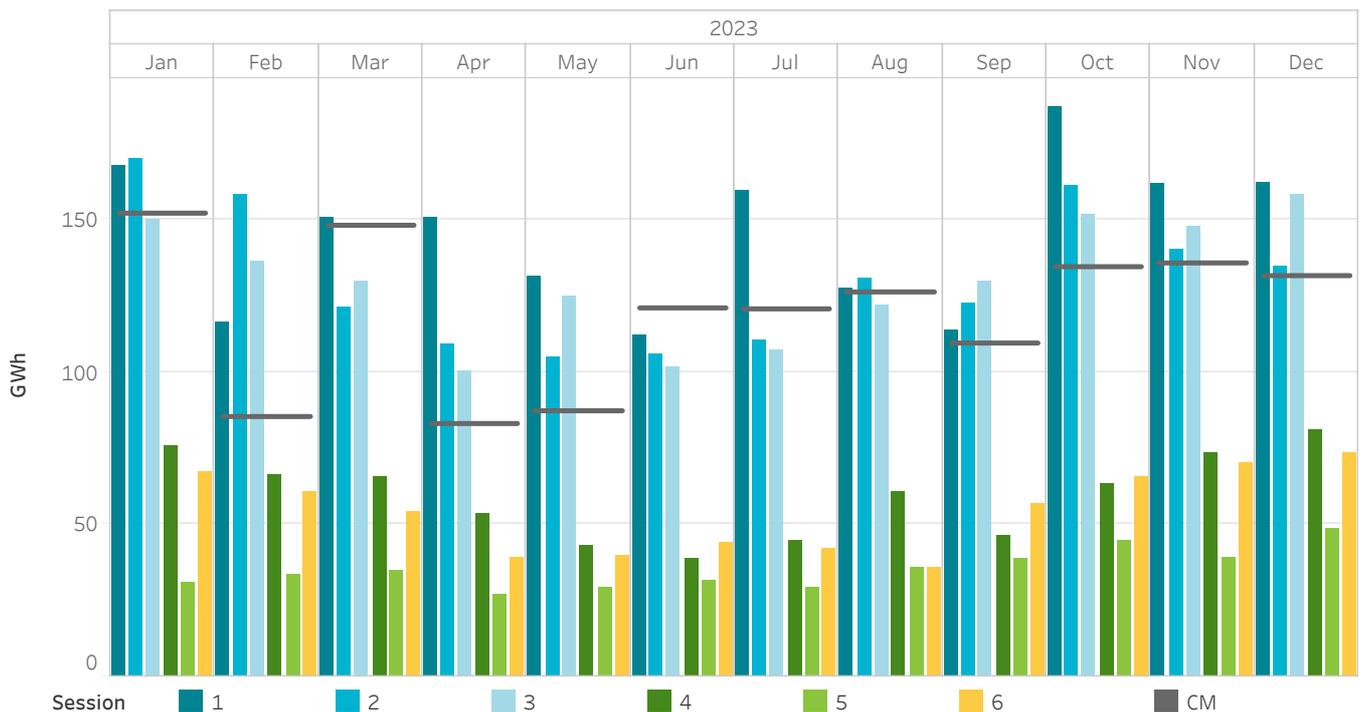
The negotiated energy is calculated as the addition of the acquisitions made in Spain plus the net exports.



3.6 Energy negotiated on the intraday continuous market compared to auction sessions

In Portugal

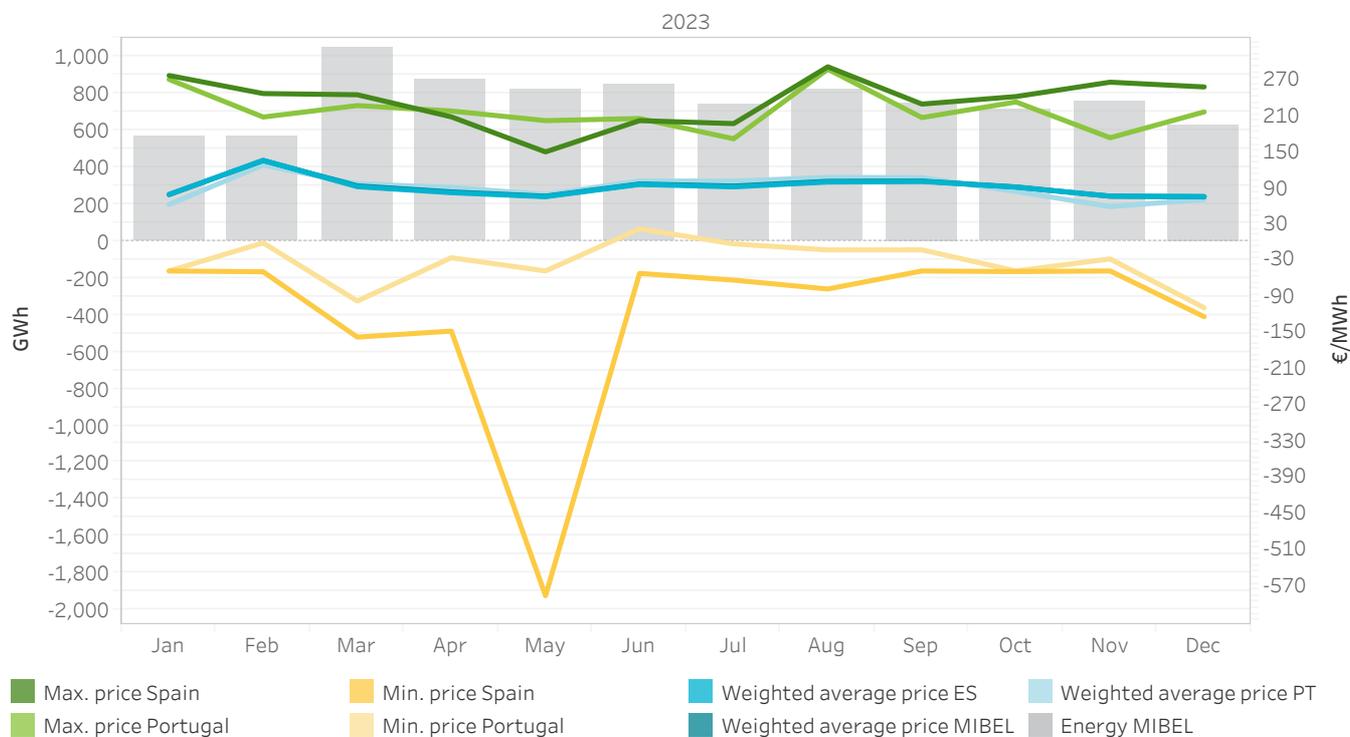
The negotiated energy is calculated as the addition of the acquisitions made in Portugal plus the net exports.



3.7 Prices and energies on the intraday continuous market

In Spain, Portugal and MIBEL

The maximum and minimum prices refer to hourly prices. The energy negotiated is calculated as the sum of acquisitions and net exports from each area.



3.8 Prices [€/MWh] and energies [GWh] on the intraday continuous market

In Spain, Portugal and MIBEL

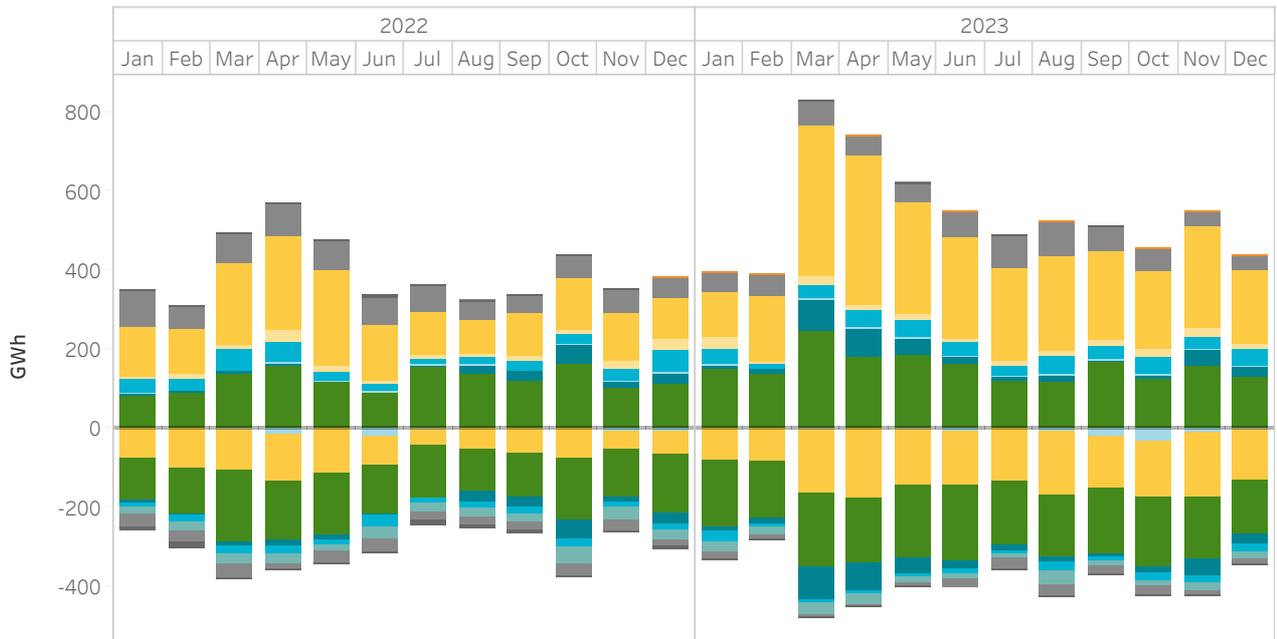
The maximum and minimum prices refer to hourly prices. The energy negotiated is calculated as the sum of acquisitions and net exports from each area.

	Precio medio ponderado ES	Precio medio ponderado PT	Max. price Spain	Max. price Portugal	Min. price Spain	Min. price Portugal	Energy Spain	Energy Portugal	Energy MIBEL
January	77.26	60.54	275.00	268.49	-50.00	-50.00	518.7	152.1	565.5
February	134.01	126.16	245.00	205.95	-51.31	-3.30	514.5	85.4	560.2
March	90.14	94.79	243.00	225.00	-160.00	-99.99	969.1	148.2	1,047.9
April	80.12	88.87	206.20	216.00	-150.00	-28.00	833.0	83.1	868.5
May	73.48	77.06	147.96	199.99	-590.00	-50.00	771.9	87.3	816.8
June	93.85	99.50	200.00	203.49	-54.00	20.00	767.2	121.0	845.8
July	89.81	99.46	195.00	169.77	-65.25	-5.02	665.8	120.7	737.1
August	97.89	105.53	289.49	285.48	-80.00	-15.00	741.6	126.3	819.3
September	98.79	105.16	227.50	205.00	-50.00	-14.94	684.5	109.5	740.8
October	89.39	82.22	240.00	230.99	-51.00	-50.00	654.5	134.6	711.2
November	74.49	57.06	263.89	171.45	-50.00	-30.00	695.6	135.8	755.0
December	73.76	68.85	256.00	214.50	-126.13	-111.21	558.3	131.6	625.1
Annual tot.	88.76	87.01	289.49	285.48	-590.00	-111.21	8,374.7	1,435.7	9,093.0

3.9 Transactions classified by technologies on the intraday continuous market

In Spain

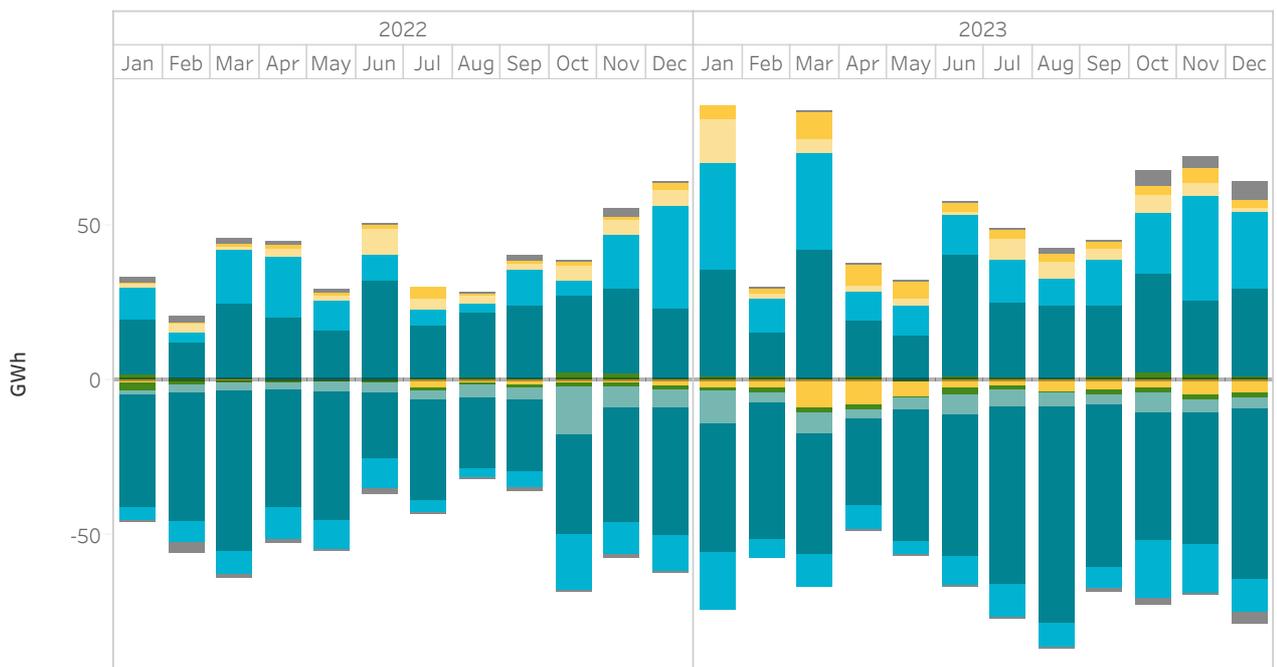
The positive values represent energy sales and the negative values represent energy purchases.



3.10 Transactions classified by technologies on the intraday continuous market

In Portugal

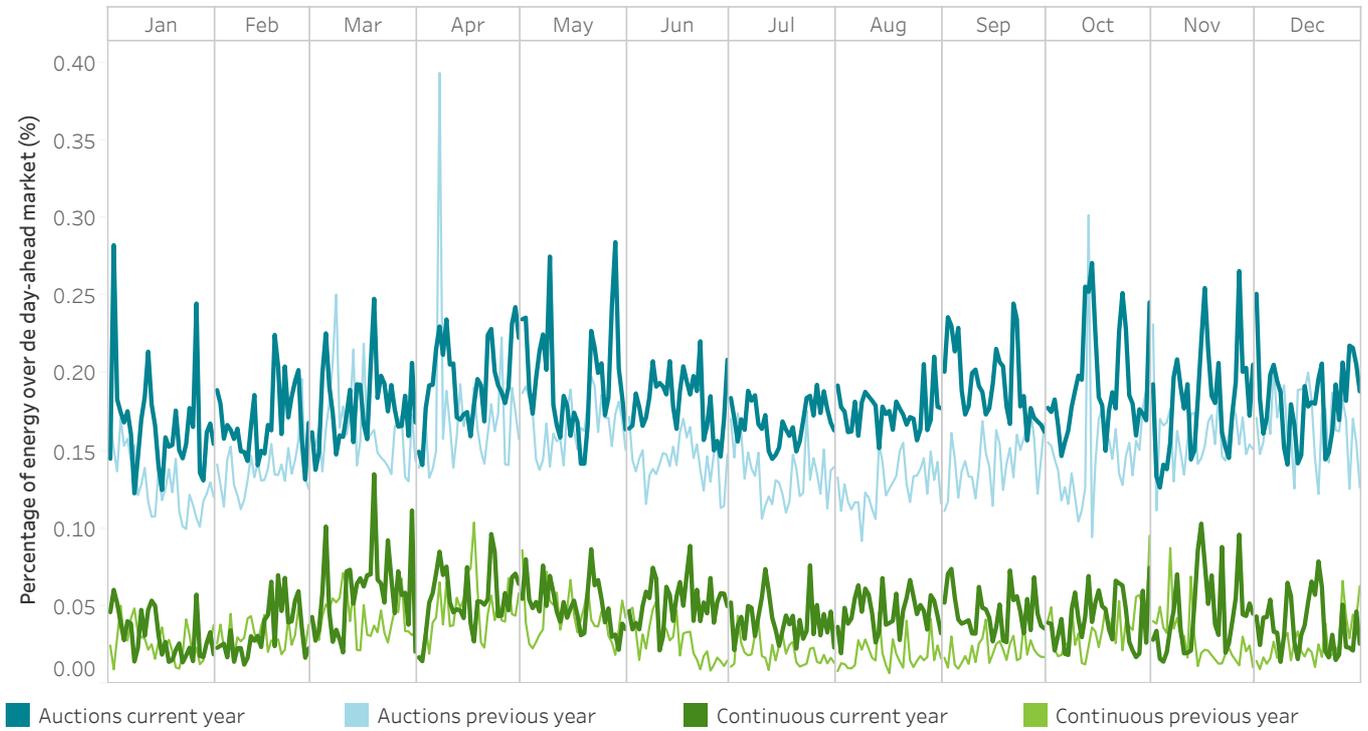
The positive values represent energy sales and the negative values represent energy purchases.



