



Evolution of  
the electricity  
market  
Annual report

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2020

## Annual report 2020 / Contents

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### Executive summary

1. Day-ahead market
2. Intraday auction market
3. Intraday continuous market
4. Economic results of the market
5. International exchanges
6. International markets

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# Annual report 2020

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## Executive summary / Market results

- ▶ During 2020, the total amount of energy negotiated on the day-ahead and intraday markets was 262 TWh, 2% less than that negotiated in 2019. of those 262 TWh, 225 TWh were negotiated on the day-ahead market and 37 TWh on the intraday markets.
- ▶ The average arithmetic price of the day-ahead market of the MIBEL was 33.96 €/MWh, 28.8% lower than that of 2019. The average price of the intraday auction market was slightly higher than the day-ahead, 34.48 €/MWh, and the weighted average price of the intraday continuous market was higher, 35.40 €/MWh.
- ▶ In 2020, the market shares in Spain for technology on the Daily Operations Base Program (Programa diario base de funcionamiento, PDBF) have highlighted the negligible supplies from coal thermal power units, with only 0.6%. Apart from that, the combined cycle has as well reduced its supply to 9.8% from the 11.4% of the previous year, in a way motivated by the demand reduction caused by the pandemic, and by the increase of renewable energy which, during the first months of the pandemic, together with the nuclear, accounted almost for the total generation (see figures 1.9 and 1.10). It is also remarkable the increase in photovoltaic solar energy, which has almost doubled its output from 3.6% in 2019 to 6.1% in 2020.
- ▶ The same trend can be seen in the Portuguese area, though not as significant. With respect to 2019, coal thermal power units have decreased their supply to less than half, accounting for 4.1%. Its share was covered mostly by hydraulic power plants, which in 2020 have increased their share from 15.5% to 22.1%, remaining the rest of the generation technologies approximately at the same percentages

# Annual report 2020

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## Executive summary / Market results

- ▶ The technologies that most hours have marked marginal are, in order, hydraulic, renewables-cogeneration-waste, and combined cycles at 45.8%, 29.5%, and 20.7%, respectively.
- ▶ In regard to the international exchanges of energy and in comparison with the previous year, it can be seen that the MIBEL zone continues to be a net importer, even though it can be observed that the exports have an increasing trend that has been growing during this year to account for a 90% increase with respect to the previous year (see figure 5.7). The exchange of energy on the market with Morocco was a net importer.
- ▶ In the intraday continuous market it can be observed an increasing 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 cost, in another way, the entry of new countries, increase liquidity and trading in the intraday continuous market. 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 November 2020 with 637.02 GW, confirming the positive trend.
- ▶ In the European intraday continuous market energy from 22 countries is traded, being managed by 10 assigned market operators. It is remarkable that, since its birth, only 3 market operators take the role of coordinating the European intraday continuous market, being OMIE one of them.

# Annual report 2020

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## Executive summary / Market results

- In relation to the international exchanges, in contrast with the day-ahead market in which the MIBEL area is generally net importer, in the intraday continuous market there is more trading in the exporting direction, while there is capacity available for this (see figure 3.14).

### Other relevant facts

- COVID-19 has been one of the most relevant facts this year. From the operational view, the market operator has been able to operate all the markets. Scoping the energy and price results of the day-ahead market, the situation caused by the pandemic has impacted directly in the energy demand and, as a consequence, on the prices.
- In Europe, several remarkable changes in the day-ahead coupling have taken place during the year. The topology has been modified, the greek market operator HENEX has been integrated, new interconnectors have been added (ALEGRO link, between Belgium and Germany, and NordLink between Norway and Germany) as well as the elimination of Great Britain as a result of Brexit.  
During this year several improvements have been made in the market operators' assets, consisting in two updates of the broker platform and EUPHEMIA algorithm.

## Annual report 2020

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### Executive summary / Economic results

- ▶ In the context of the pandemic situation caused by COVID-19, all the settlement, billing, collections and payments and guarantees management processes have been working normally and without incidents.
- ▶ The annual average final price of the national demand of Spanish Electricity System for the year 2020, 40.38 €/MWh, has been the lowest recorded in the last decade. National demand of 2020 has been affected by the pandemic situation and has also reached its minimum value in the last decade, standing at 235,835 GWh.
- ▶ During 2020 OMIE has designed and launched a new guarantee management model based on **electronic documents in XML format** that allows replacing the traditional bank guarantees hard copies. This model represents a new step in the commitment to innovation and digitization of the energy markets and will result in a better service to market participants considering the important advantages it brings. Likewise, in 2020 OMIE has introduced the possibility of formalizing **electronic bank guarantees via pdf file signed** with digital certificate, which has allowed participants to provide the necessary guarantees to operate in the market, in a situation in which there have been restrictions on mobility motivated by the declaration of the state of emergency due to the health crisis.

## Annual report 2020

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### Executive summary / Economic results

- ▶ The economic volume of purchases in the markets managed by OMIE in 2020 was €9,182 million, 29.3% lower than the previous year.
- ▶ The economic volume of purchases in the Spanish zone during 2020 was €7,307 million, while in the Portuguese zone it was €1,875 million, reducing respectively by 29.1% and 29.8% compared to previous year.
- ▶ The final average price of the national demand of the Spanish electricity system for 2020 was 40.38 €/MWh, 24.4% less than the previous year.
- ▶ The congestion revenue from the Spain-France interconnection in 2020 was €124 million, 25.9% lower than the previous year. There were price difference between both zones 60.7% of the hours.
- ▶ The congestion revenue from the Spain-Portugal interconnection in 2020 was €3 million, 38.6% lower than the previous year. There were price difference between the zones 4.1% of the hours.

## Annual report 2020

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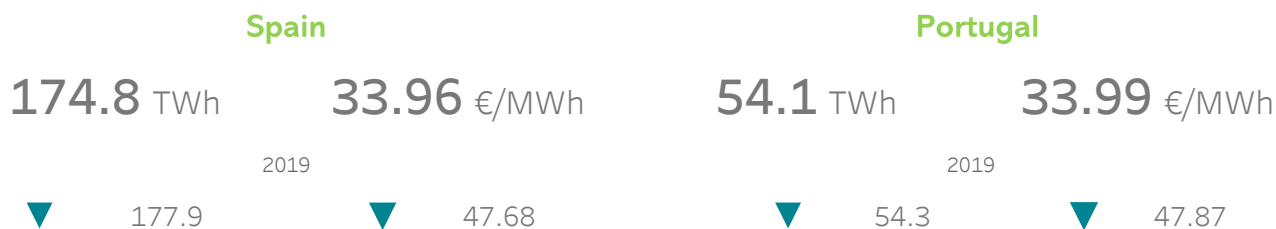
### Executive summary / Economic results

- ▶ The economic volume of the energy exchanges from MIBEL through the interconnection with France has risen to €450 million for imports and €307 million for exports, having a reduction of 35.0% in the first case and an increase of 71.6% in the second compared to the previous year.
- ▶ Through the interconnection with Morocco, the economic volume of imports has risen to €7 million and that of exports to €19 million, having a reduction of 86.8% in the first case and an increase of 40.4% in the second compared to last year.
- ▶ In 2020, the weekly average payments made to creditor agents on the market was €96 million/week.
- ▶ 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. In 2020, the number of debtor agents has risen to about 380, while creditor agents stayed at 90.
- ▶ During 2020, 165,299 purchase invoices and 64,539 sales invoices were issued for energy markets managed by OMIE, increasing respectively by 9.9% and 18.8% compared to the previous year.

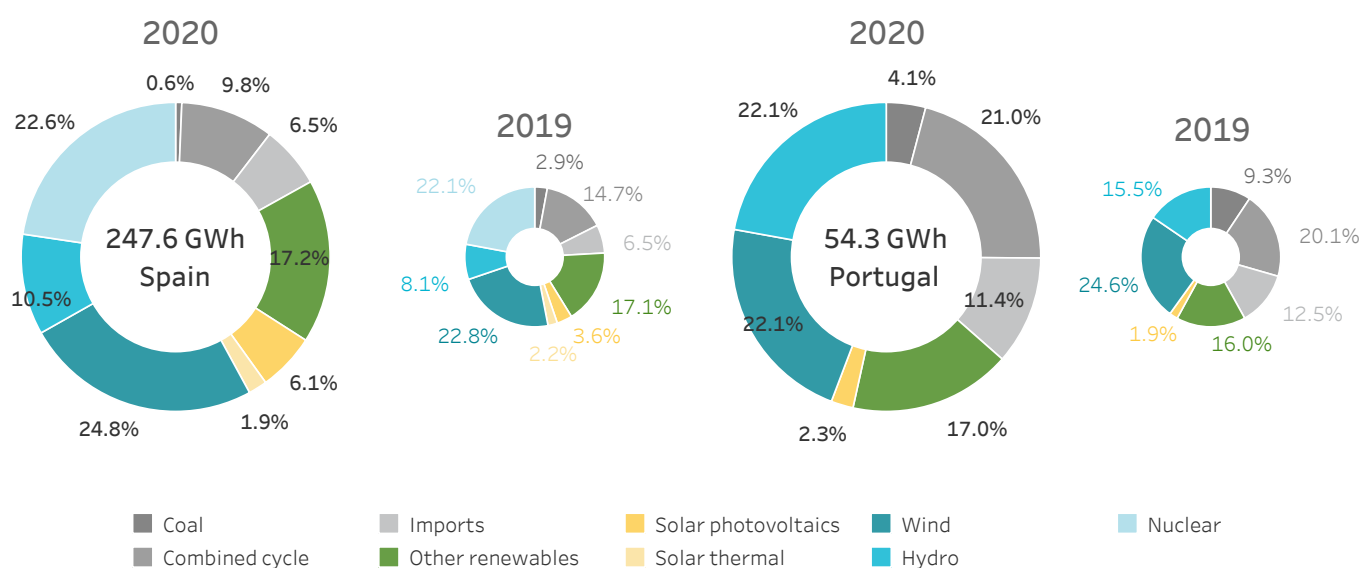


## Day-ahead market

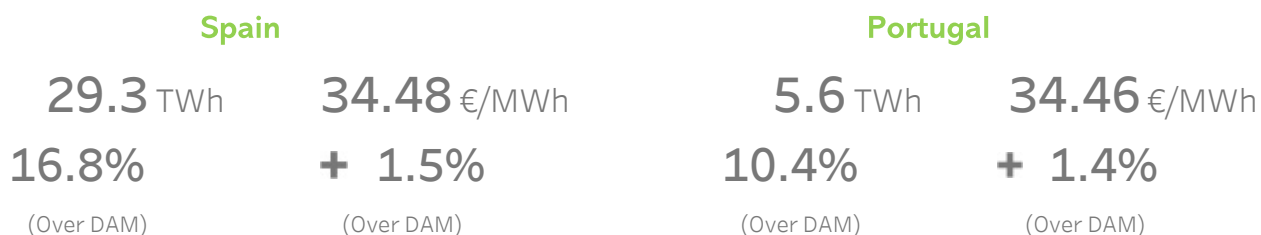
Energy and price day-ahead matched program (Programa Diario Base de Casación, PDBC)



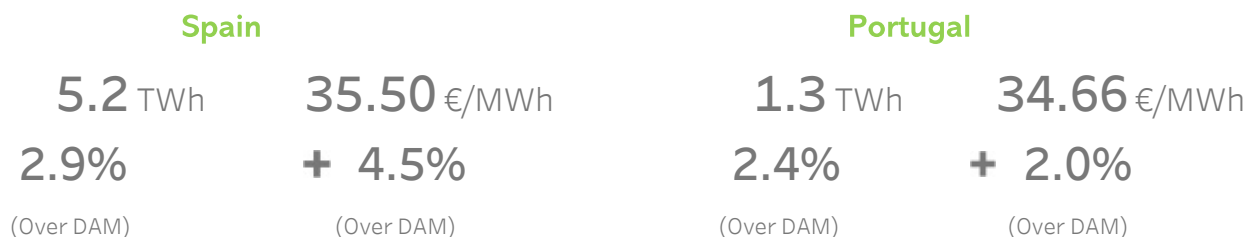
Tecnology day-ahead operations program (Programa Diario Base de Funcionamiento, PDBF)



## 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 2020

### Spain

### Portugal

#### Day-ahead market

**6.152** Millions of €  
8,692 M€  
Last year  
▼ 29.23%  
Variation 2020 - 2019

**1,733** Millions of €  
2,466 M€  
Last year  
▼ 29.72%  
Variation 2020 - 2019

#### Intraday auctions market

**959** Millions of €  
1,473 M€  
Last year  
▼ 34.90%  
Variation 2020 - 2019

**122** Millions of €  
186 M€  
Last year  
▼ 34.27%  
Variation 2020 - 2019

#### Continuous intraday market

**197** Millions of €  
143 M€  
Last year  
▲ 37.27%  
Variation 2020 - 2019

**19** Millions of €  
19 M€  
Last year  
▲ 1.37%  
Variation 2020 - 2019

### Spain-Portugal

### Spain-France

#### Congestion revenue

**3** Millions of €  
4 M€  
Last year  
▼ 38.63%  
Variation 2020 - 2019

**124** Millions of €  
168 M€  
Last year  
▼ 25.91%  
Variation 2020 - 2019

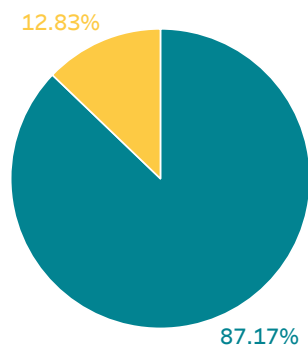
#### % Hours with price difference

**4.08** %

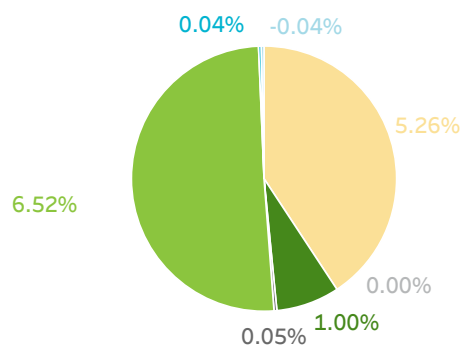
**60.69** %

## Final average price of the Spanish electricity system

### Components - National demand



- Day-ahead market
- Others:
  - Constraints
  - Upward reserve power
  - Regulation band
  - Intraday market
  - Technical operation
  - Capacity payments
  - Interruptibility service



### National demand

**40.38** €/MWh

53.41 €/MWh  
Last year  
▼ 24.40%  
Variation 2020 - 2019

### Free market

**40.18** €/MWh

53.18 €/MWh  
Last year  
▼ 24.45%  
Variation 2020 - 2019

### Reference retailers

**41.91** €/MWh

55.22 €/MWh  
Last year  
▼ 24.10%  
Variation 2020 - 2019

## Annual report 2020

# 1.

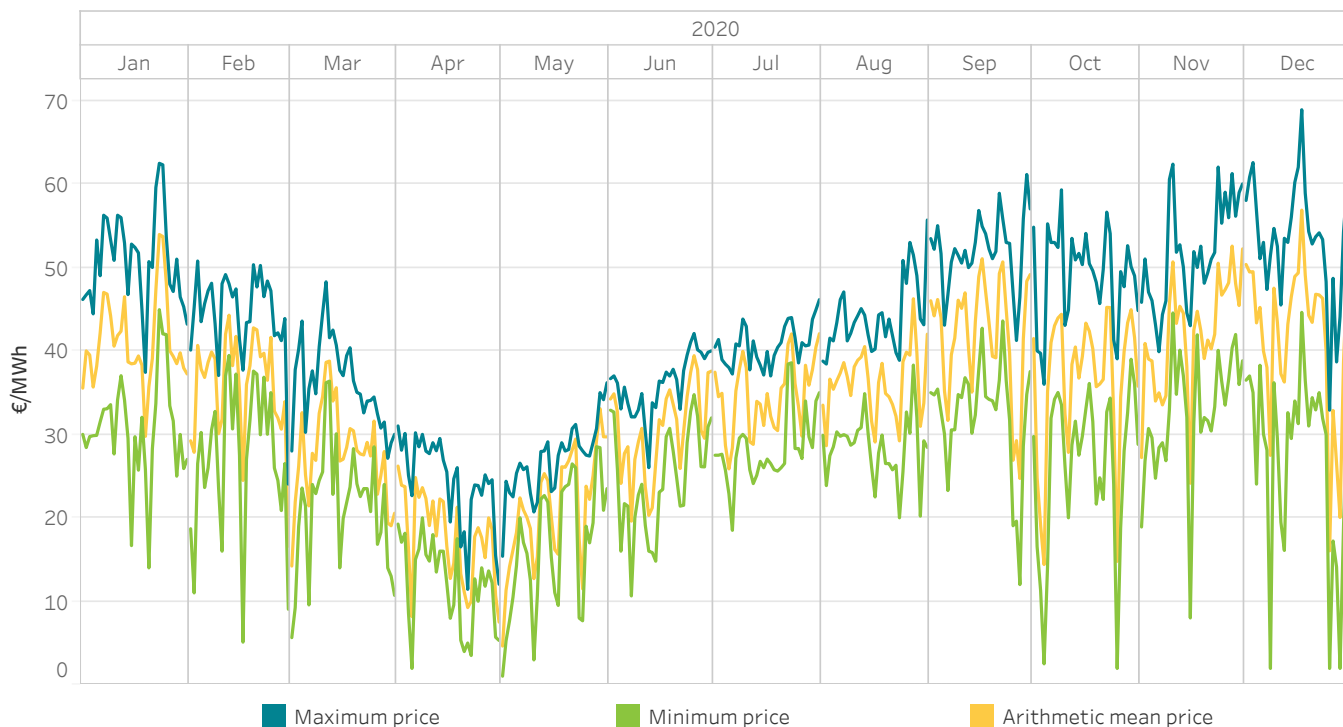
## Day-ahead market

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



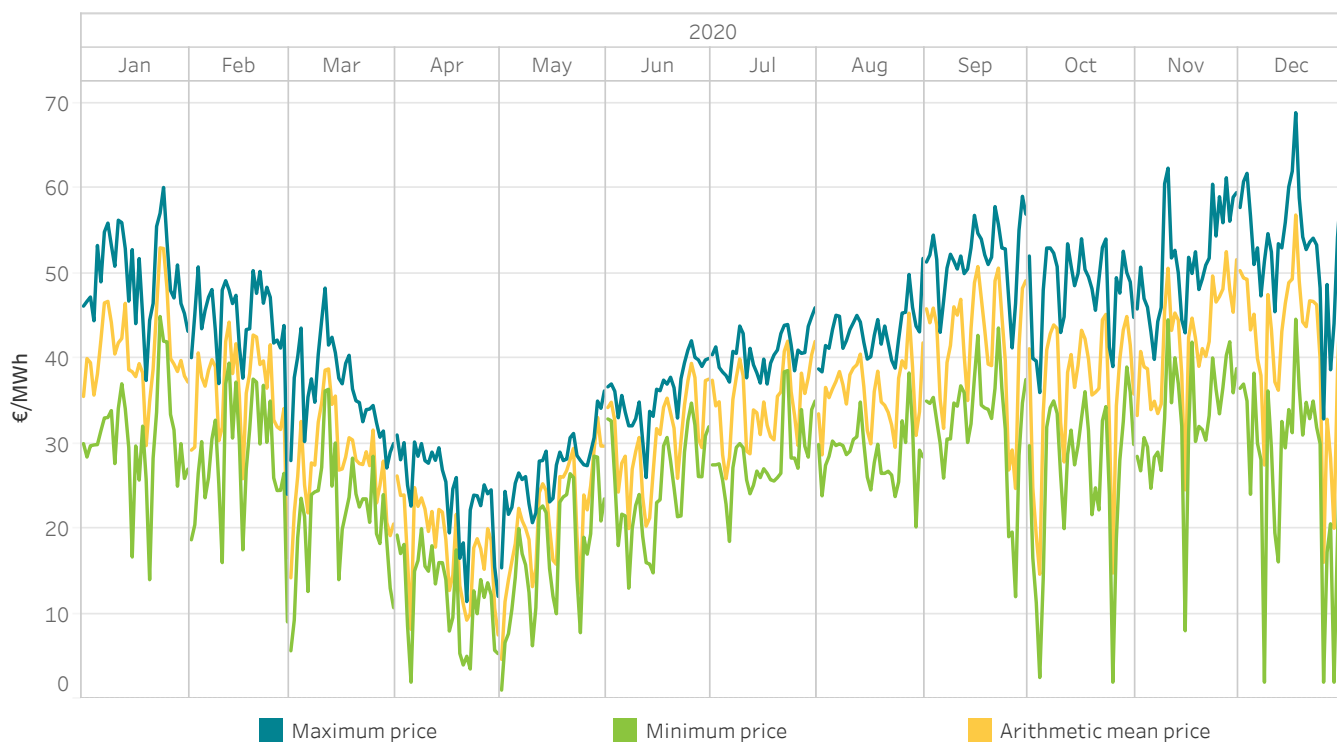
## 1.1 Maximum, minimum and arithmetic mean price on the day-ahead market