3.11 Percentage of energy negotiated on the intraday markets over the energy negotiated on the day-ahead market

MIBEL

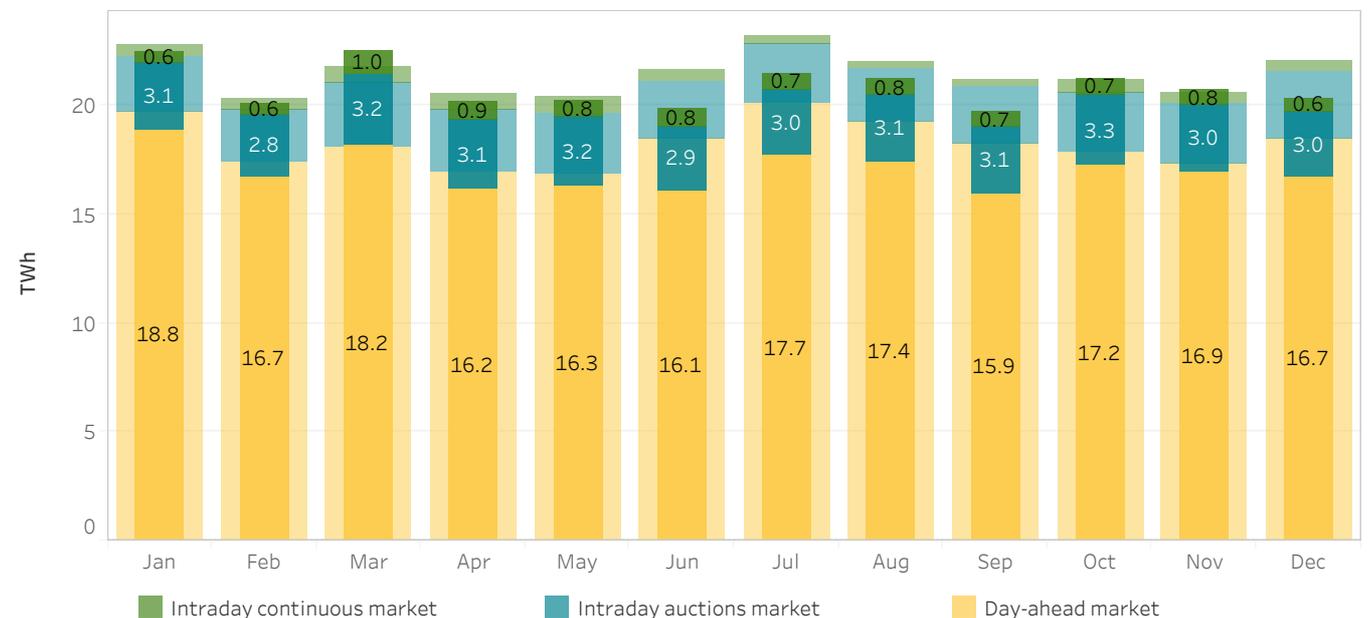
The energy negotiated is calculated as the sum of acquisitions and net exports from each area.



3.12 Energy negotiated on the intraday markets compared to the day-ahead market

MIBEL

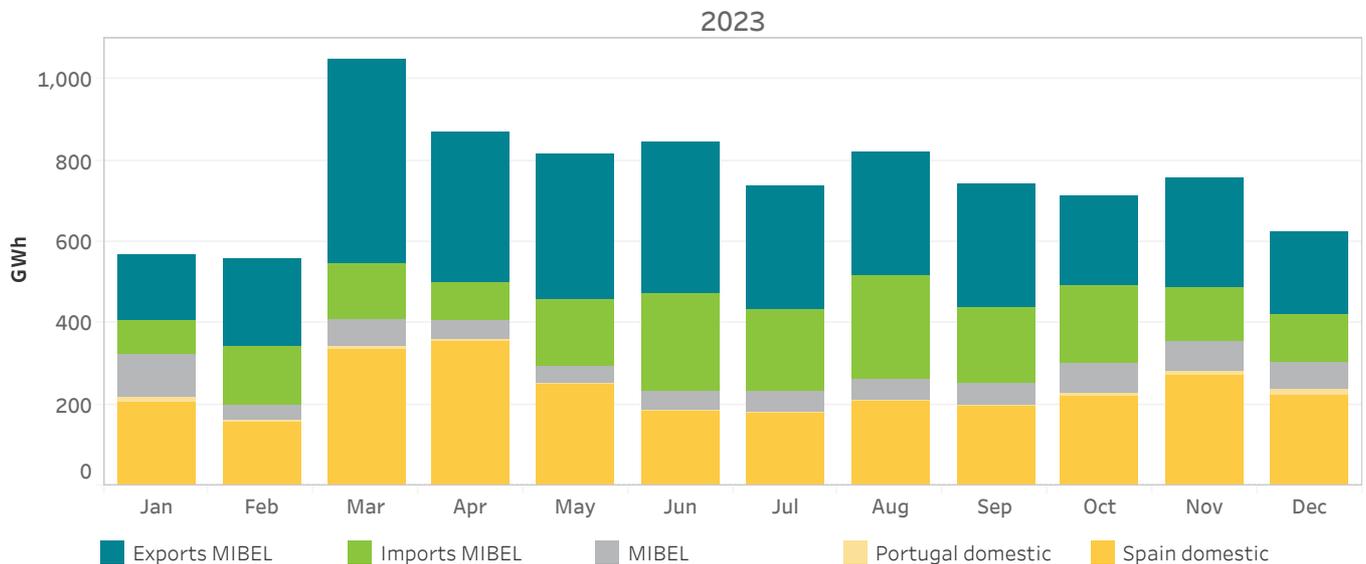
The energy negotiated is calculated as the sum of acquisitions and net exports from each area. The light-colored columns indicate values of the series for the same period from the prior year.



3.13 Energy negotiated on the intraday continuous market by negotiation area

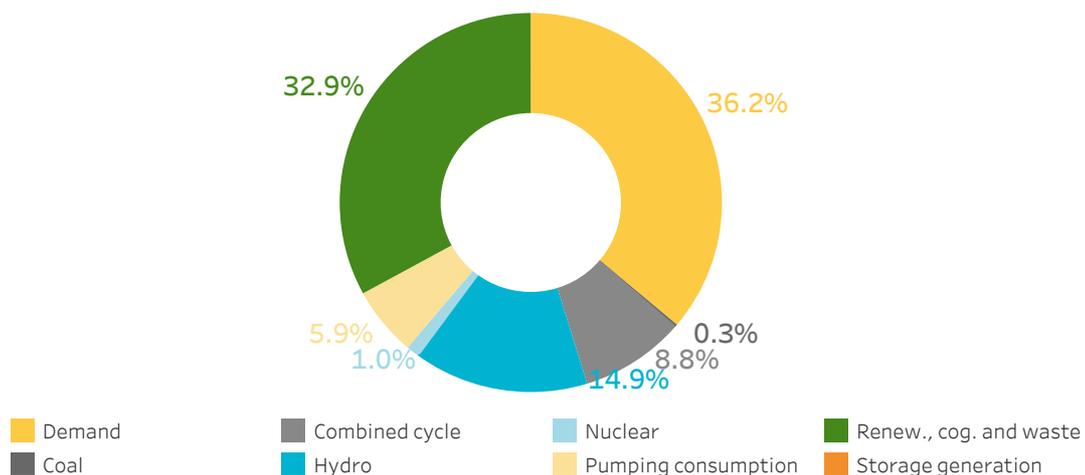
In Spain, Portugal and MIBEL

The energy negotiated is calculated as the sum of acquisitions and net exports from each area

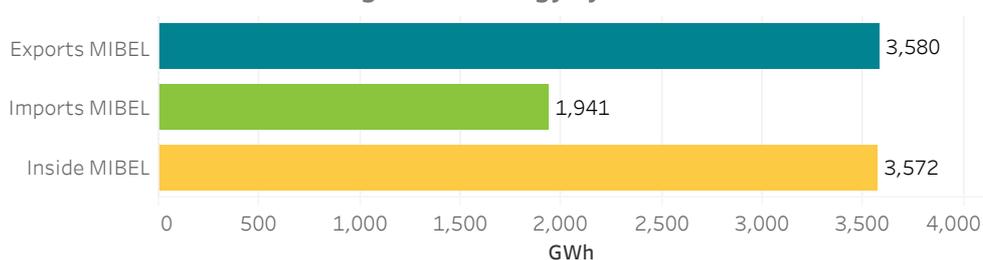


3.14 Technologies in the intraday continuous program (Programa Intradiario Básico de Casación Incremental Continuo, PIBCIC) and energy volume by negotiation area

MIBEL



Volume of negotiated energy by area in the MIBEL



4.

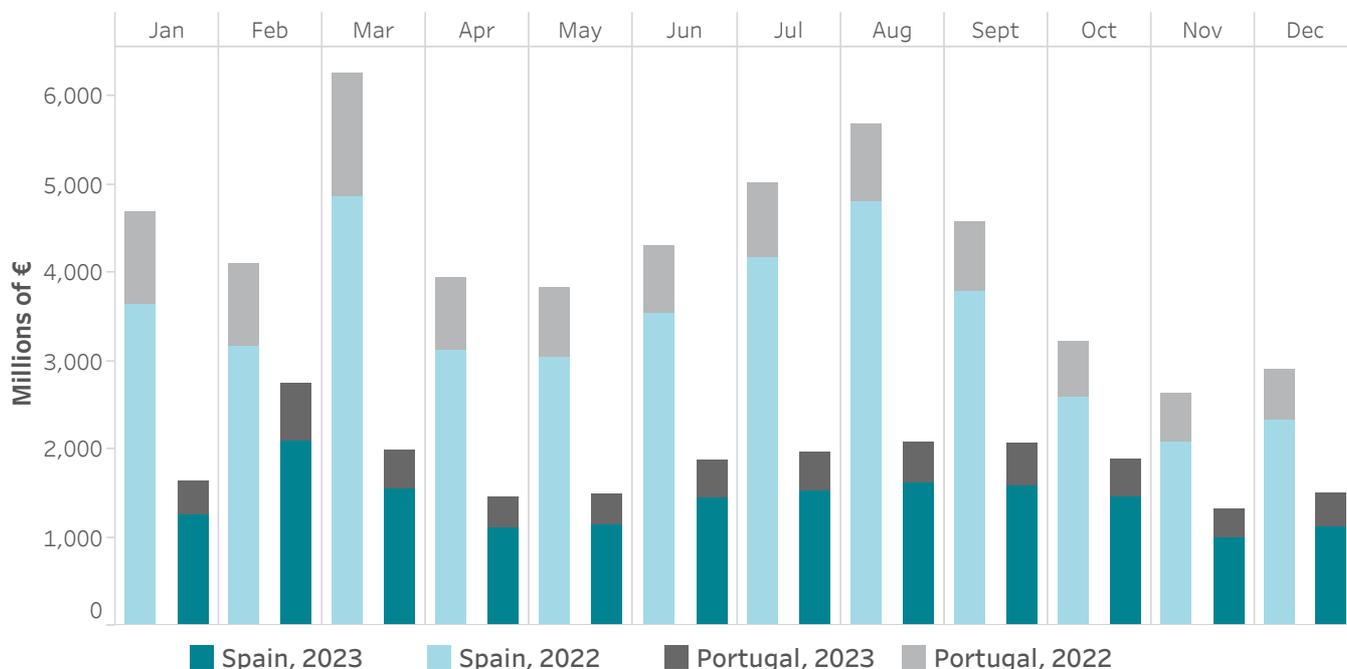
Economic market results

- Economic purchase volume on the MIBEL
- Congestion economic management
- Final price components



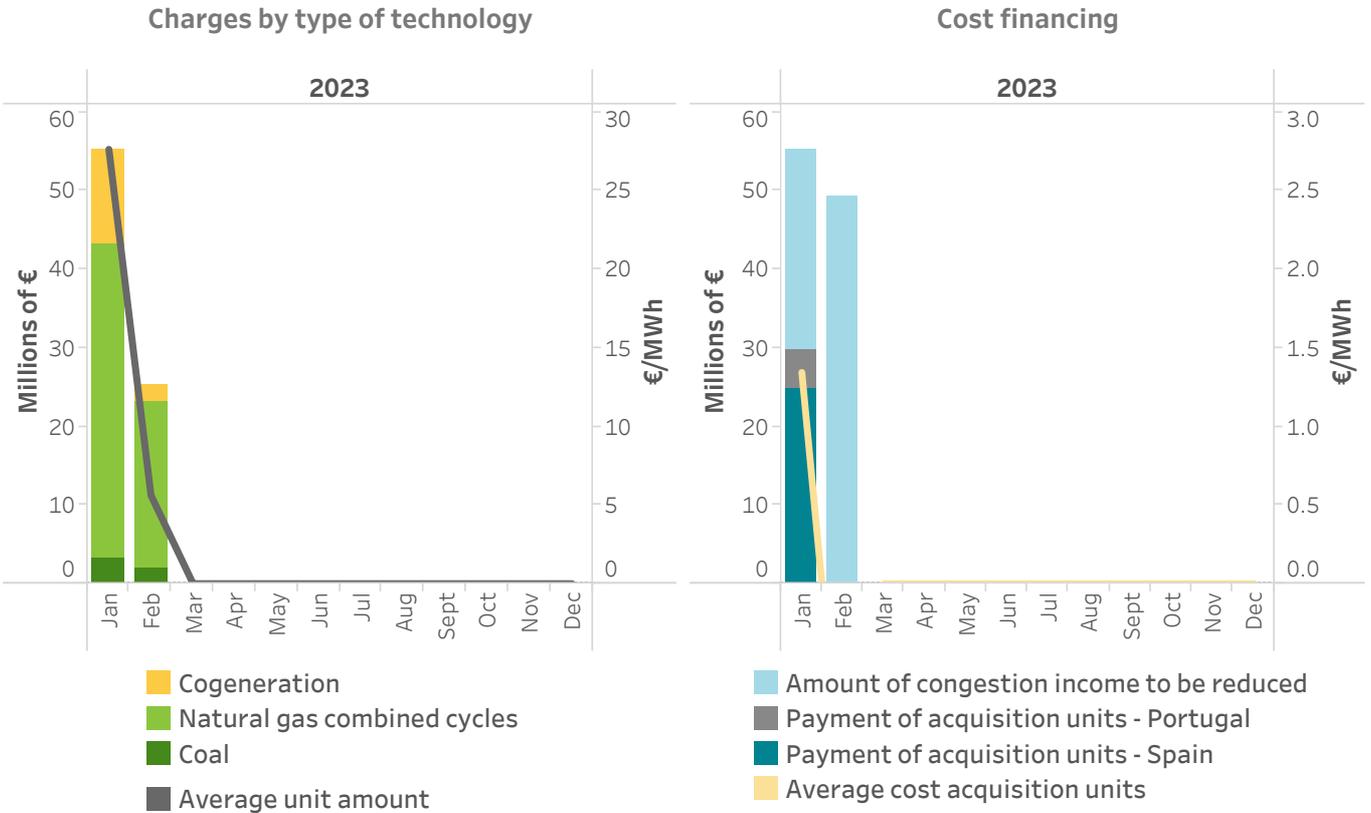
4.1 Economic volume of the purchases negotiated on the MIBEL (Millions of €)

The Spanish area includes exports across the borders with France, Morocco and Andorra.

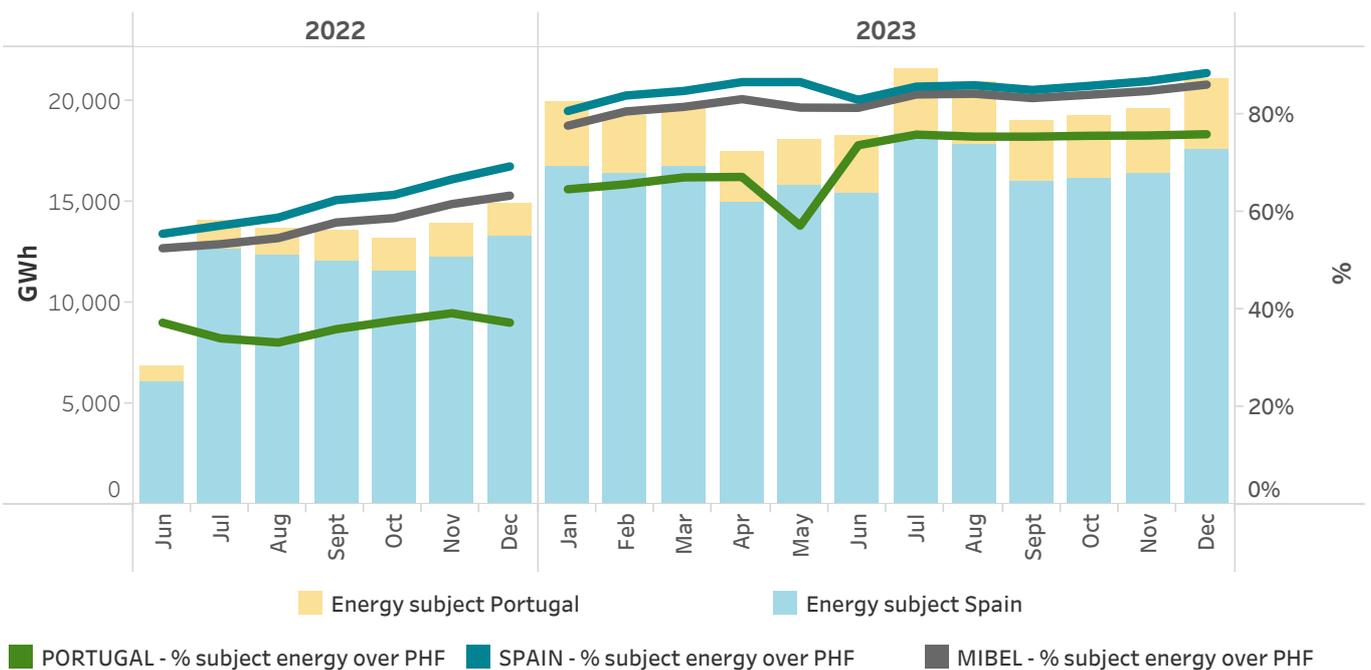


Economic volume (Millions of €)											
Month	Spain					Portugal					Total
	Day-ahead market	Intraday auctions market	Continu. intraday market	Adjustm. mechanism	Total Country	Day-ahead market	Intraday auctions market	Continu. intraday market	Adjustm. mechanism	Total Country	
Jan	982	195	39	39	1,255	350	27	5	7	390	1,645
Feb	1,690	311	68	23	2,093	574	64	7	4	649	2,741
Mar	1,200	251	91	0	1,541	403	35	6	0	444	1,985
Apr	851	195	68	0	1,113	290	33	4	0	327	1,440
May	878	208	57	0	1,143	302	31	4	0	337	1,480
Jun	1,137	243	74	0	1,454	374	32	6	0	413	1,866
Jul	1,228	234	60	0	1,522	396	40	7	0	443	1,965
Aug	1,285	260	73	0	1,618	406	42	9	0	456	2,074
Sept	1,236	277	67	0	1,580	424	41	7	0	472	2,052
Oct	1,150	254	58	0	1,462	376	46	6	0	427	1,890
Nov	771	174	53	0	998	278	26	4	0	308	1,306
Dec	897	194	41	0	1,132	347	30	5	0	382	1,514
Year 2023	13,306	2,795	749	63	16,913	4,521	447	68	11	5,047	21,959