In Spain

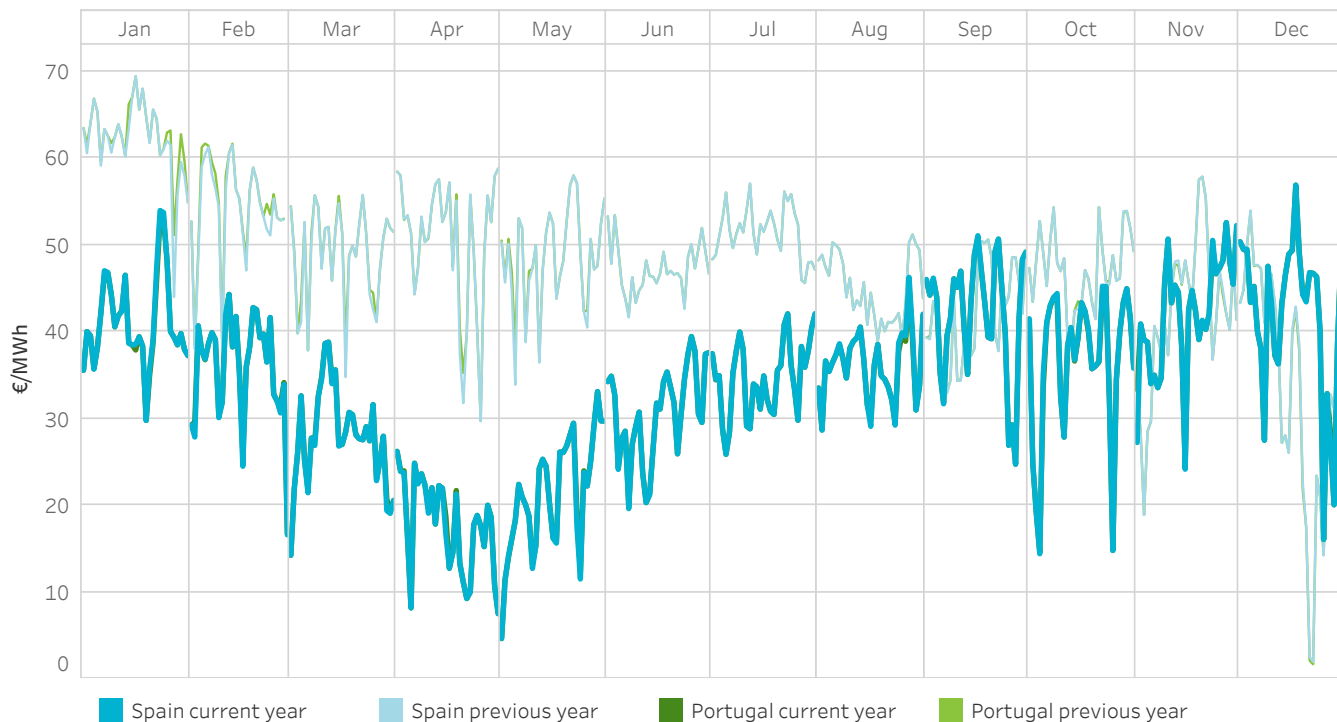


## 1.2 Maximum, minimum and arithmetic mean price on the day-ahead market

In Portugal



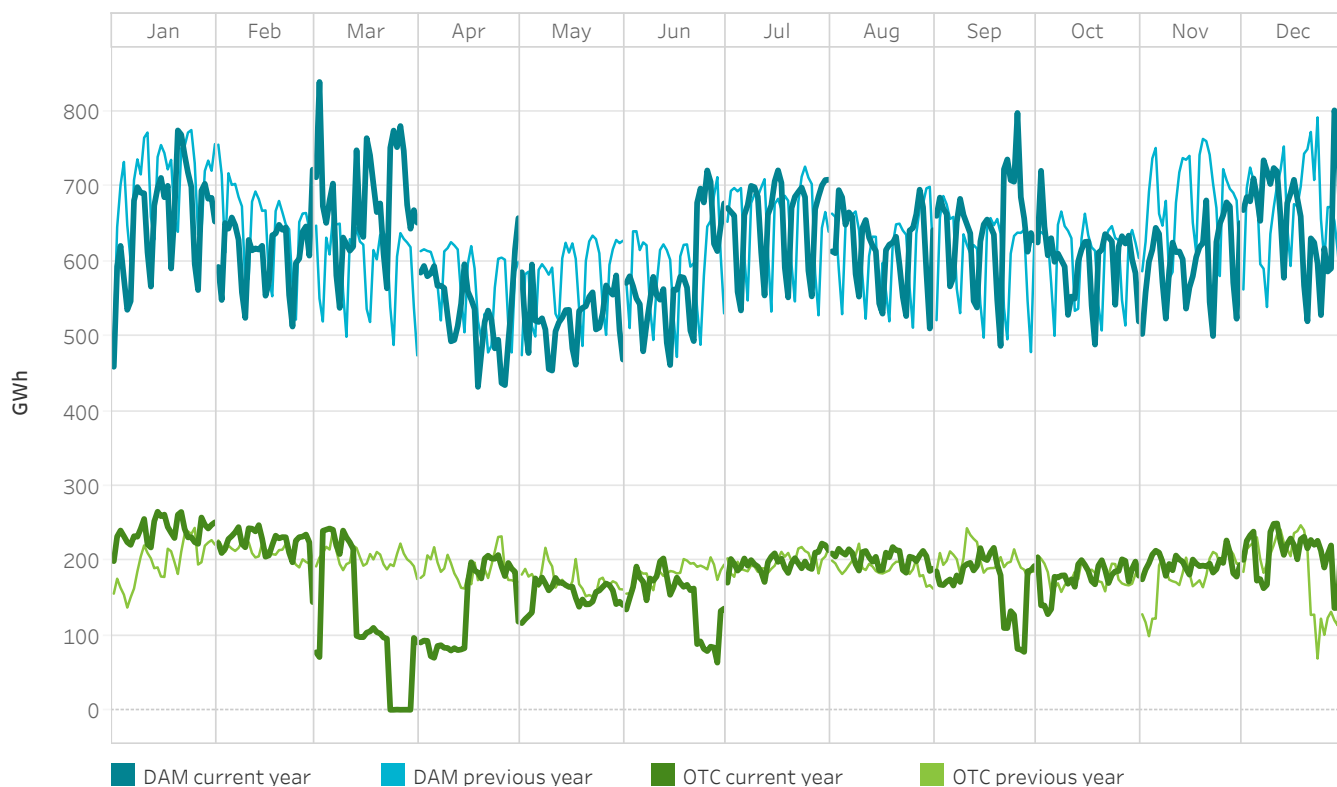
### 1.3 Day-ahead arithmetic mean prices for 2020 compared to 2019 In Spain and Portugal



### 1.4 Energy negotiated on the day-ahead market and over the counter contracts (OTC) for 2020 compared to 2019 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

Year of study	Month of study	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2020	January	41.10	62.48	14.00	15,206.0	7,418.5
	February	35.87	50.77	5.10	13,521.0	6,486.9
	March	27.73	48.28	5.64	16,800.2	3,654.9
	April	17.65	31.01	1.95	12,492.0	4,156.9
	May	21.26	36.19	1.02	12,735.8	4,791.1
	June	30.62	42.09	10.64	13,889.5	4,422.4
	July	34.64	46.15	18.50	16,255.1	6,129.7
	August	36.20	55.69	20.00	15,071.1	6,317.2
	September	41.96	61.14	12.00	15,137.0	5,071.7
	October	36.59	59.30	1.95	14,388.5	5,547.6
	November	41.94	62.38	8.00	13,552.6	5,871.9
	December	41.97	68.90	1.95	15,762.9	6,552.6
Interannual results		33.96	68.90	1.02	174,811.6	66,421.3

Year of estudio	Period	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2019	January-December	47.68	74.74	0.03	177,936.8	69,669.1
2020	January-December	33.96	68.90	1.02	174,811.6	66,421.3

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

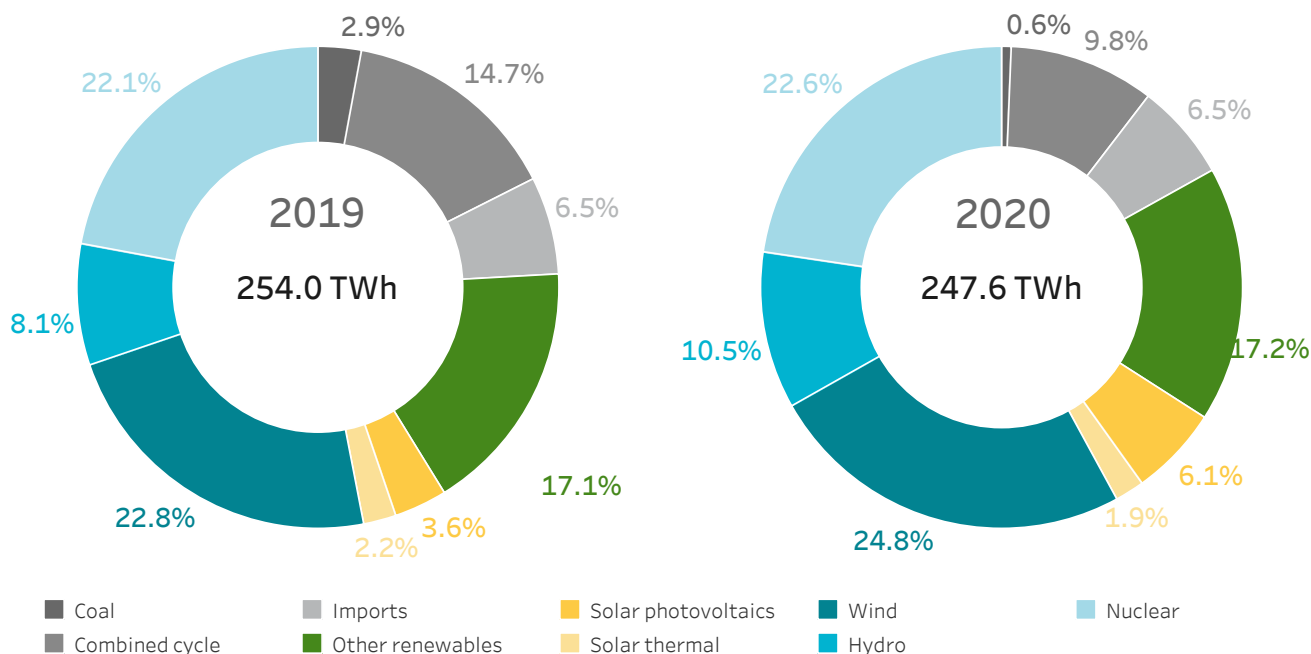
In Portugal

Year of study	Month of study	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2020	January	40.93	60.11	14.00	5,645.3	29.0
	February	36.04	50.77	9.04	4,571.3	27.2
	March	27.84	48.28	5.64	4,568.0	28.1
	April	17.77	31.01	1.95	3,743.5	28.0
	May	21.36	36.19	1.02	3,753.8	29.4
	June	30.64	42.09	13.00	3,790.3	9.3
	July	34.63	45.97	18.50	4,394.1	8.2
	August	36.11	51.77	20.20	4,338.7	8.3
	September	41.93	59.07	12.00	4,492.4	7.6
	October	36.46	54.08	1.95	4,764.1	8.8
	November	42.09	62.38	8.00	5,023.5	12.8
	December	42.03	68.90	1.95	4,986.7	8.9
Interannual results		33.99	68.90	1.02	54,071.8	205.7

Year of estudio	Period	Arithmetic mean price	Maximum price	Minimum price	Market energy	OTC energy
2019	January-December	47.87	74.74	0.01	54,330.9	290.4
2020	January-December	33.99	68.90	1.02	54,071.8	205.7

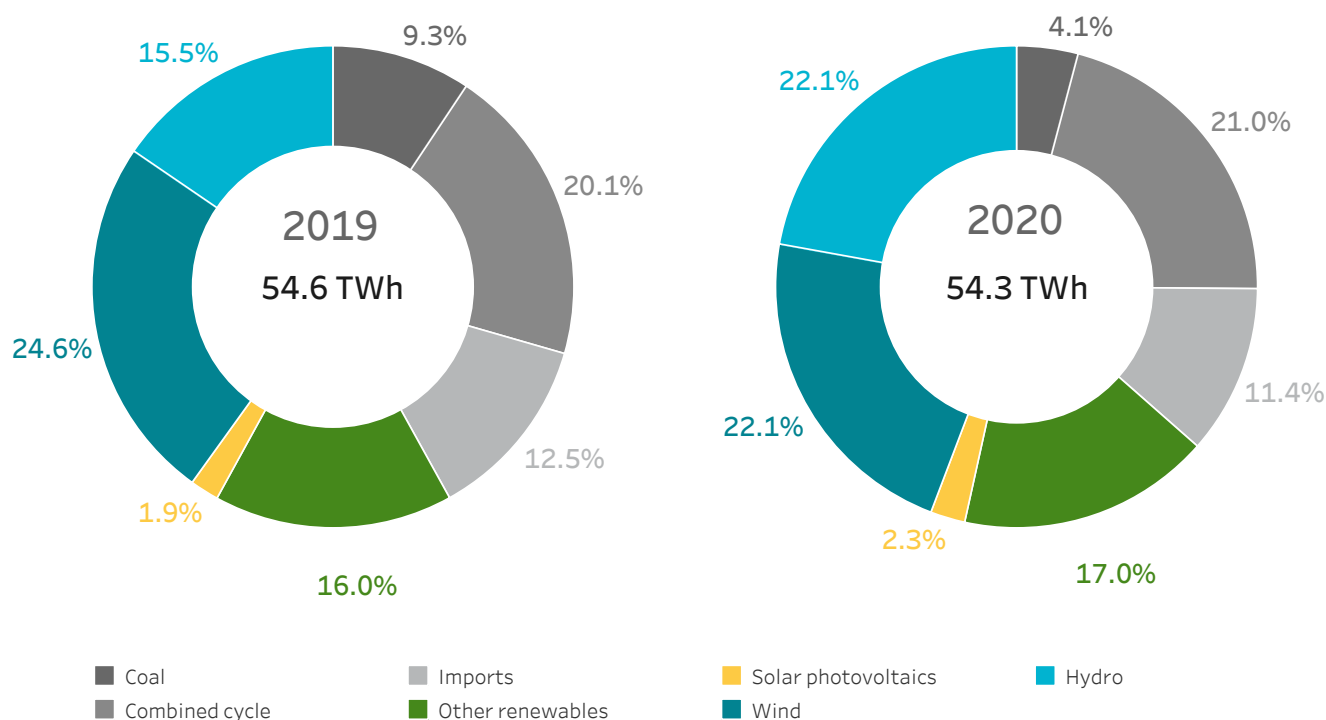
## 1.7 Technologies in the day-ahead operations program (Programa Diario Base de Funcionamiento, PDBF)

In Spain



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

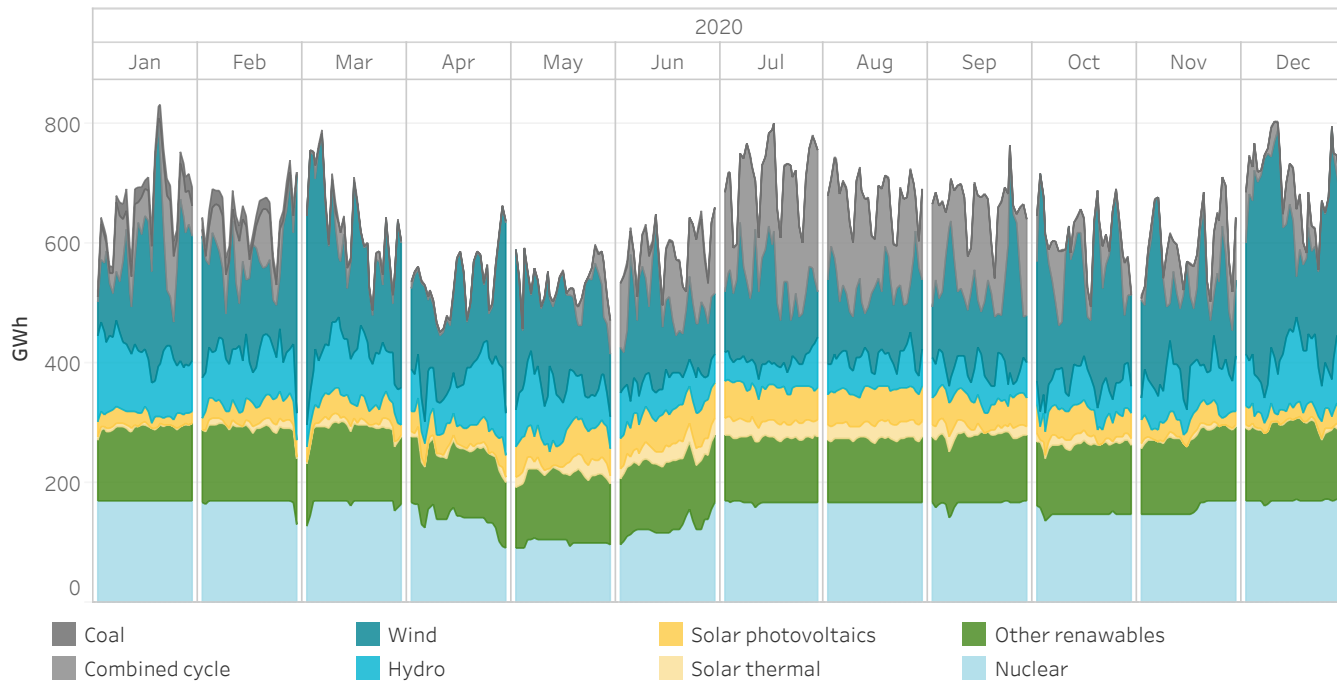
In Portugal



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

In Spain

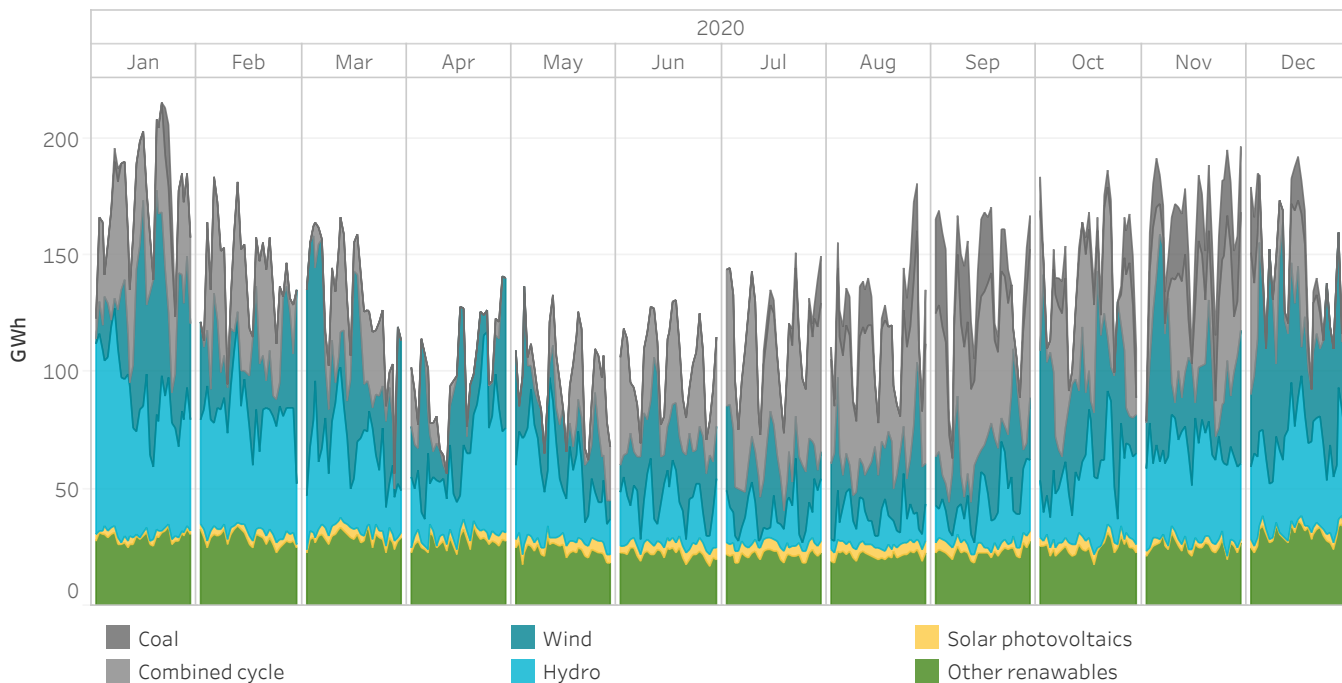
"Other renewables" includes the energy negotiated by cogeneration, waste, biomass, geothermics and minihydraulic.



## 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.

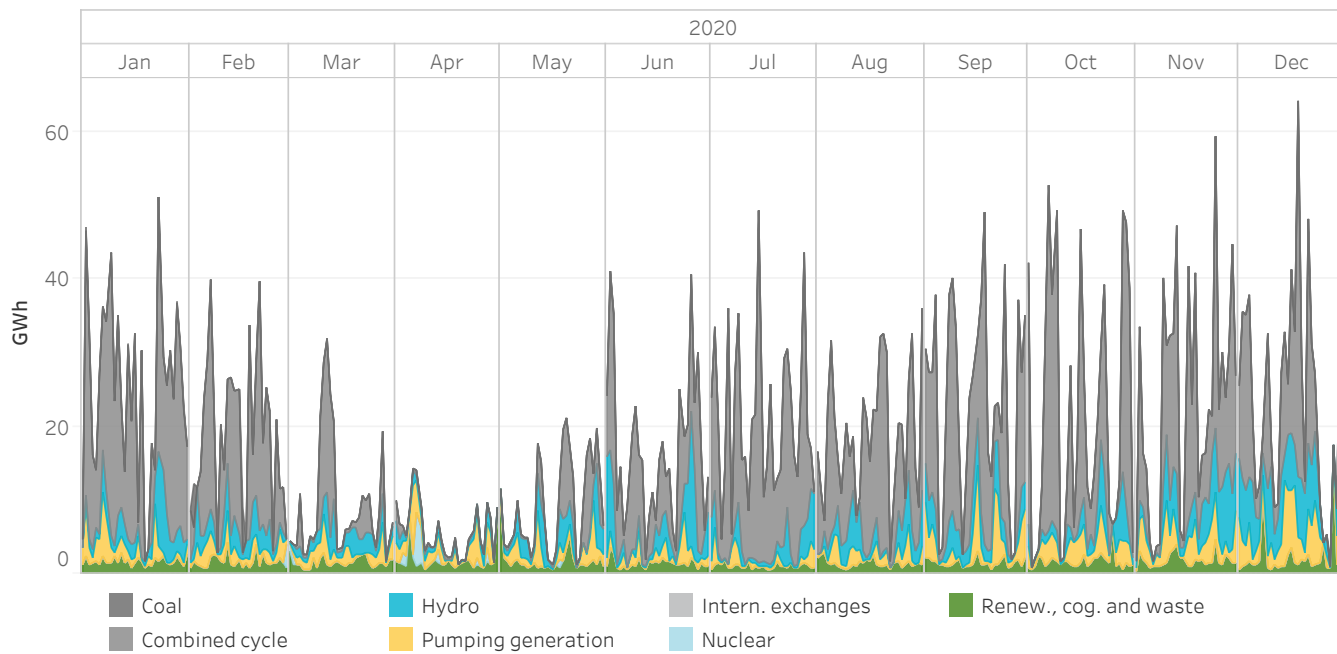




## 1.11 Energy classified by technology at 95% of the marginal day-ahead market price

In Spain

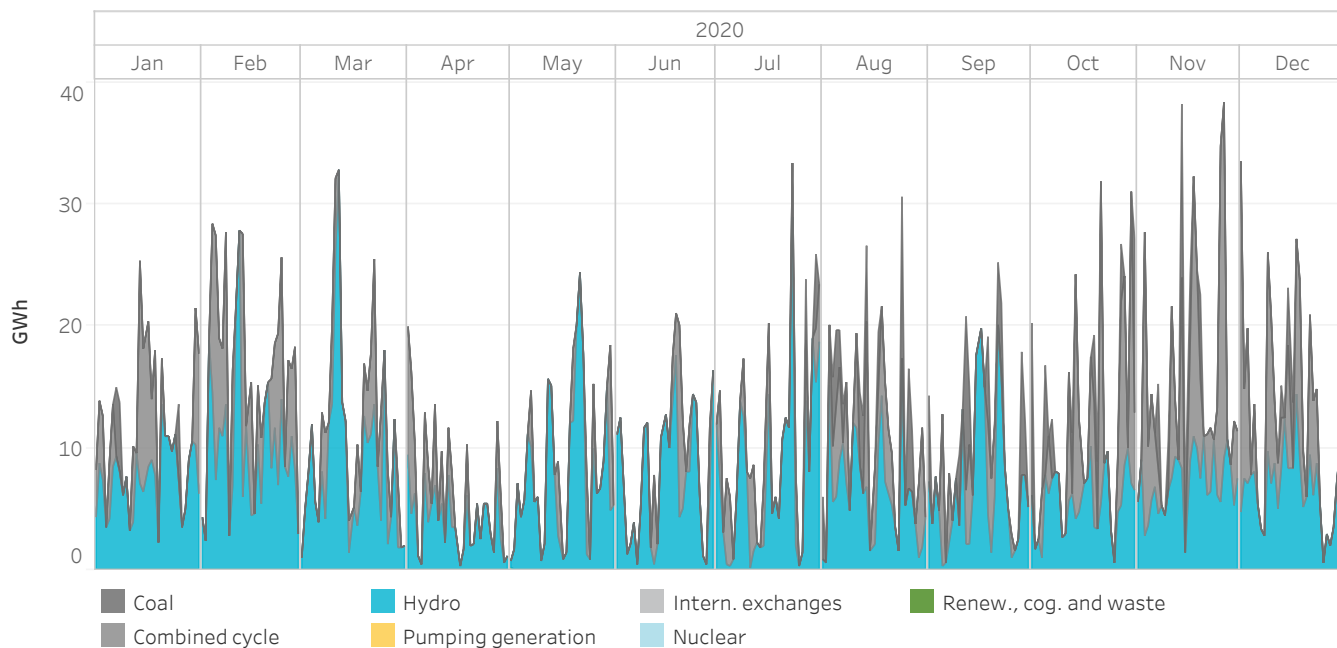
Energy matched classified by technology in the day-ahead market with bid price offered at a price greater than or equal to the 95% of the marginal price, including complex bids. The graph does not show the technologies setting the marginal price. This information is shown in graph 1.13.