4.2 Monthly settlement of the adjustment mechanism

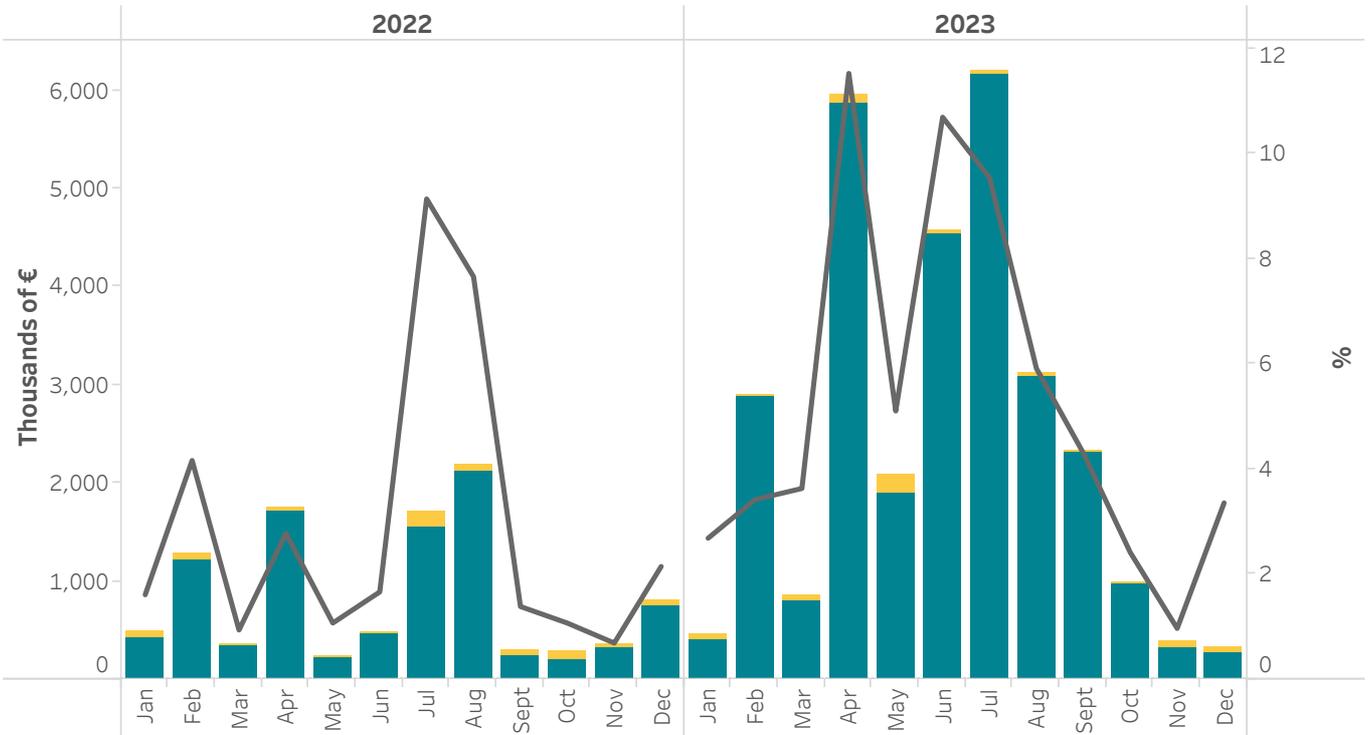


4.3 Monthly evolution of energy subject to the adjustment mechanism in OMIE settlements

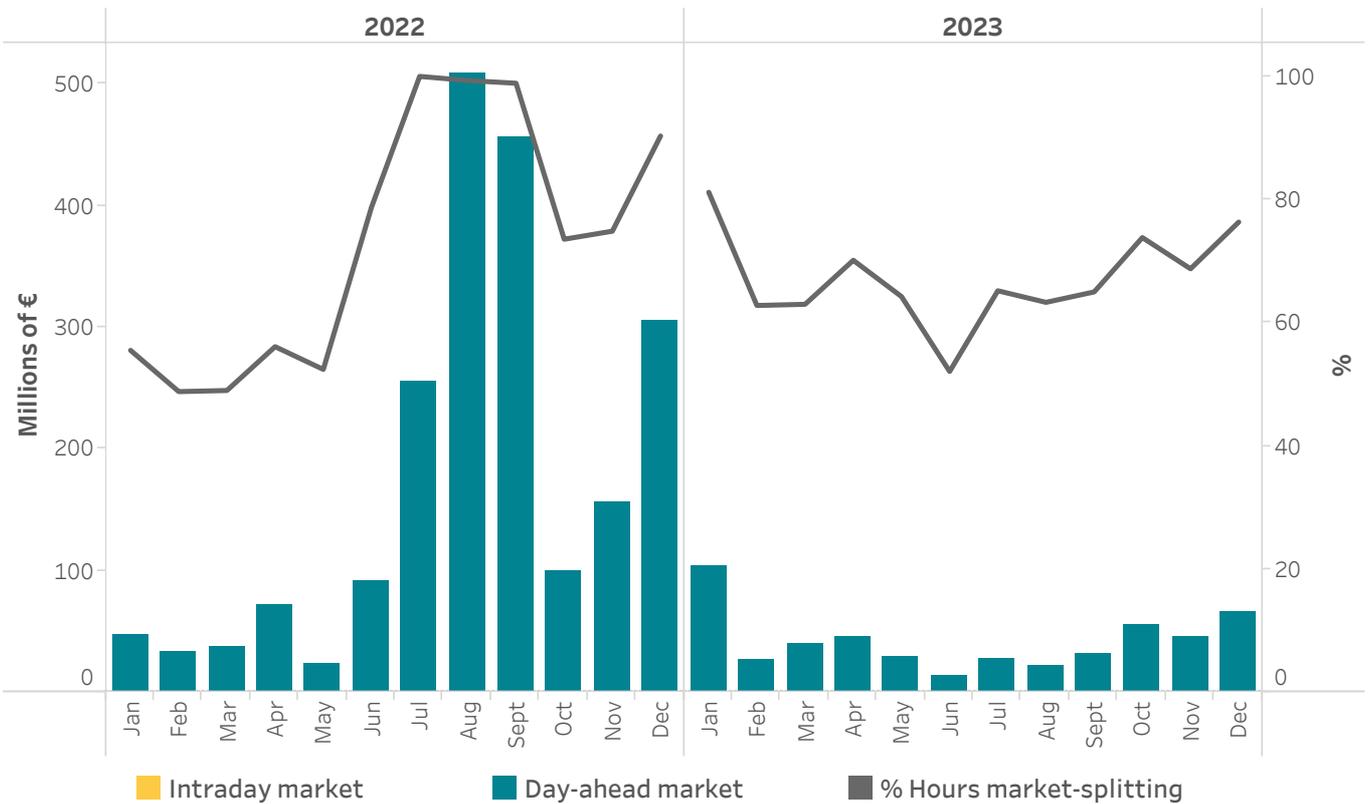


4.4 Congestion income

Spanish-Portuguese interconnection

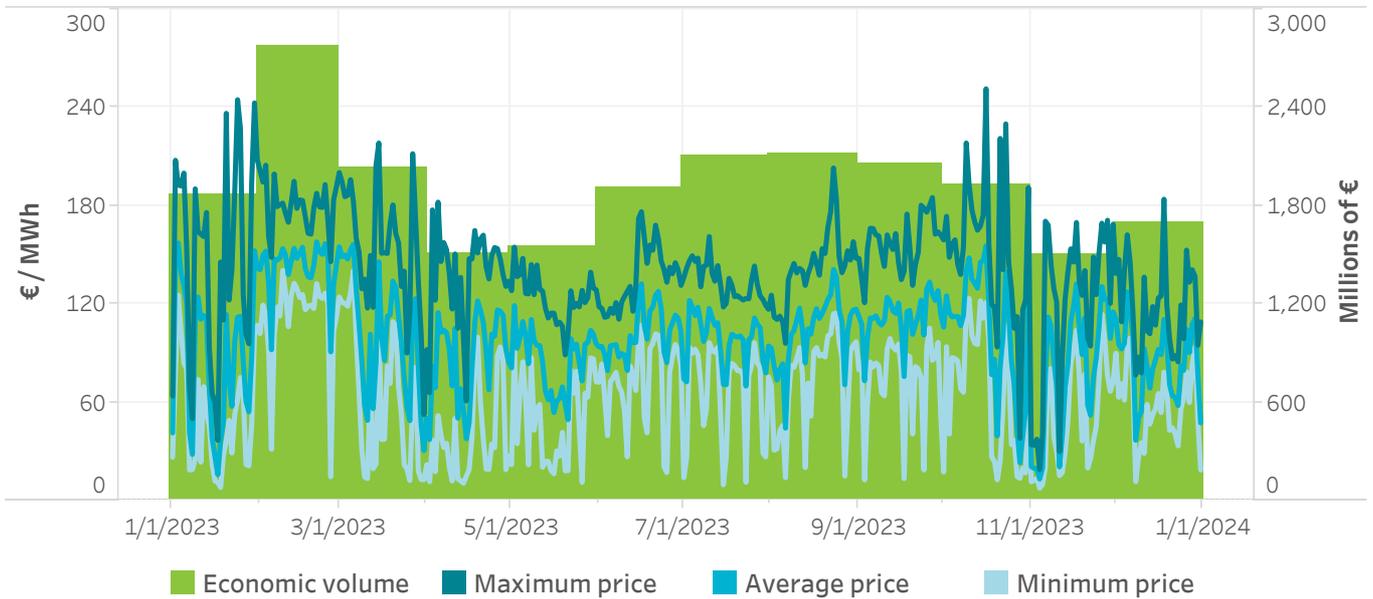


Spanish-French interconnection

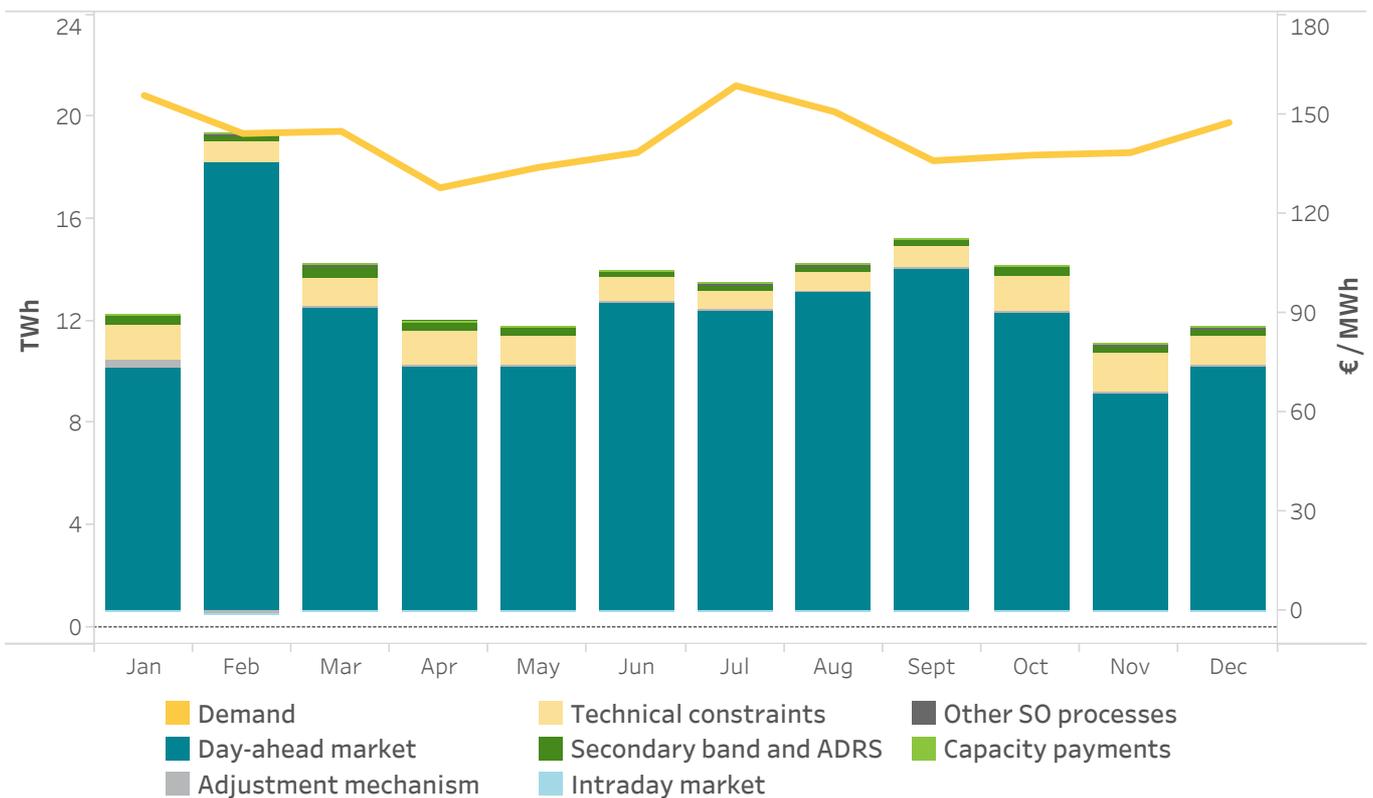


■ Intraday market
 ■ Day-ahead market
 ■ % Hours market-splitting

4.5 Final average price and economic volume of the Spanish electricity system - National demand



4.6 Components of the final average price of the Spanish electricity system - National demand



4.7 Components of the final average price of the Spanish electricity system (€/MWh)

	Reference retailers		Free market		National demand	
	€/MWh	%	€/MWh	%	€/MWh	%
Day-ahead market	88.88	87.65	88.98	88.90	88.97	88.79
Adjustment mechanism	0.22	0.22	0.20	0.20	0.20	0.20
Constraints	8.40	8.28	8.23	8.22	8.25	8.23
Secondary band and ADRS	2.68	2.65	2.29	2.29	2.32	2.32
Intraday market	-0.01	-0.01	-0.11	-0.11	-0.10	-0.10
Other SO processes	0.90	0.89	0.26	0.26	0.32	0.31
Capacity payments	0.32	0.32	0.23	0.23	0.24	0.24
Total	101.41	100.00	100.09	100.00	100.20	100.00

National demand (€/MWh)

Month	Day-ahead market	Technical constraints	Adjustment mechanism	Secondary band and ADRS	Intraday market	Other SO processes	Capacity payments	Average final price
January	73.17	10.36	2.90	2.63	-0.08	0.35	0.34	89.65
February	135.50	6.57	-0.71	1.68	-0.08	0.11	0.35	143.42
March	92.01	8.85	0.00	2.98	-0.17	0.54	0.24	104.46
April	74.33	10.12	0.00	3.05	-0.27	0.13	0.16	87.52
May	74.35	8.42	0.00	2.94	-0.12	0.22	0.17	85.99
June	93.67	7.05	0.00	2.04	-0.05	0.02	0.19	102.93
July	90.96	5.78	0.00	2.14	-0.07	0.03	0.33	99.18
August	96.87	5.46	0.00	1.98	-0.05	0.24	0.20	104.68
September	104.03	6.19	0.00	1.71	-0.08	0.47	0.18	112.51
October	90.76	10.51	0.00	2.74	-0.12	0.34	0.17	104.40
November	66.12	11.59	0.00	2.18	-0.07	0.80	0.23	80.85
December	74.48	8.54	0.00	1.94	-0.08	0.54	0.29	85.72

Year	Day-ahead market	Technical constraints	Adjustment mechanism	Secondary band and ADRS	Intraday market	Other SO processes	Capacity payments	Average final price
2022	170.41	4.68	26.47	2.36	-0.20	0.28	0.33	204.33
2023	88.97	8.25	0.20	2.32	-0.10	0.32	0.24	100.20

Free market (€/MWh)

Month	Day-ahead market	Technical constraints	Adjustment mechanism	Secondary band and ADRS	Intraday market	Other SO processes	Capacity payments	Average final price
January	73.13	10.33	2.88	2.57	-0.09	0.33	0.34	89.49
February	135.52	6.55	-0.68	1.61	-0.09	0.04	0.35	143.31
March	91.77	8.86	0.00	2.95	-0.18	0.44	0.23	104.06
April	74.46	10.09	0.00	3.02	-0.29	0.06	0.15	87.49
May	74.40	8.41	0.00	2.91	-0.12	0.16	0.16	85.91
June	93.72	7.05	0.00	2.01	-0.06	-0.01	0.18	102.90
July	91.09	5.77	0.00	2.11	-0.07	-0.03	0.33	99.21
August	96.88	5.44	0.00	1.95	-0.06	0.16	0.18	104.55
September	104.08	6.17	0.00	1.65	-0.09	0.37	0.17	112.36
October	90.76	10.49	0.00	2.68	-0.13	0.30	0.16	104.26
November	66.01	11.59	0.00	2.18	-0.08	0.80	0.22	80.72
December	74.41	8.53	0.00	1.94	-0.09	0.54	0.29	85.64

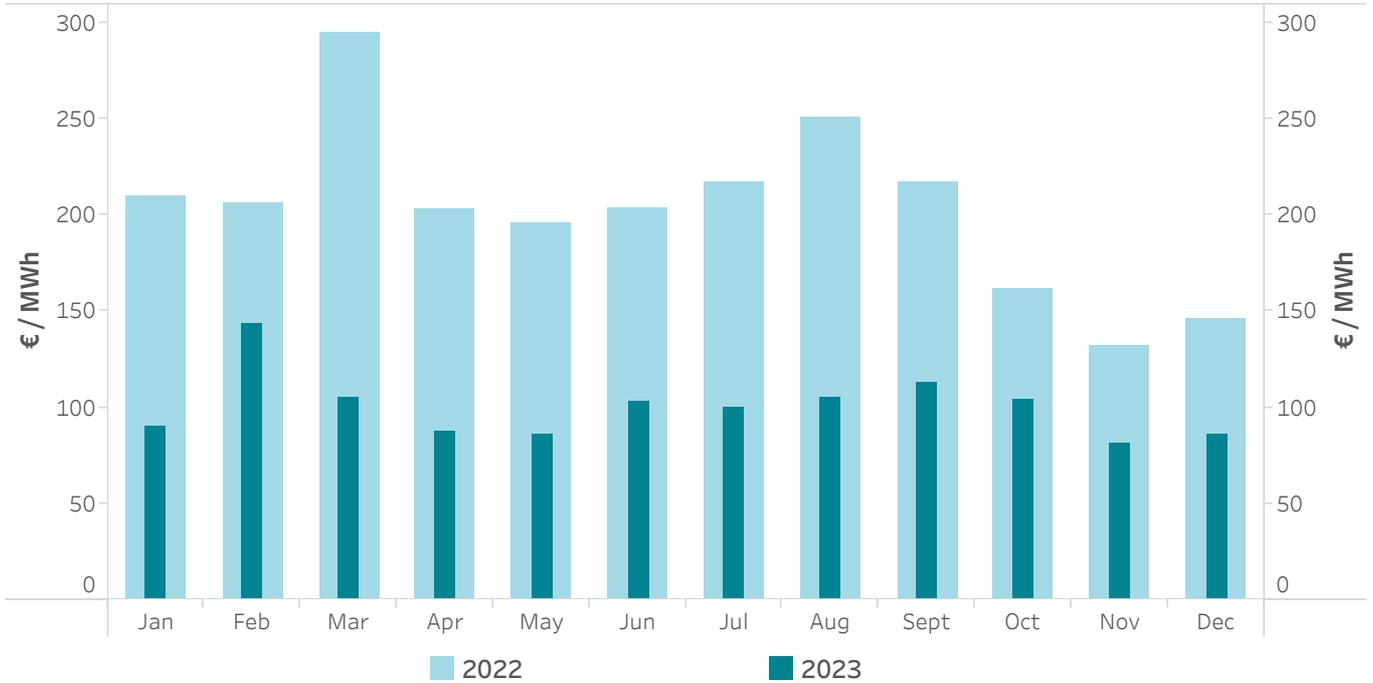
Year	Day-ahead market	Technical constraints	Adjustment mechanism	Secondary band and ADRS	Intraday market	Other SO processes	Capacity payments	Average final price
2022	170.08	4.68	25.17	2.35	-0.22	0.22	0.32	202.60
2023	88.98	8.23	0.20	2.29	-0.11	0.26	0.23	100.09

Reference retailers (€/MWh)

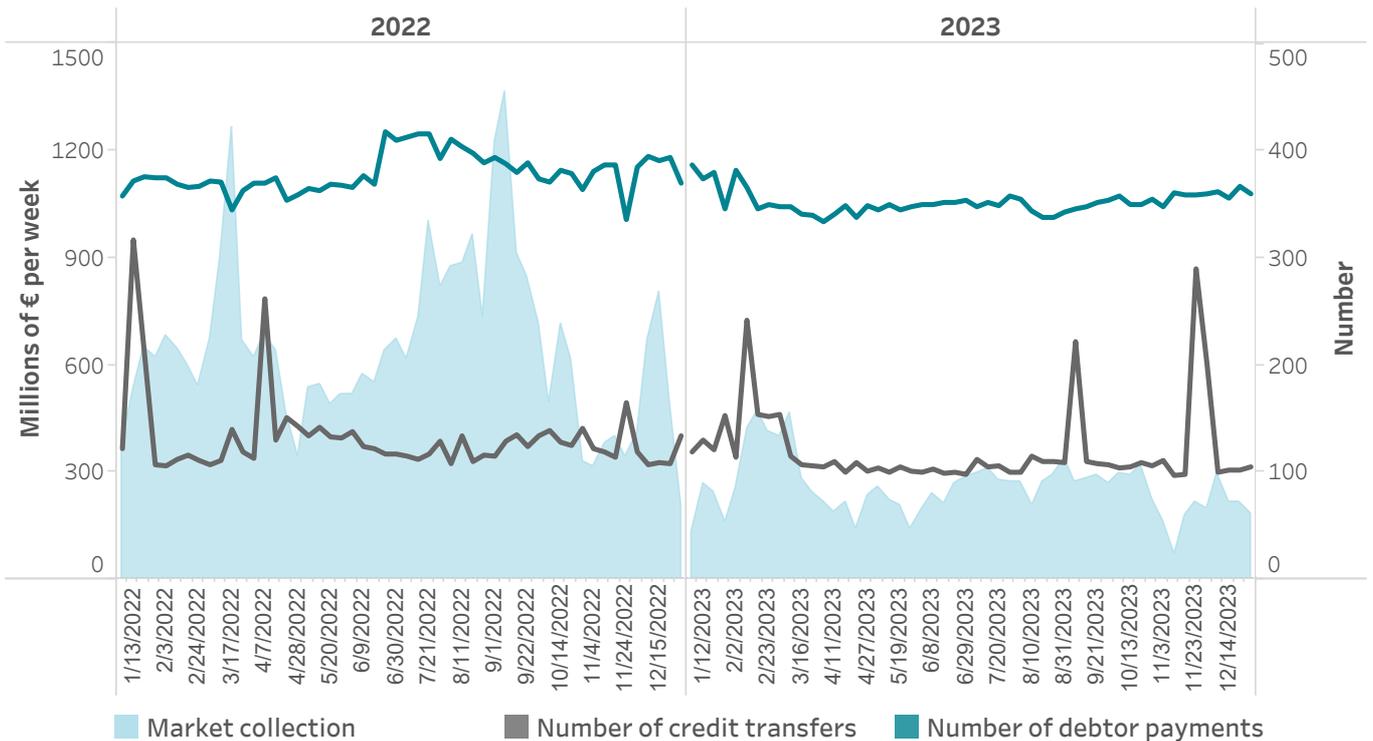
Month	Day-ahead market	Technical constraints	Adjustment mechanism	Secondary band and ADRS	Intraday market	Other SO processes	Capacity payments	Average final price
January	73.53	10.60	3.07	3.14	-0.01	0.50	0.33	91.17
February	135.33	6.75	-0.97	2.34	-0.01	0.74	0.35	144.52
March	94.73	8.80	0.00	3.32	-0.01	1.69	0.35	108.88
April	72.70	10.42	0.00	3.43	-0.02	1.04	0.30	87.87
May	73.72	8.54	0.00	3.37	-0.01	0.98	0.32	86.92
June	93.07	7.12	0.00	2.40	0.00	0.47	0.33	103.39
July	89.48	5.95	0.00	2.50	0.00	0.63	0.31	98.87
August	96.73	5.63	0.00	2.26	0.01	1.10	0.32	106.05
September	103.43	6.42	0.00	2.51	-0.01	1.73	0.32	114.40
October	90.76	10.70	0.00	3.42	0.00	0.86	0.32	106.06
November	67.30	11.63	0.00	2.11	-0.01	0.86	0.34	82.23
December	75.08	8.58	0.00	1.90	0.01	0.56	0.29	86.42

Year	Day-ahead market	Technical constraints	Adjustment mechanism	Secondary band and ADRS	Intraday market	Other SO processes	Capacity payments	Average final price
2022	173.87	4.73	40.15	2.43	0.00	1.01	0.43	222.63
2023	88.88	8.40	0.22	2.68	-0.01	0.90	0.32	101.41

4.8 Final average price of the Spanish electricity system - National demand



4.9 Tendency of collections on the market



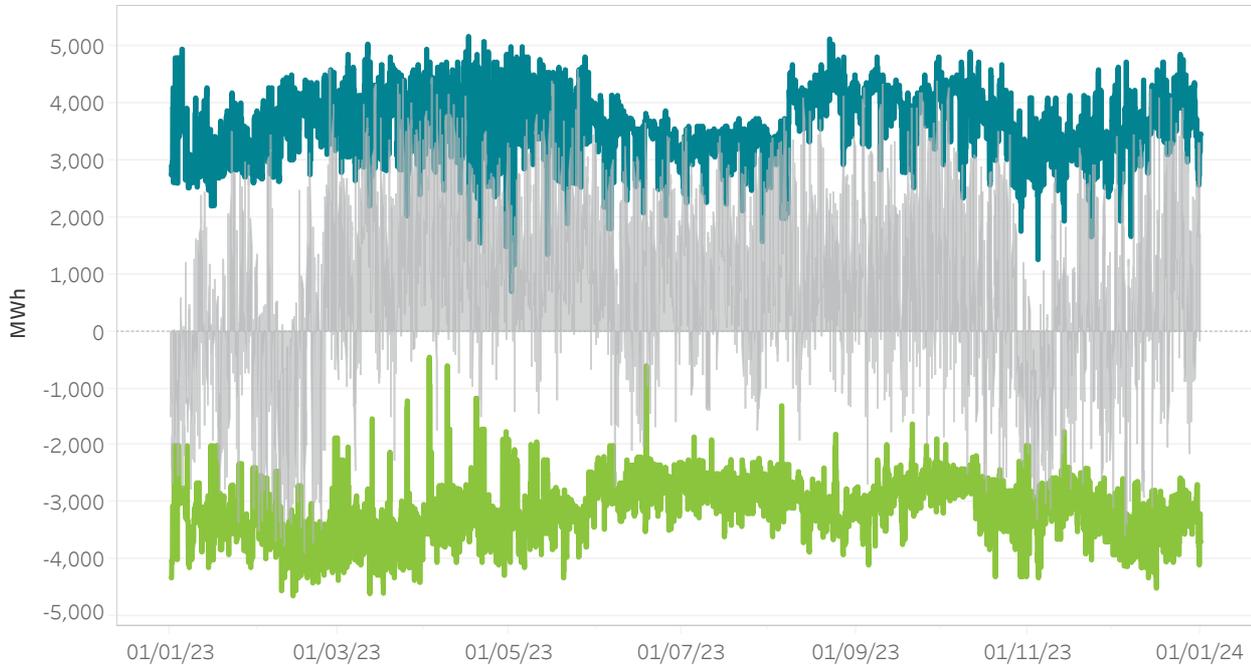
5.