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

In Portugal

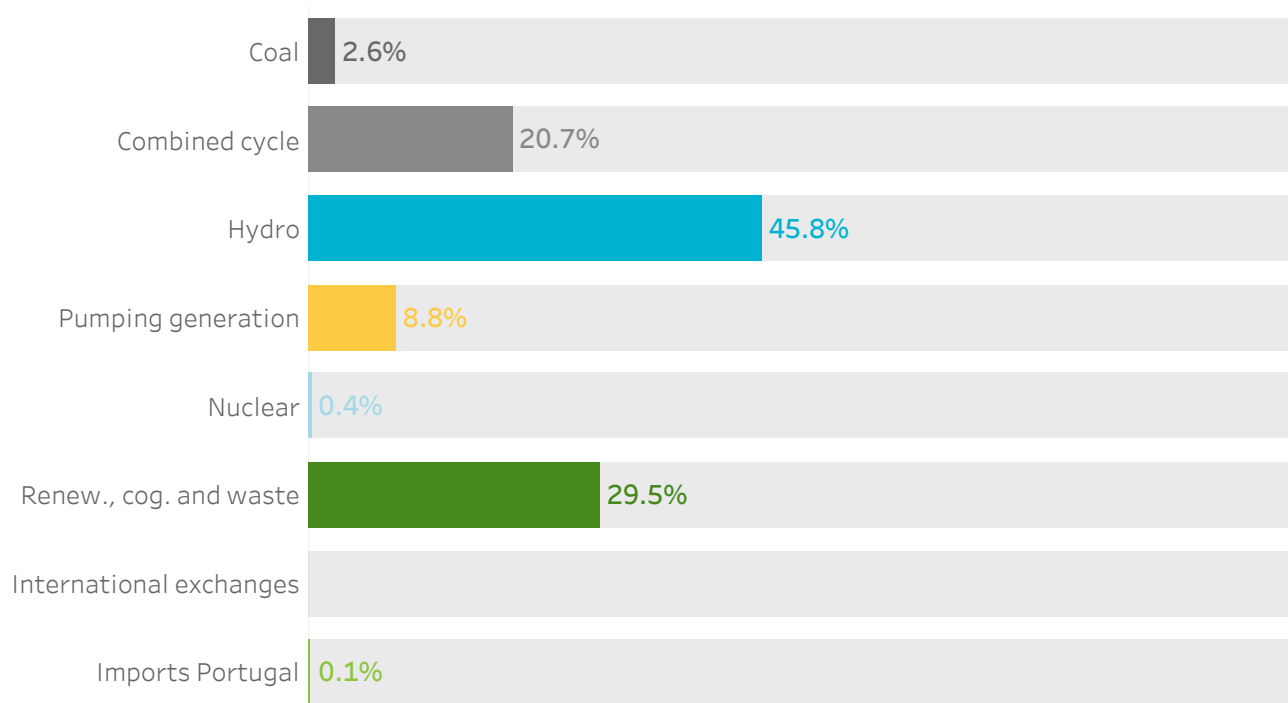
Energy matched classified by technology in the day-ahead market with bid price offered at a price greater than or equal to the 95% of the marginal price, including complex bids. The graph does not show the technologies setting the marginal price. This information is shown in graph 1.14.



### 1.13 Percentage of hours in which each technology sets a price

In Spain

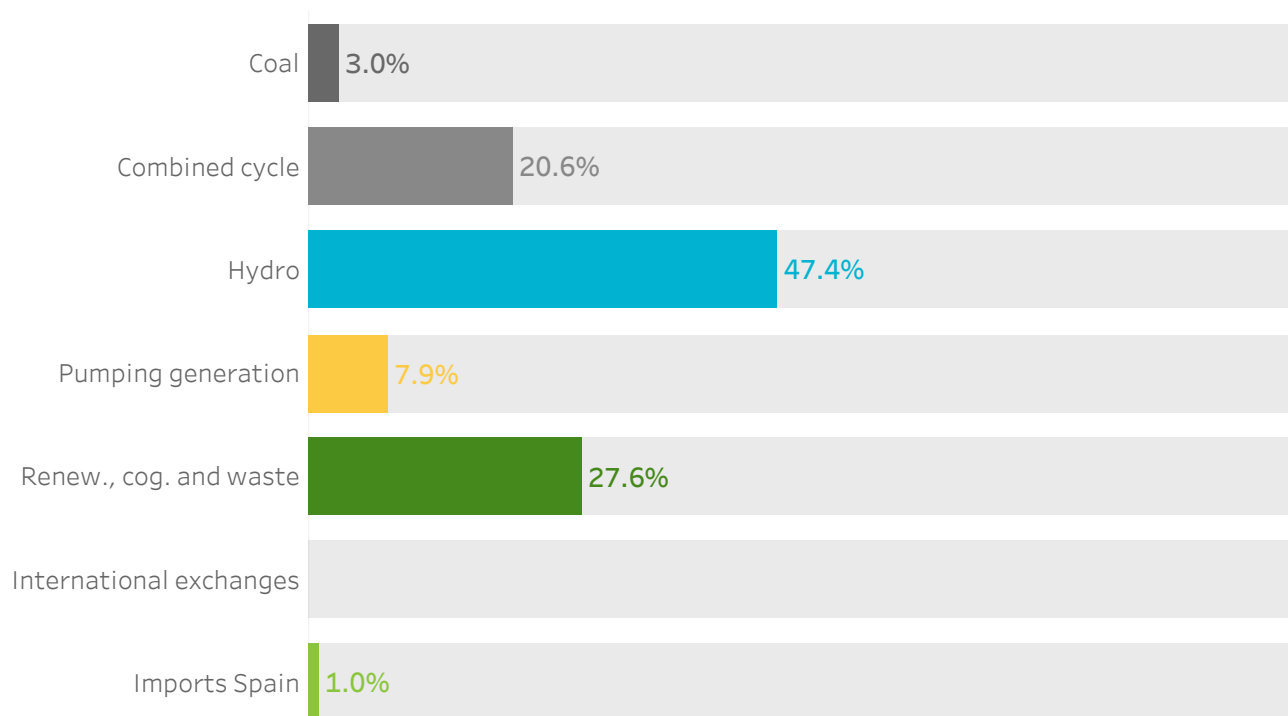
"Other renewables" includes the energy negotiated by cogeneration, waste, biomass, geothermics and minihydraulic.



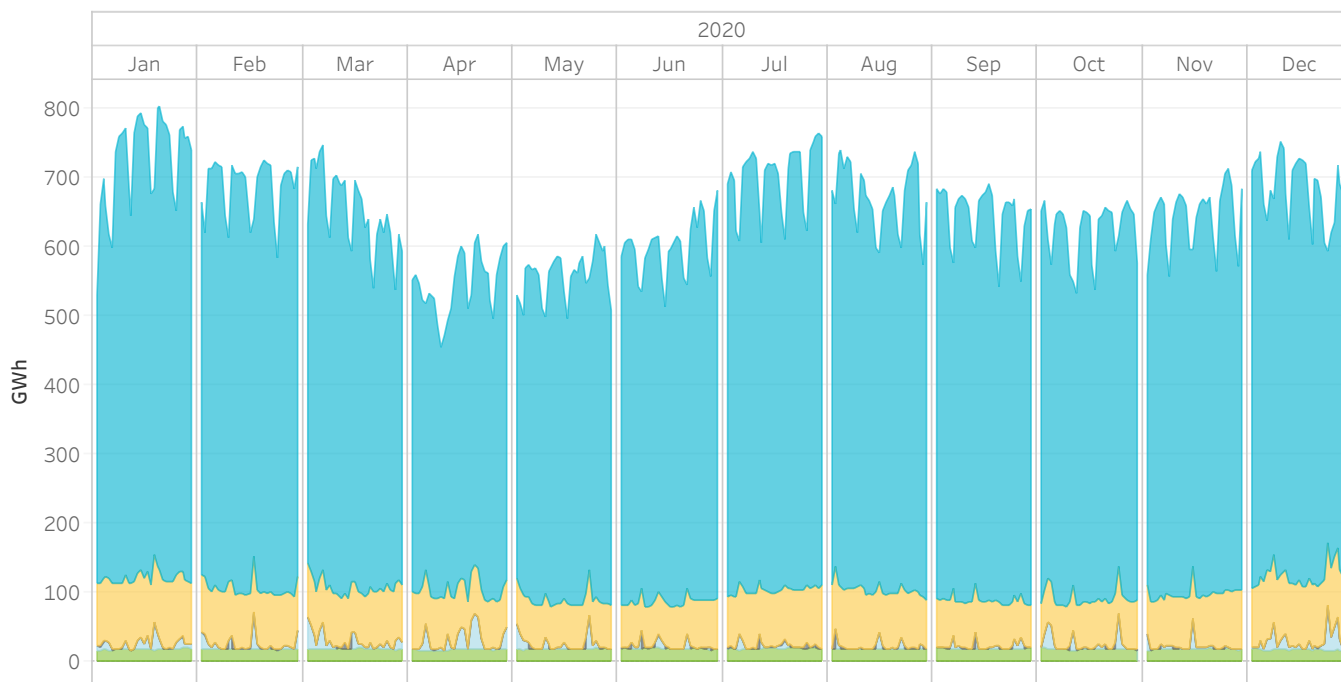
### 1.14 Percentage of hours in which each technology sets a price

In Portugal

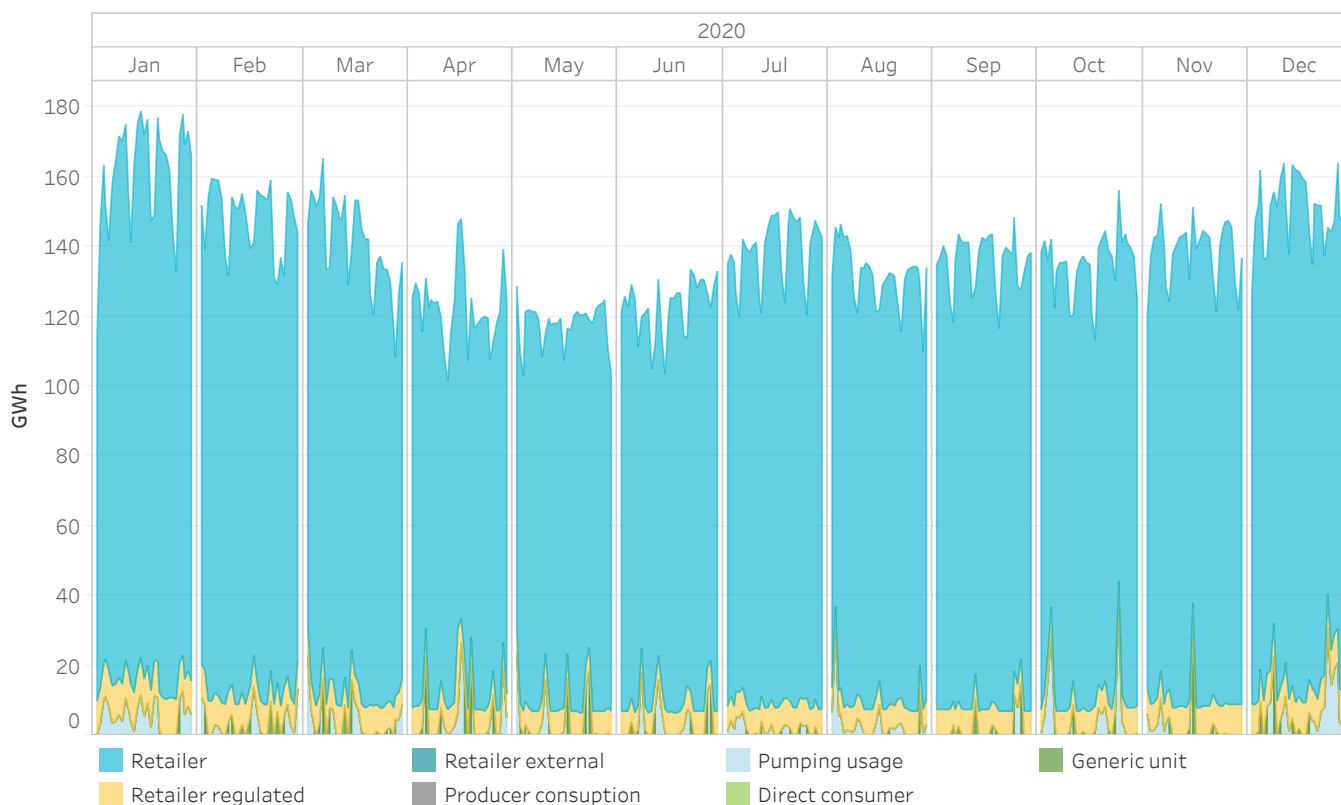
"Other renewables" includes the energy negotiated by cogeneration, waste, biomass, geothermics and minihydraulic.