International exchanges

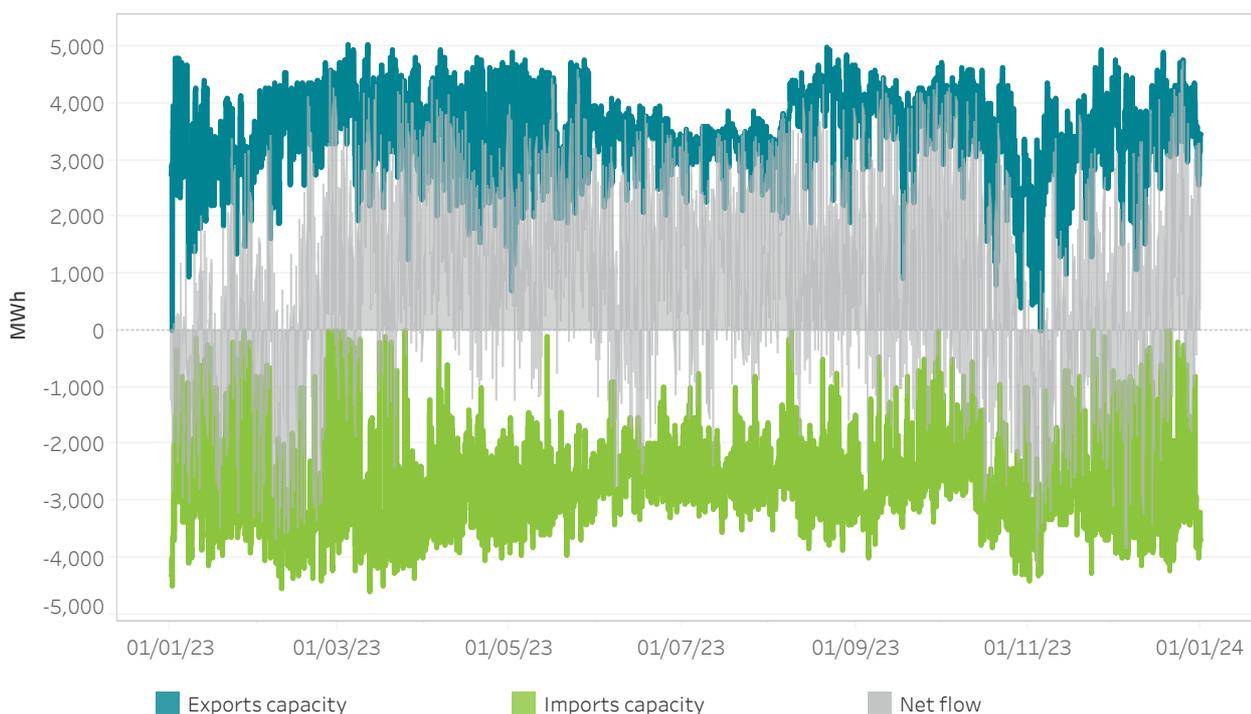
- Interconnector flows after the day-ahead market and the intraday continuous market
- Market coupling
- Economic volumes exchanged in the MIBEL



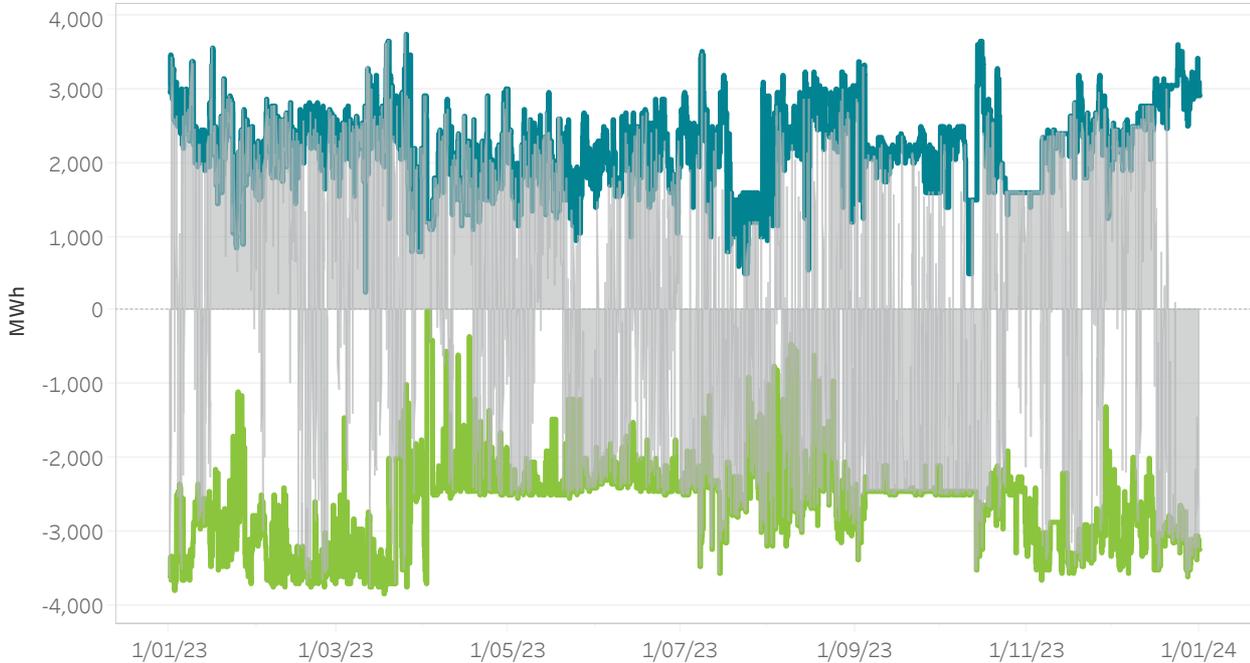
5.1 Interconnection flow and capacity with Portugal in the day-ahead operations program (Programa diario base de funcionamiento, PDBF)



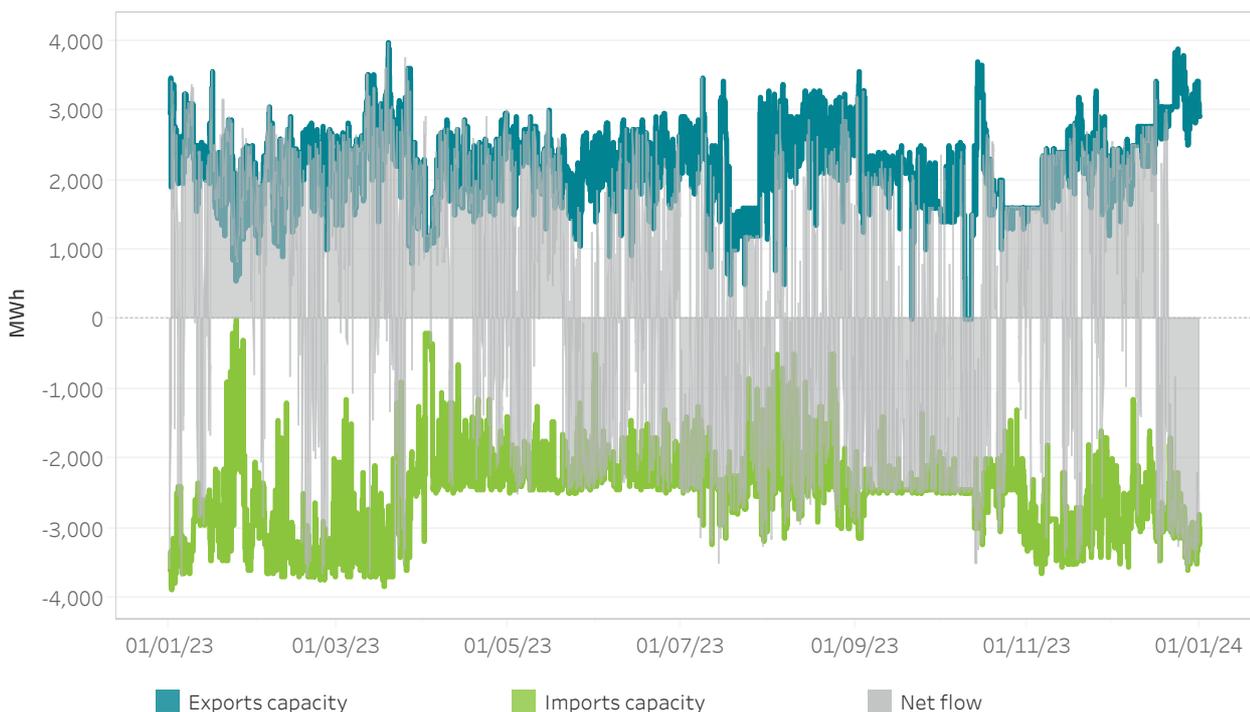
5.2 Interconnection flow and capacidad with Portugal in the final hourly program (Programa horario final, PHFC) after the continuous market



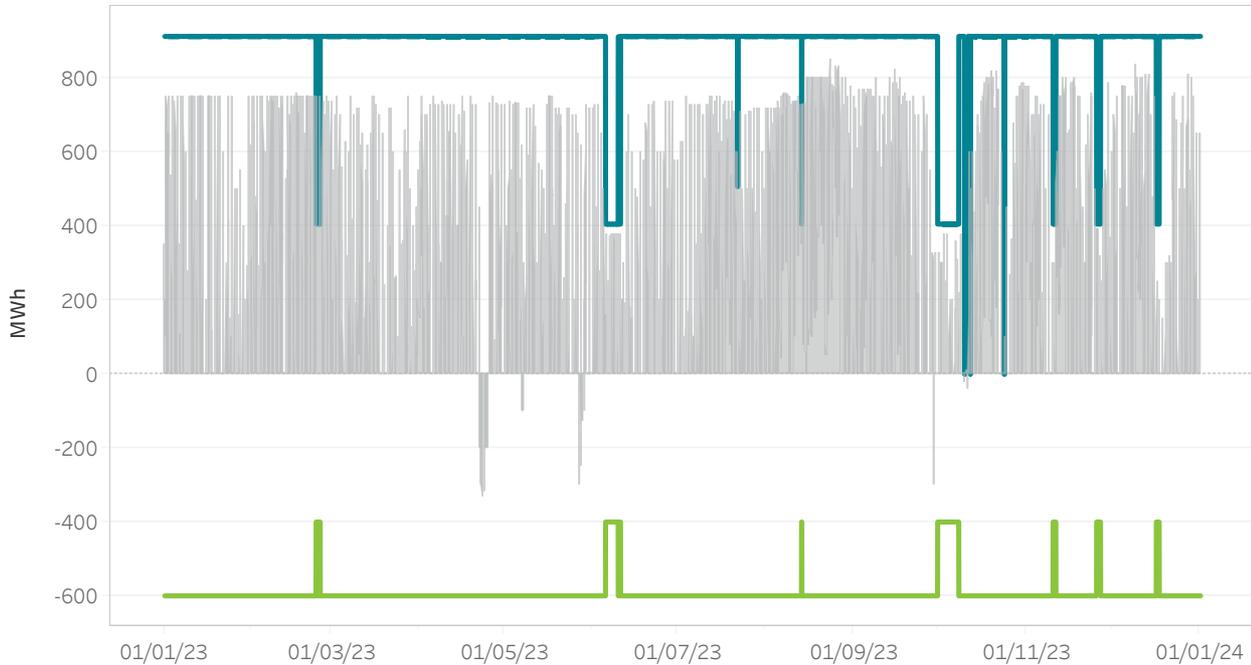
5.3 Interconnection flow and capacity with France in the day-ahead operations program (Programa diario base de funcionamiento, PDBF)



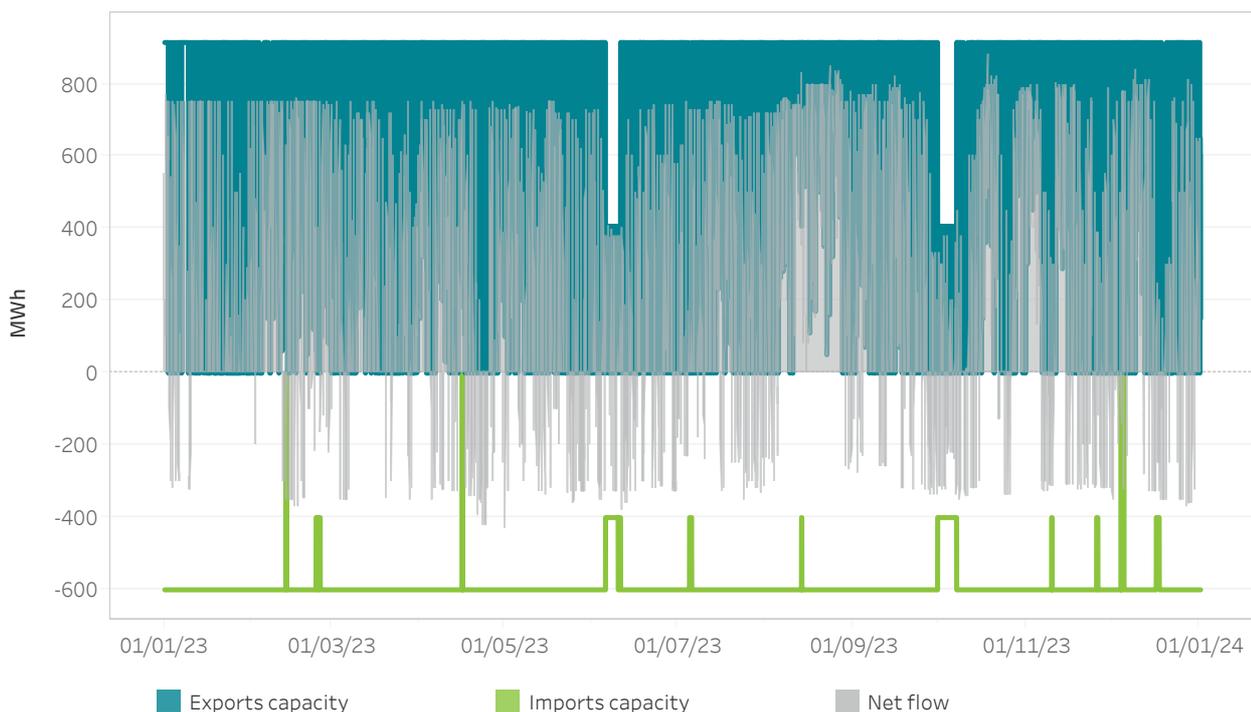
5.4 Interconnection flow and capacidad with France in the final hourly program (Programa horario final, PHFC) after the continuous market



5.5 Interconnection flow and capacity with Morocco in the day-ahead operations program (Programa diario base de funcionamiento, PDBF)

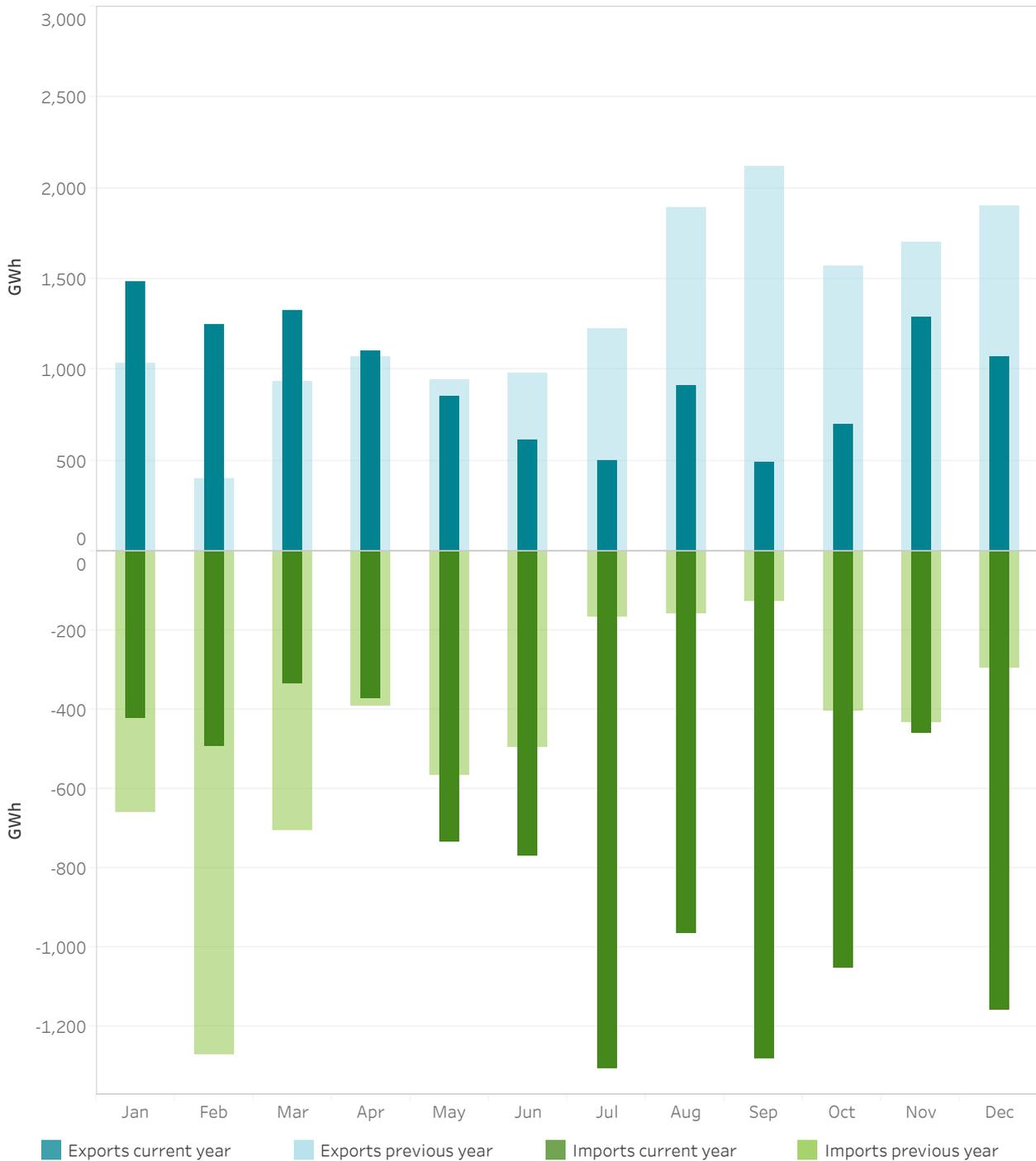


5.6 Interconnection flow and capacidad with Morocco in the final hourly program (Programa horario final, PHFC) after the continuous market



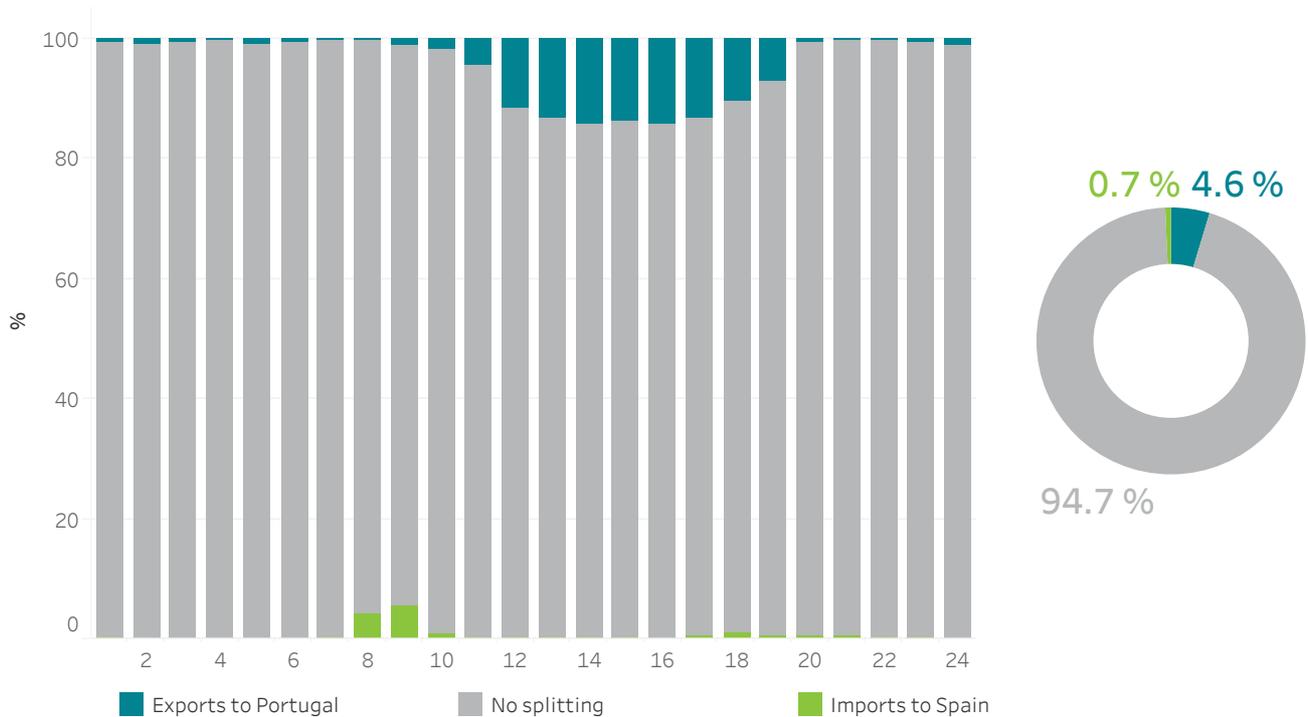
5.7 Total exports and imports MIBEL

	2023	2022
Exports [GWh]	11,570.0	15,763.4
Imports [GWh]	9,348.7	5,659.0



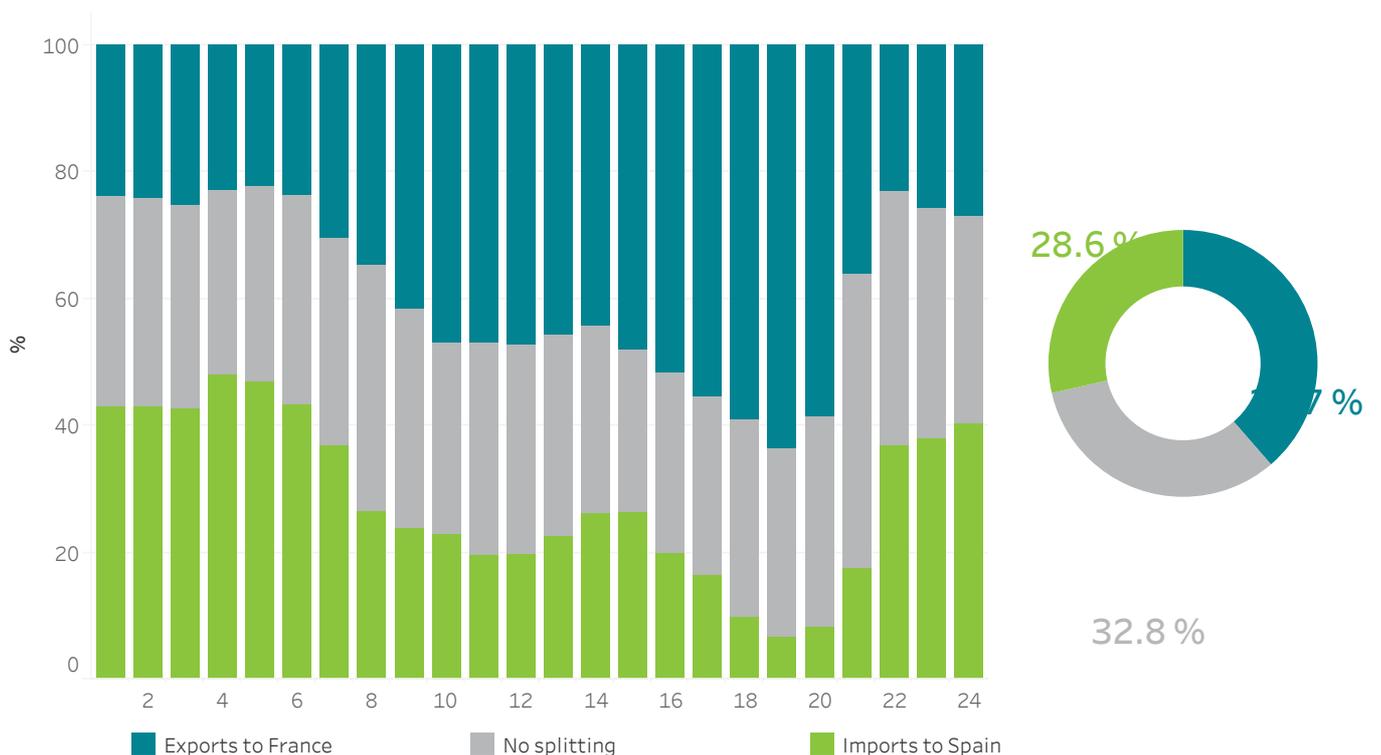
5.8 Market coupling on the Spain/Portugal border

The circular graph indicates the percentage, over the total number of periods, of the market coupling and, where there is no coupling, the flow of the interconnection. The bar graph breaks down this data by period.



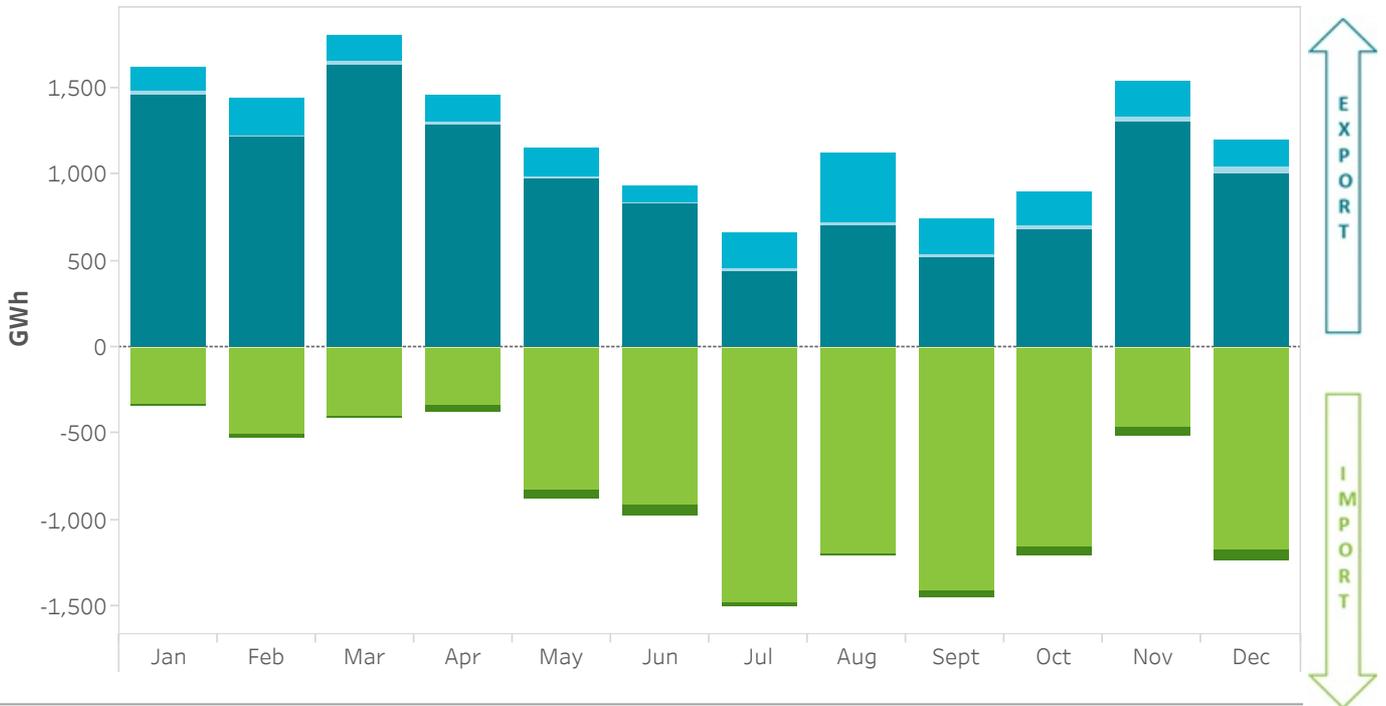
5.9 Market coupling on the Spain/France border

The circular graph indicates the percentage, over the total number of periods, of the market coupling and, where there is no coupling, the flow of the interconnection. The bar graph breaks down this data by period.



5.10 Monthly energies exchanged on the MIBEL borders

The graph represents the energy imported and exported in the markets managed by OMIE.



5.11 Monthly economic volumes exchanged on the MIBEL borders

The graph represents the economic volume of imports and exports in the markets managed by OMIE.



■ Export - Morocco ■ Export- France ■ Import - Andorra
■ Export- Andorra ■ Import - Morocco ■ Import - France

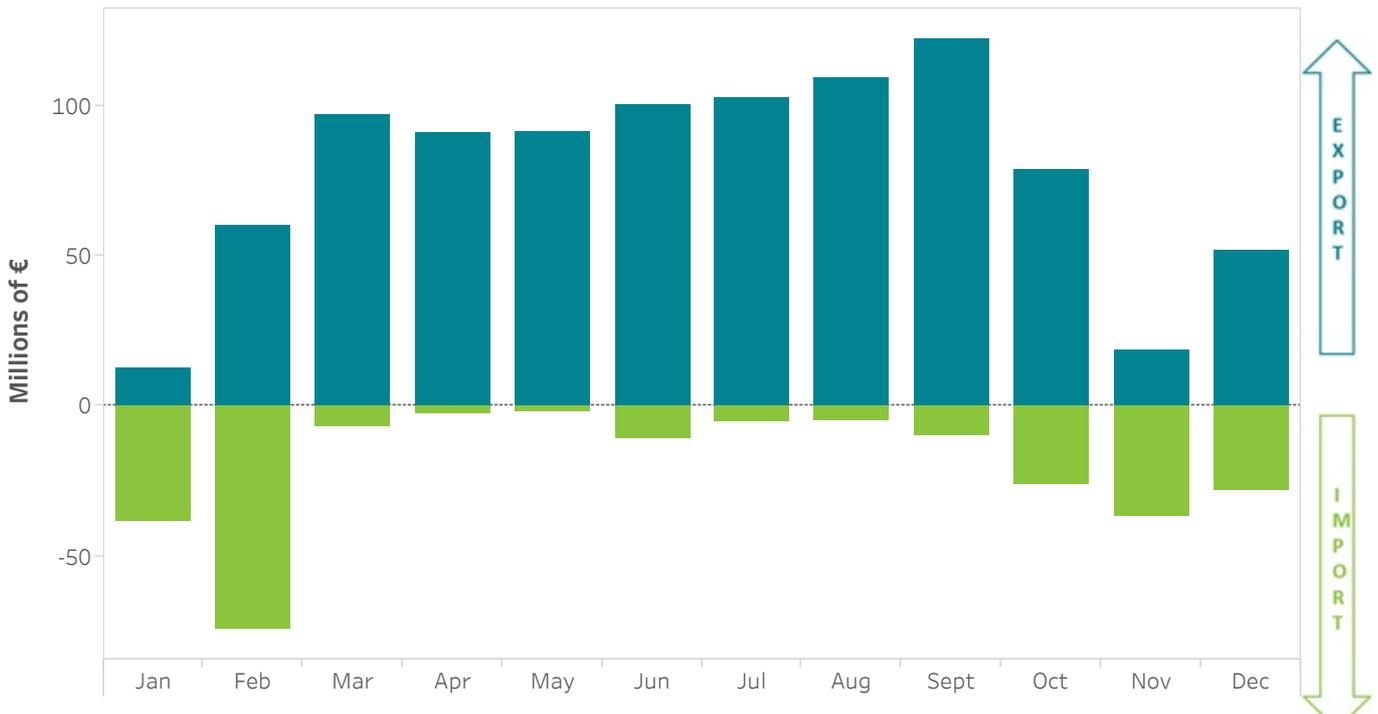
5.12 Monthly energies exchanged on the border with Portugal

The graph represents the energy imported and exported in the markets managed by OMIE.