### 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



## Annual report 2020

# 2.

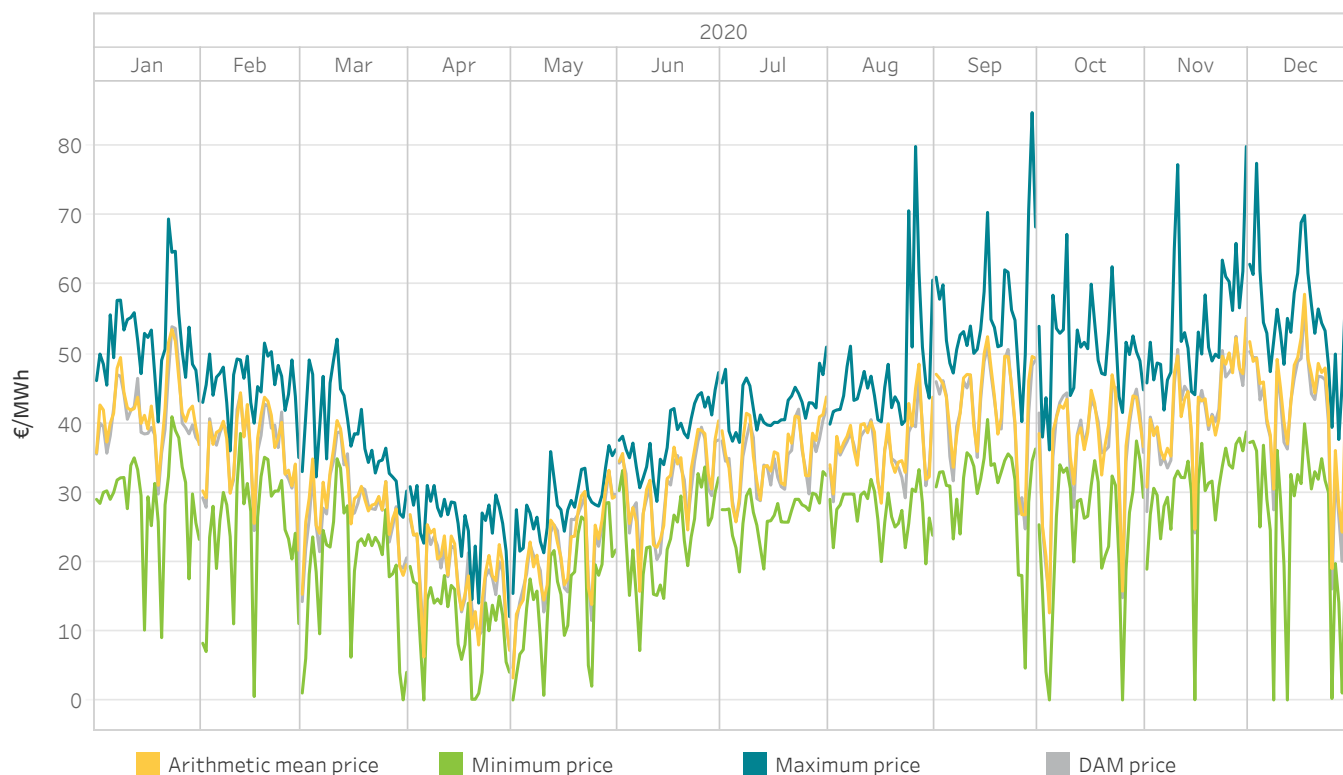
## Intraday auction market

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



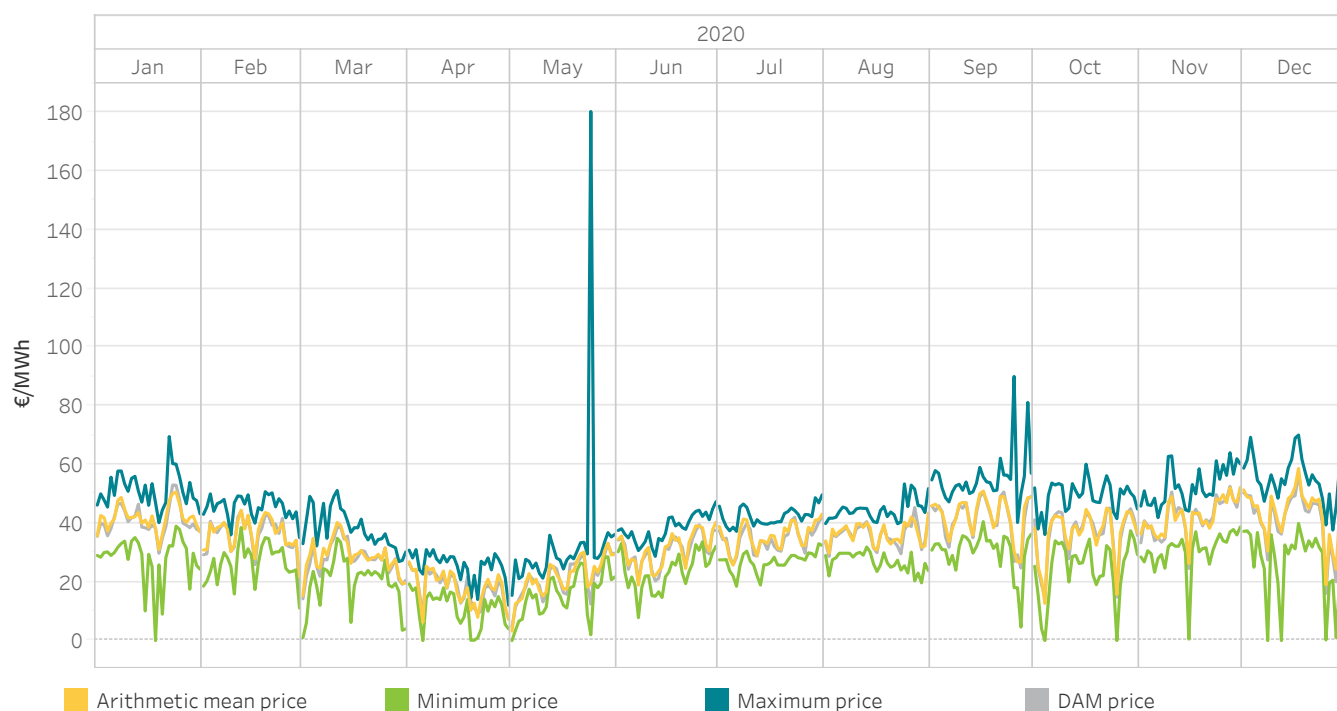
## 2.1 Maximum, minimum and arithmetic mean prices on the intraday auction market

In Spain



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

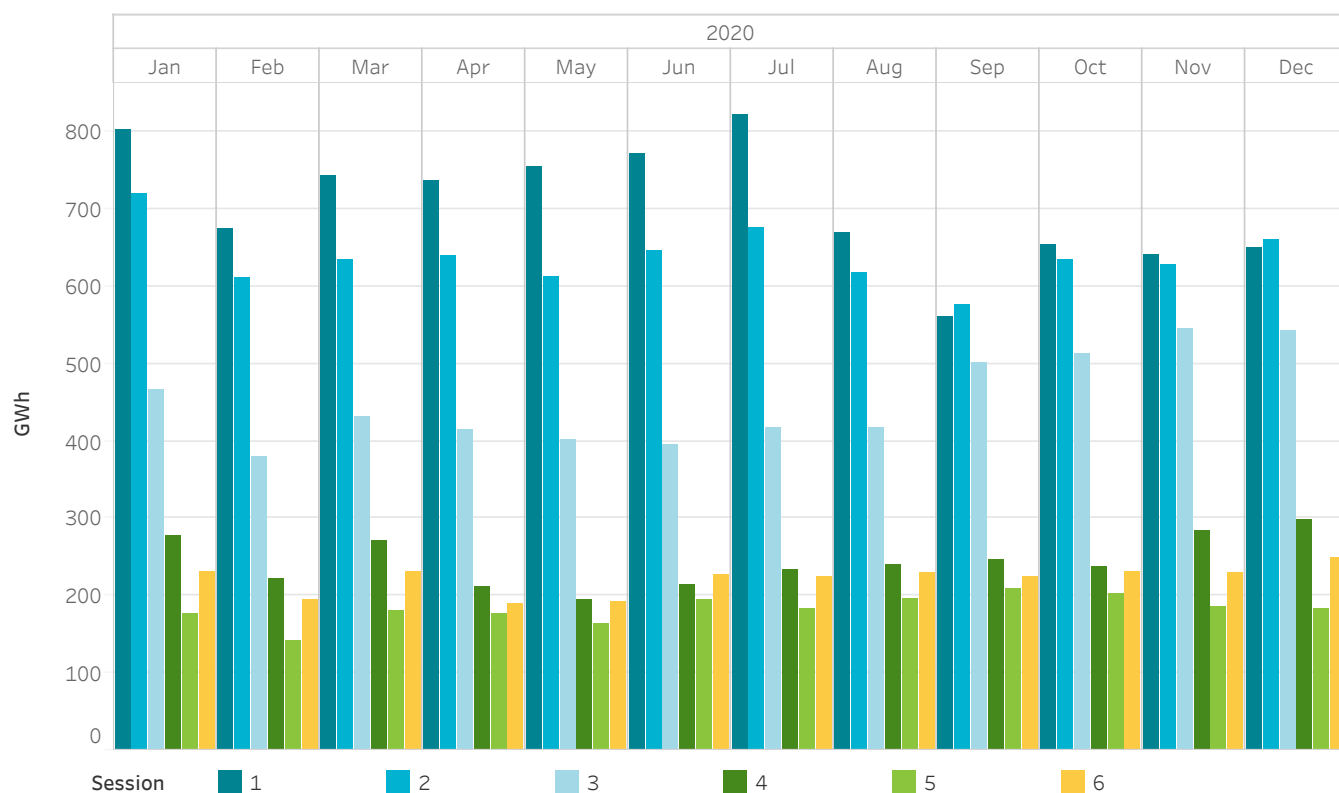
In Portugal



## 2.3 Monthly energy by session on the intraday auction market

In Spain

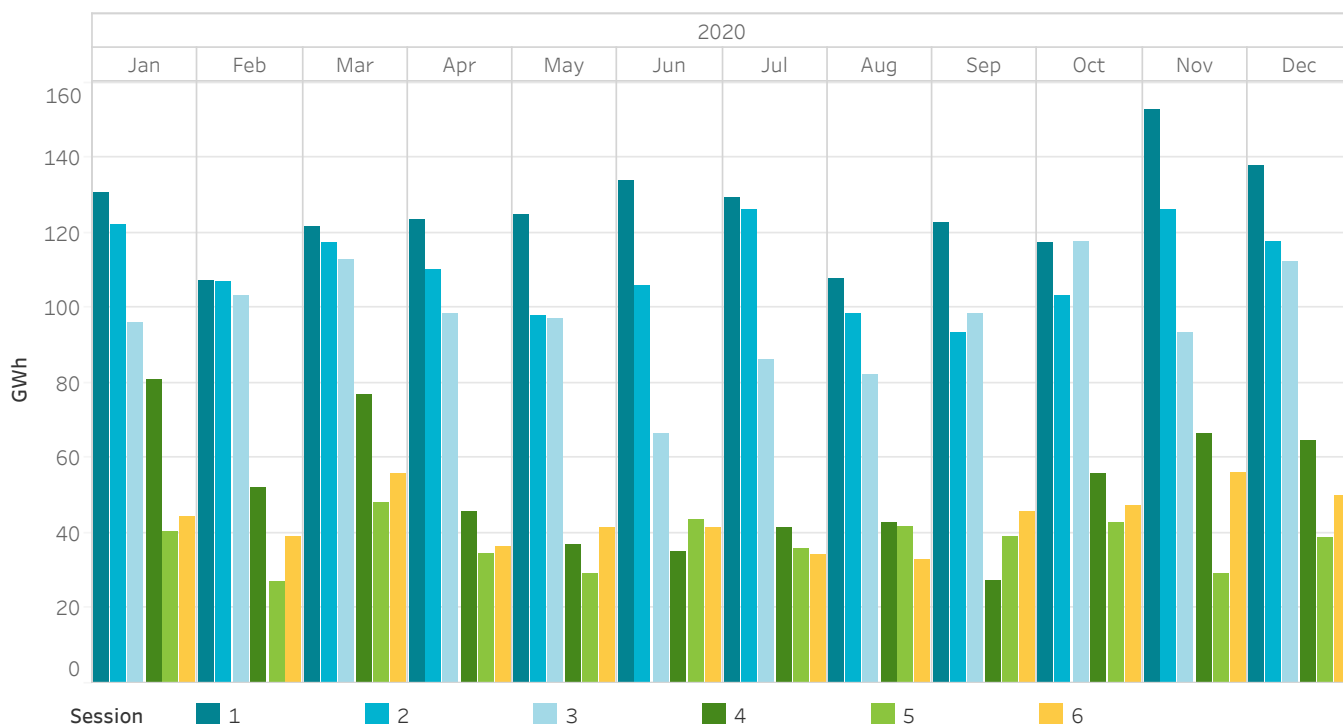
The negotiated energy is calculated as the addition of the acquisitions made in Spain plus the net exports.