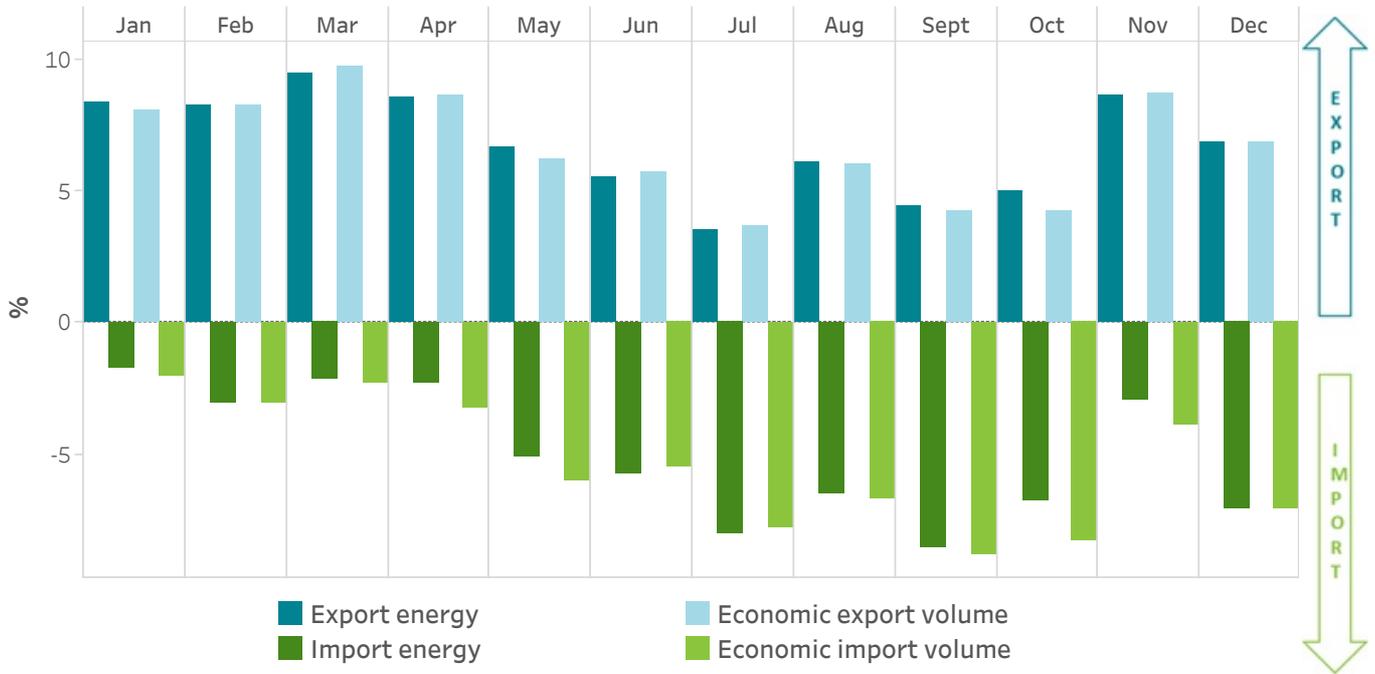
5.13 Monthly economic volumes exchanged on the border with Portugal

The graph represents the economic volume of imports and exports in the markets managed by OMIE.

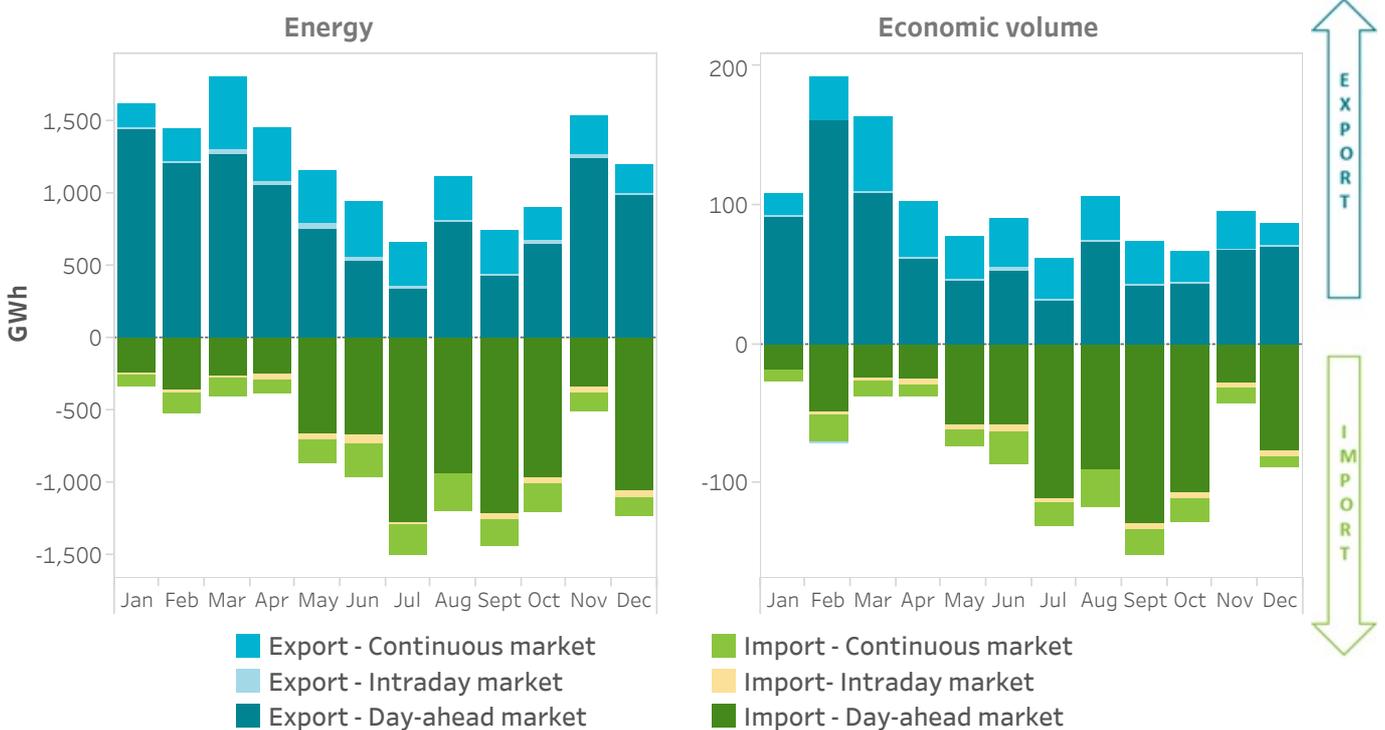


5.14 Impact of imports and exports on the MIBEL on market demand

The graph represents the ratio between energy (or economic volume) of imports or exports on markets managed by OMIE and demand (or economic volume) negotiated on those markets.



5.15 International electricity exchanges by market



6.

International markets

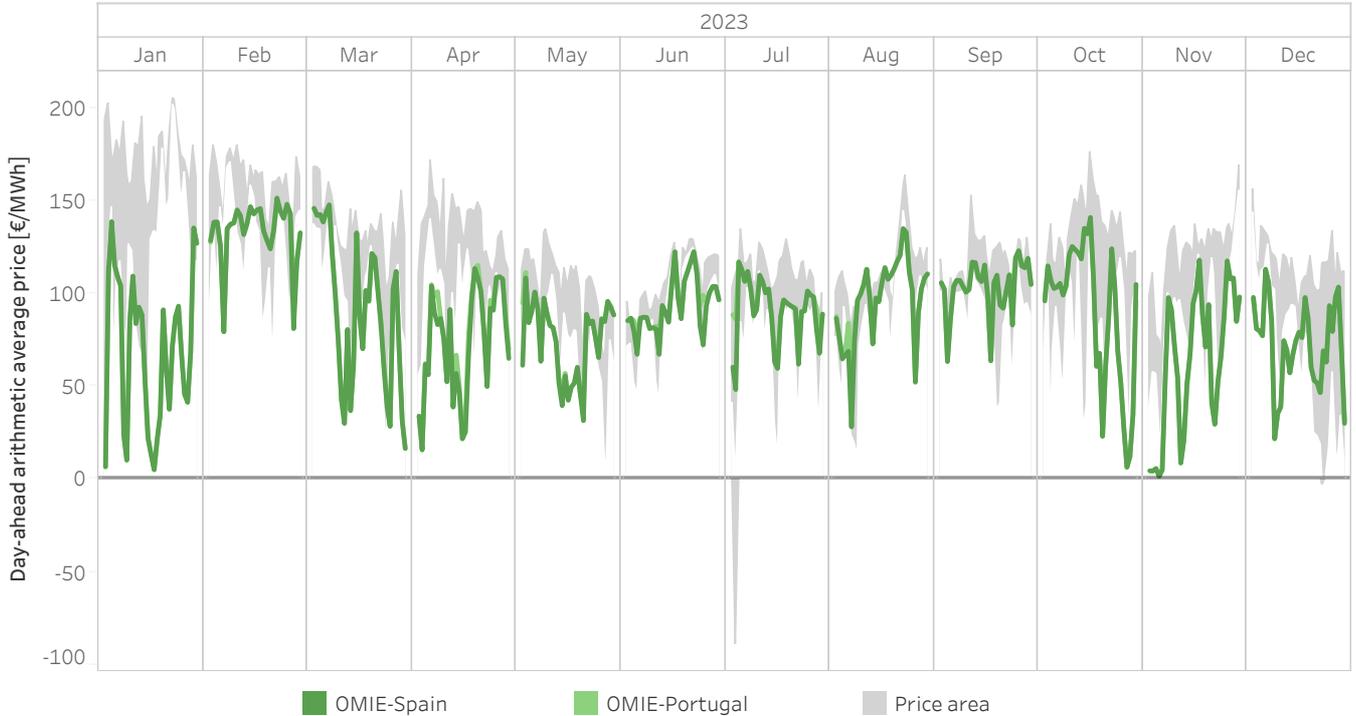
- Prices and energy in the international markets
- Maps



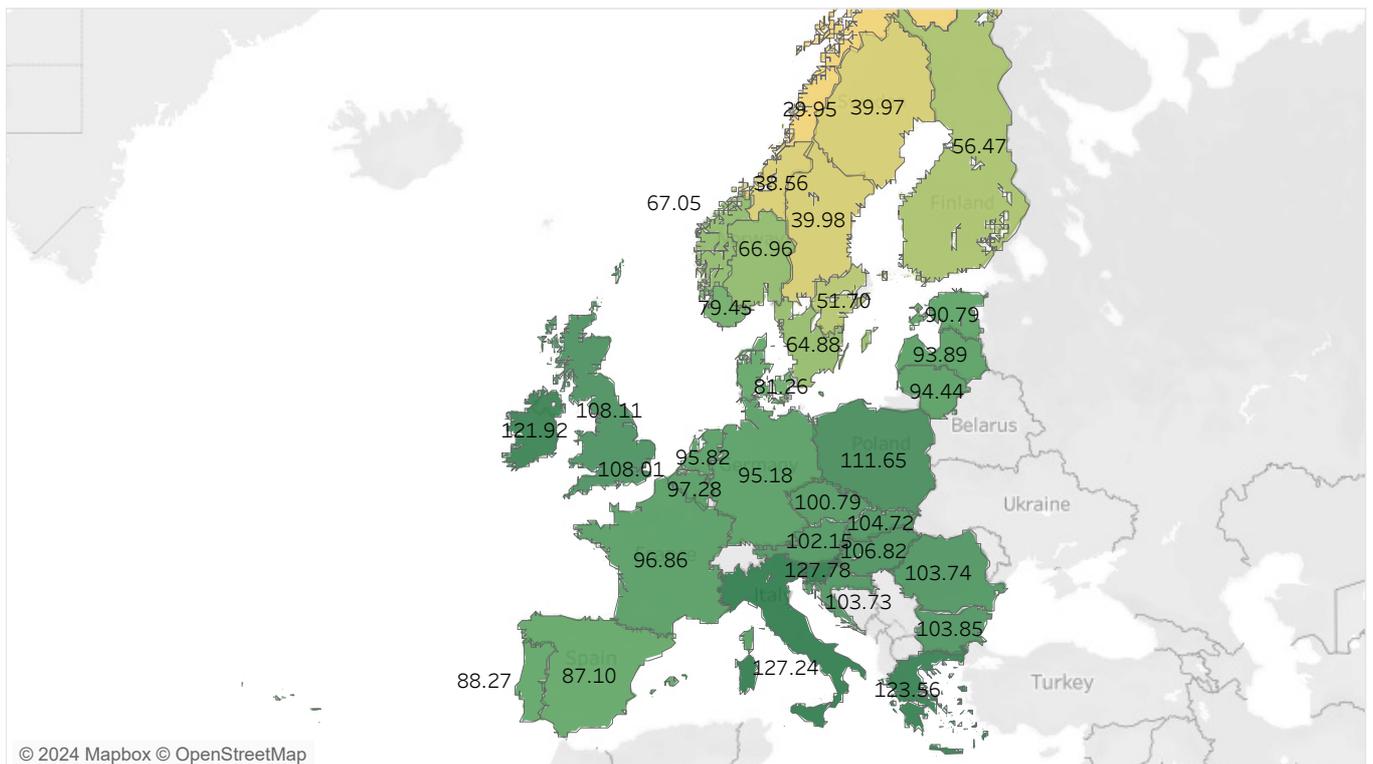
6.1 Day-ahead average prices of the main European market operators