## 2.4 Monthly energy by session on the intraday auction market

In Portugal

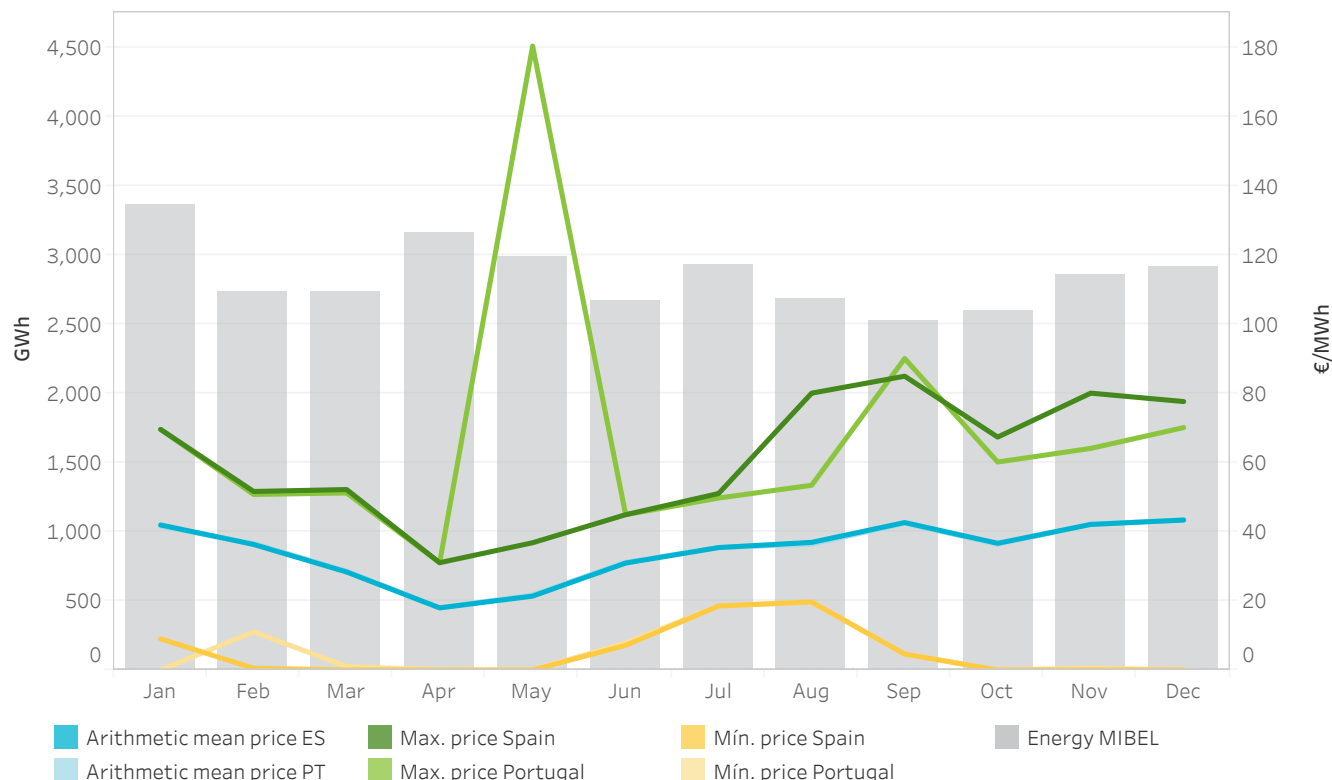
The negotiated energy is calculated as the addition of the acquisitions made in Portugal plus the net exports.



## 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

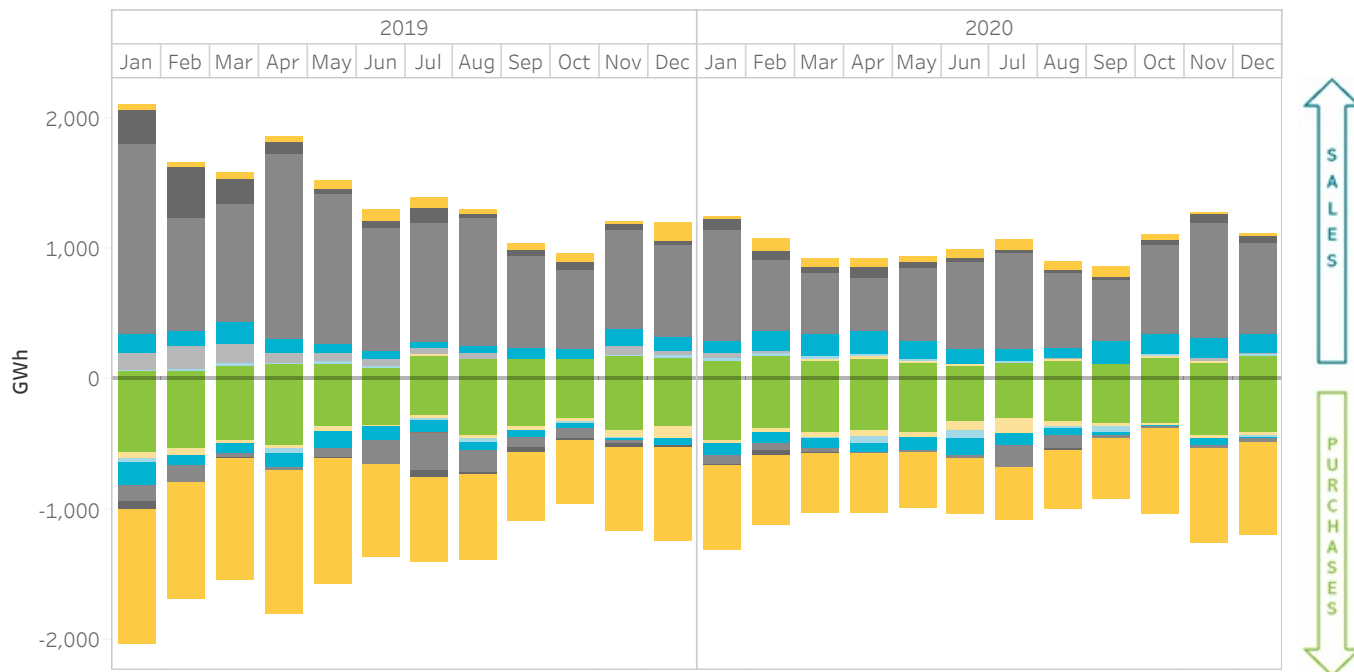
The maximum and minimum prices refer to hourly prices. The energy negotiated is calculated as the sum of acquisitions and net exports from each area.

	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	41.91	41.54	69.52	69.52	9.01	0.00	2,671.7	515.1	2,852.9
February	36.28	36.52	51.59	50.73	0.50	11.04	2,222.0	437.0	2,380.0
March	28.33	28.54	52.15	51.16	0.01	1.00	2,490.5	530.3	2,660.7
April	17.95	18.00	31.01	31.01	0.00	0.00	2,371.6	453.1	2,488.3
May	21.36	21.66	36.78	180.30	0.00	0.00	2,321.1	429.5	2,441.3
June	30.91	31.09	44.88	44.88	7.14	7.80	2,449.6	426.8	2,536.4
July	35.38	35.38	51.01	49.69	18.50	18.50	2,557.0	453.7	2,676.5
August	36.89	36.39	80.00	53.39	19.67	19.67	2,367.5	403.1	2,498.1
September	42.61	42.41	84.90	90.00	4.60	4.60	2,319.7	428.1	2,443.1
October	36.62	36.37	67.30	60.10	0.00	0.00	2,476.0	485.9	2,644.2
November	42.06	42.08	80.00	64.03	0.03	0.51	2,509.9	523.2	2,681.2
December	43.33	43.41	77.57	70.05	0.00	0.00	2,590.0	525.9	2,776.6
Annual total	34.48	34.46	84.90	180.30	0.00	0.00	29,346.6	5,611.7	31,079.1

## 2.7 Energy negotiated on the intraday auction market classified by technology

In Spain

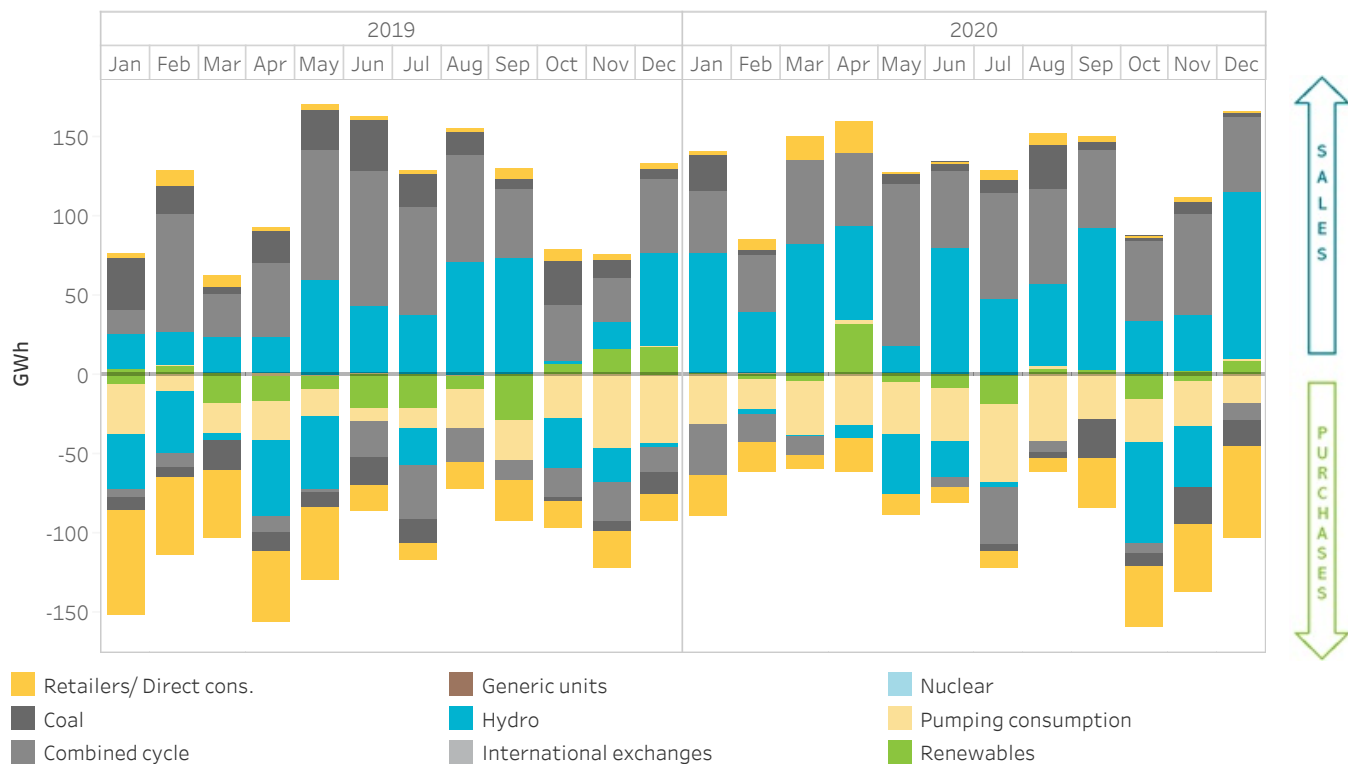
The positive values represent energy sales and the negative values represent energy purchases.