Spain and Portugal

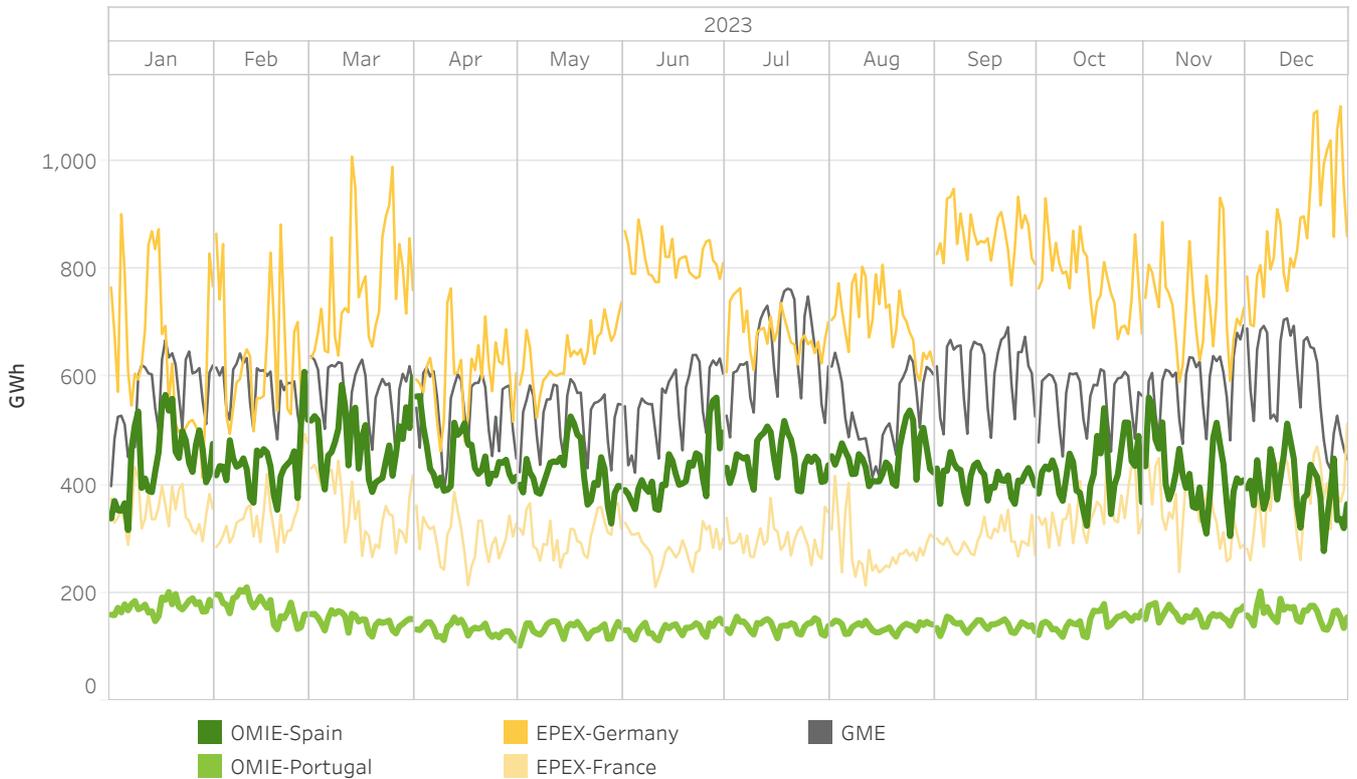
The "Price area" shows the difference between the maximum and the minimum day-ahead average price between the following markets: EPEX-Germany, EPEX-France, EPEX-Netherlands and GME.



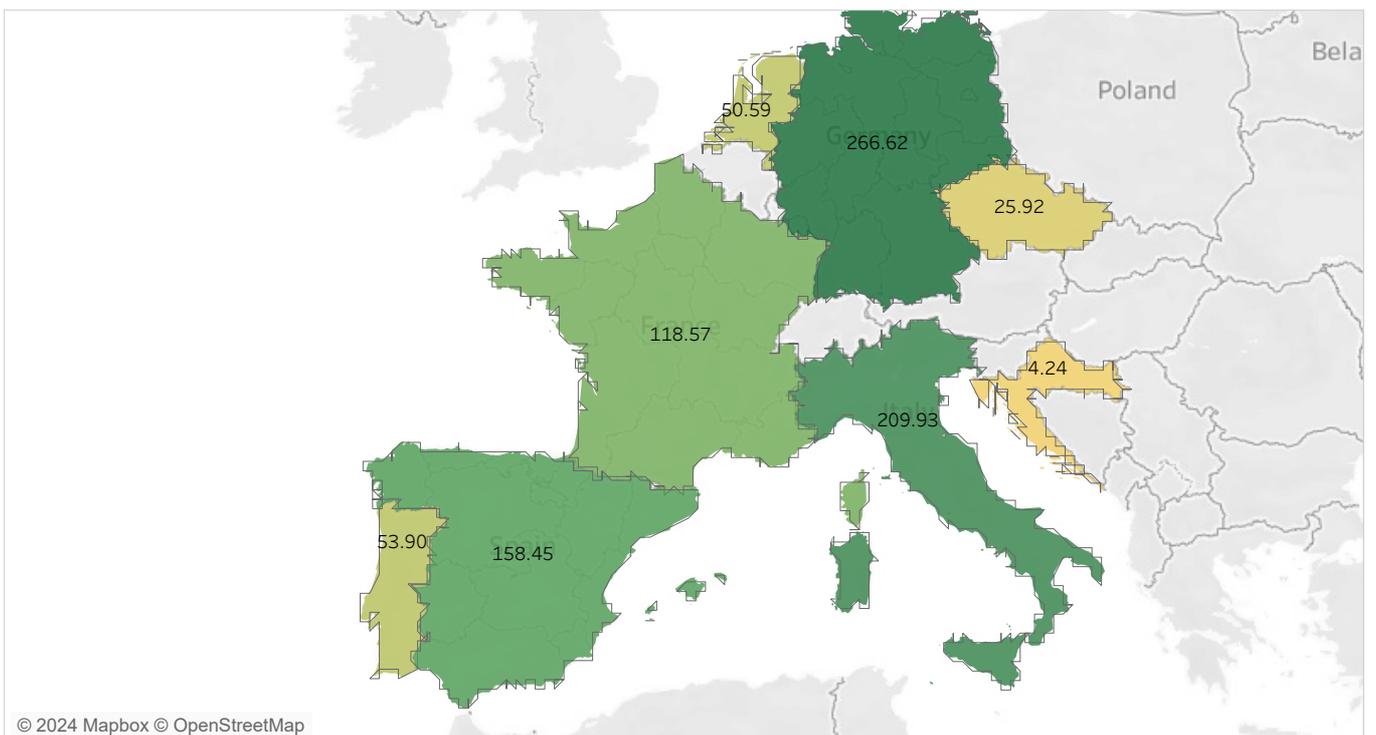
6.2 Average prices in the European price areas for 2023 in €/MWh



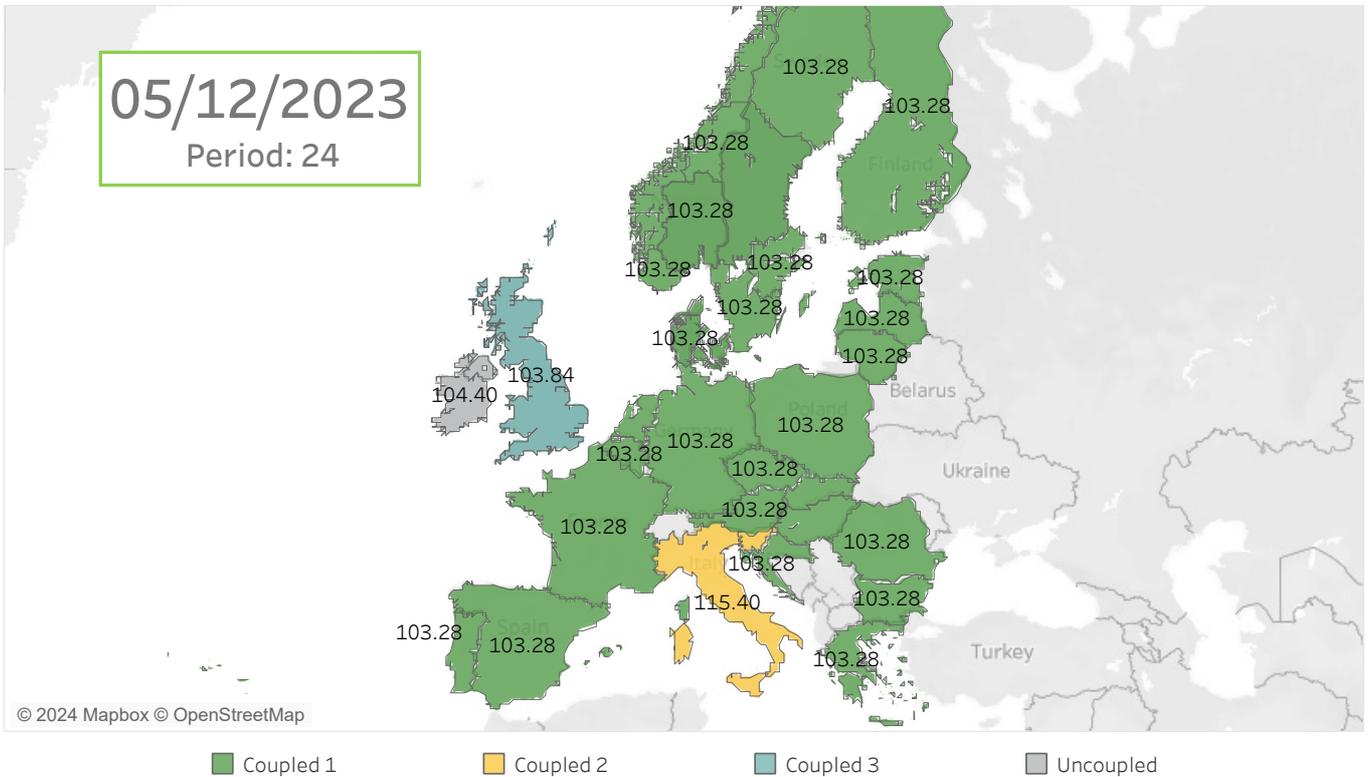
6.3 Day-ahead energy negotiated by the main European market operators



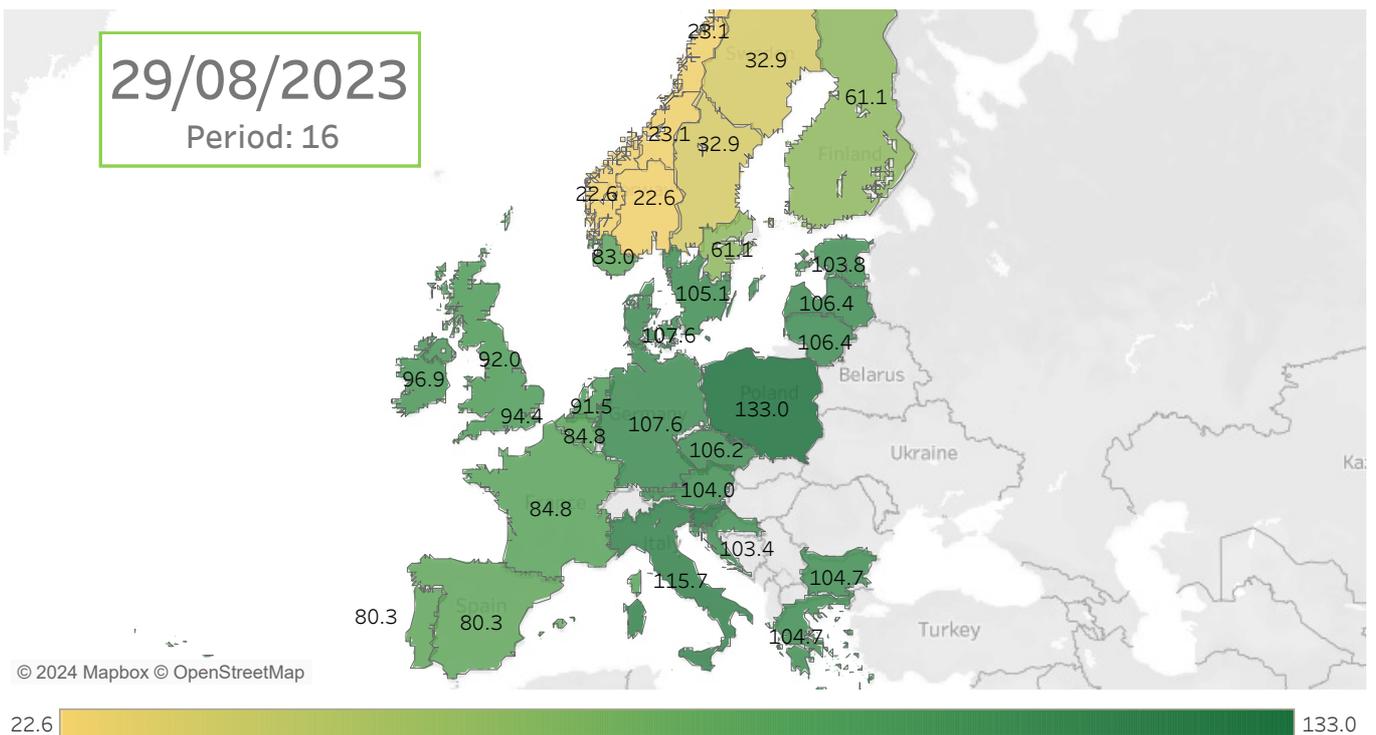
6.4 Energy in the main European price areas for 2023 in TWh



6.7 Period of maximum price coupling [€/MWh] in the main European market operators for 2023



6.8 Period of minimum price coupling [€/MWh] in the main European market operators for 2023



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Appendix

- Day-ahead market
- Intraday auction market
- Intraday continuous market



Day-ahead market

The day-ahead market, as an integral part of the electrical energy production market, aims to carry out electrical energy transactions for the next day by presenting bids for sales and acquisition of electrical energy on behalf of market agents.

The day-ahead market is managed by the European market operators: OMIE, EPEX SPOT, GME, Nord Pool Spot, TGE, OPCOM and OTE through the PCR project. The purpose of this project is the implementation of a system of market couplings that calculates the prices of electricity across Europe, and that enables assigning the cross-border capacity on short-term markets.

The day-ahead market's resulting program is the Daily Matching Base Program (Programa Diario Base de Casación, PDBC). The system operator incorporates the bilateral contracts declared on the system operator into this program, and the resulting program is the Daily Operations Base Program (Programa diario base de funcionamiento, PDBF). Finally, once the system operator has applied the technical restrictions to the PDBF, the resulting program is the Definitive Viable Daily Program (Programa Diario Viable Definitivo, PDVD).

Intraday market

The intraday markets are an important tool for market agents to be able to adjust their resulting program from the daily market through the presentation of energy sales and acquisition bids, in accordance with the needs that they anticipate in real-time. The importance of some efficient intraday markets has increased in the last few years, as a result of the ever-growing capacity of intermittent generation.

Intraday Auction Market

The intraday auction market aims to attend to the adjustments to the Definitive Viable Daily Program (Programa Diario Viable Definitivo, PDVD) through the presentation of bids for sales and acquisition of electrical energy on behalf of market agents, who programming basis is the result of the day-ahead market.

The intraday auction market is currently structured into six sessions with different programming horizons for each session, and it manages the price areas of Portugal and Spain, and the free capacity of the following interconnections: Spain-Portugal, Spain-Morocco, and Spain-Andorra.

The resulting program of each session of the intraday auction market is the Basic Intraday Program for Incremental Matching (Programa Intradario Básico de Casación Incremental, PIBCI). Based on this program, the system operator publishes the resulting program, the Final Hourly Program (Programa horario final, PHF).

Intraday Continuous Market (XBID)

As with the intraday auction market, the continuous intraday market offers market agents the possibility of managing their energy imbalances with 2 fundamental differences with respect to the auction market:

- Agents may benefit from market liquidity at the regional level of Spain and Portugal and from the liquidity available on markets in other areas of Europe, as long as there is the capacity for cross-border transportation available between the zones.
- The adjustment may be made up to one hour before the time of energy delivery.

The intraday continuous market is managed by the market operators OMIE, EPEX spot, BSP and Nord Pool, responding to the needs of the market, who started the initiative called XBID Market Project to create an integrated cross-border European intraday market. The proposal of this project is to couple European intraday markets and allow the trade of energy between the different zones of Europe continually, increasing the global efficiency of the transactions on these markets at the European level. This initiative represents the Single Intraday Coupling (SIDC) solution that will enable the creation of an integrated European intraday market.

The resulting program from each round of the intraday continuous market is the Basic Intraday Program for Incremental Continuous Matching (Programa Intradario Básico de Casación Incremental Continuo, PIBCIC). Based on this program, the system operator publishes the resulting program called the Continuous Final Hourly Program (Programa Horario Final Continuo, PHFC).



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