## 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.



■ Retailers/ Direct cons.  
■ Coal  
■ Combined cycle

■ Generic units  
■ Hydro  
■ International exchanges

■ Nuclear  
■ Pumping consumption  
■ Renewables



## Annual report 2020

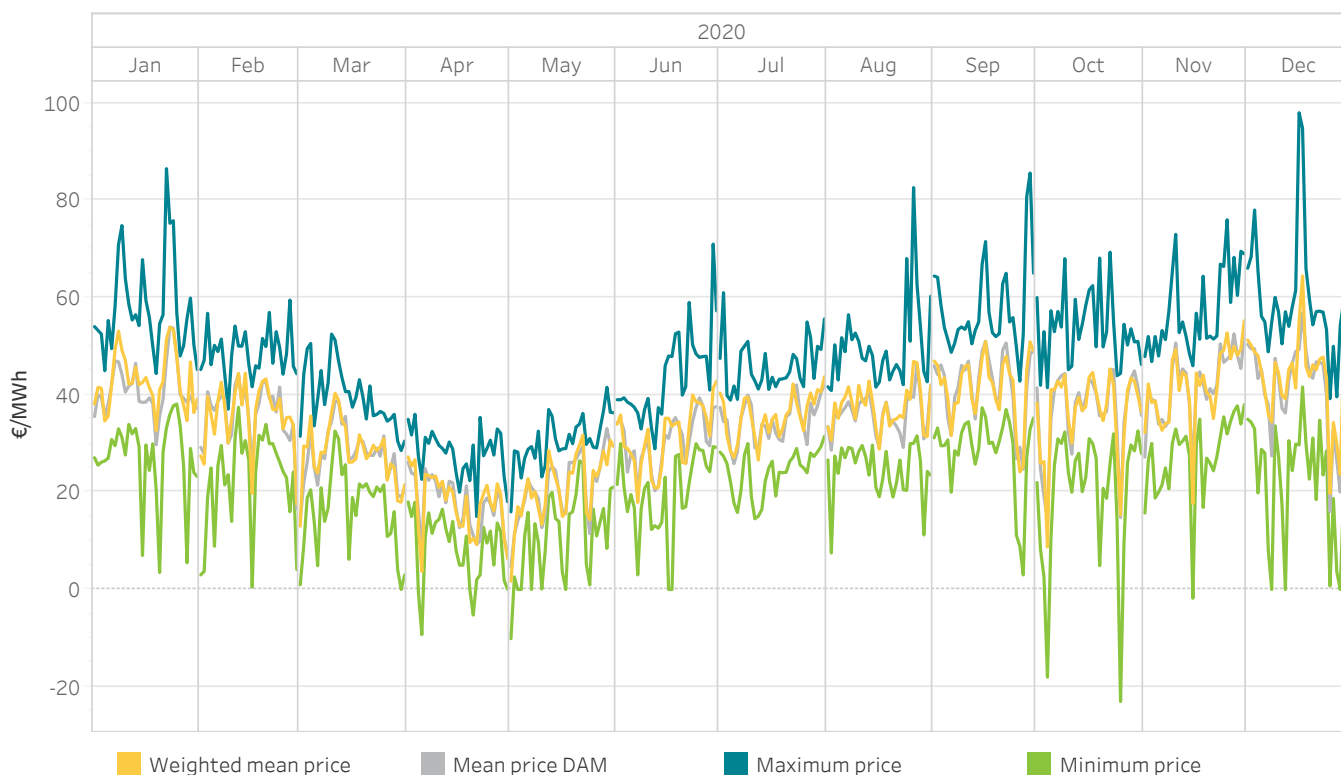
### 3. Intraday continuous market

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



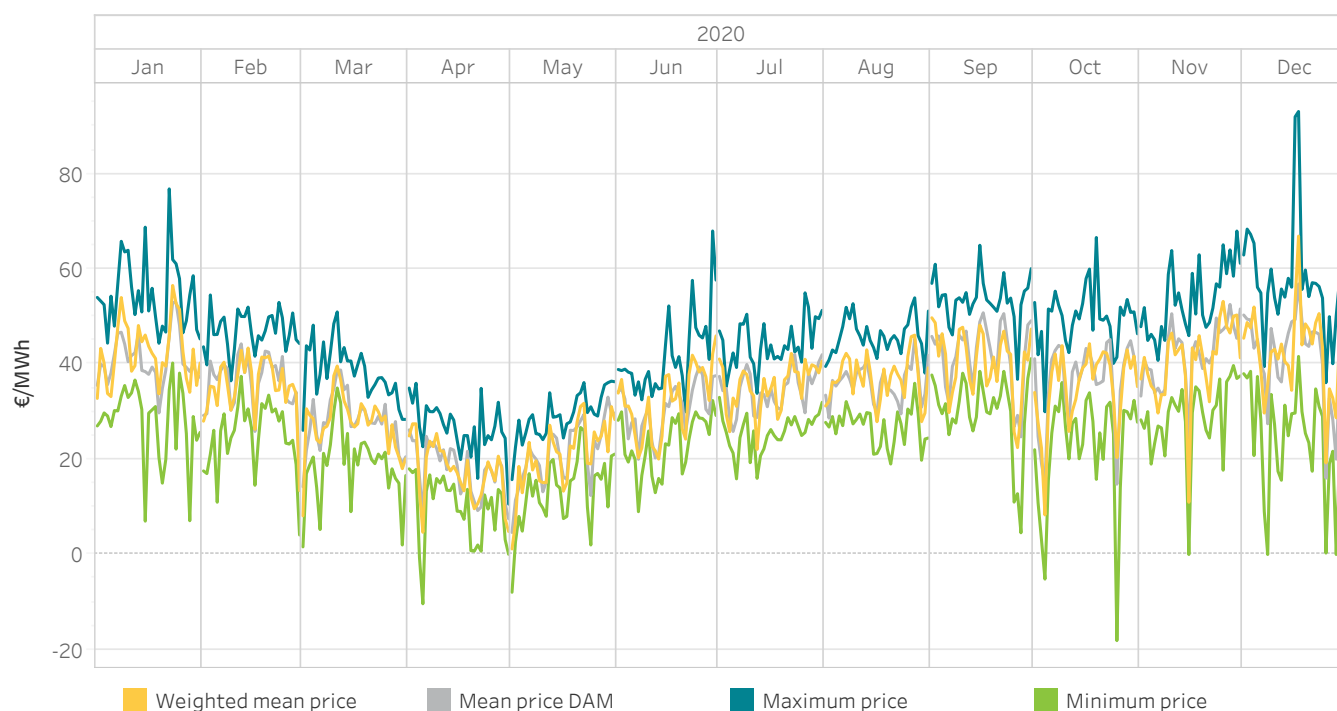
### 3.1 Maximum, minimum and weighted mean price on the intraday continuous market

In España

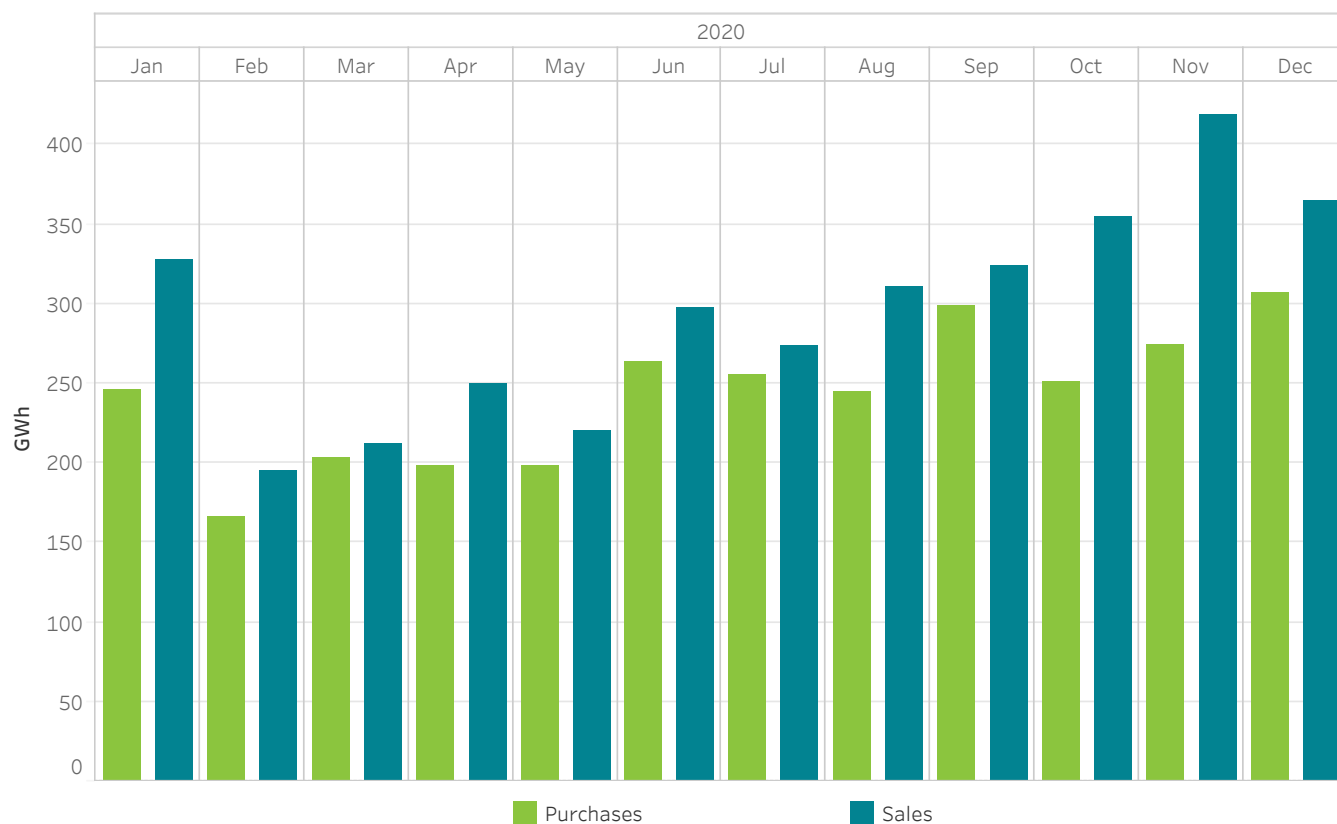


### 3.2 Maximum, minimum and weighted mean price on the intraday continuous market

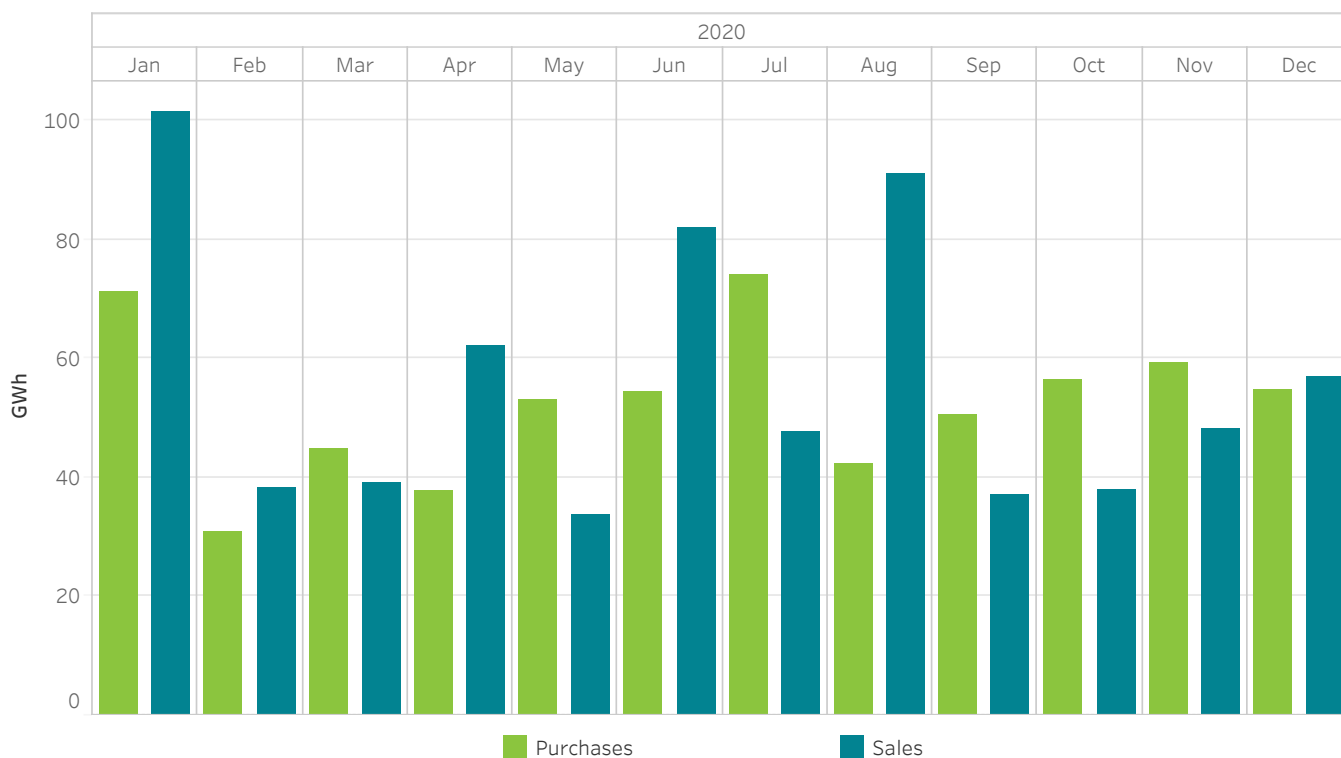
In Portugal



### 3.3 Monthly energy negotiated on the intraday continuous market In Spain



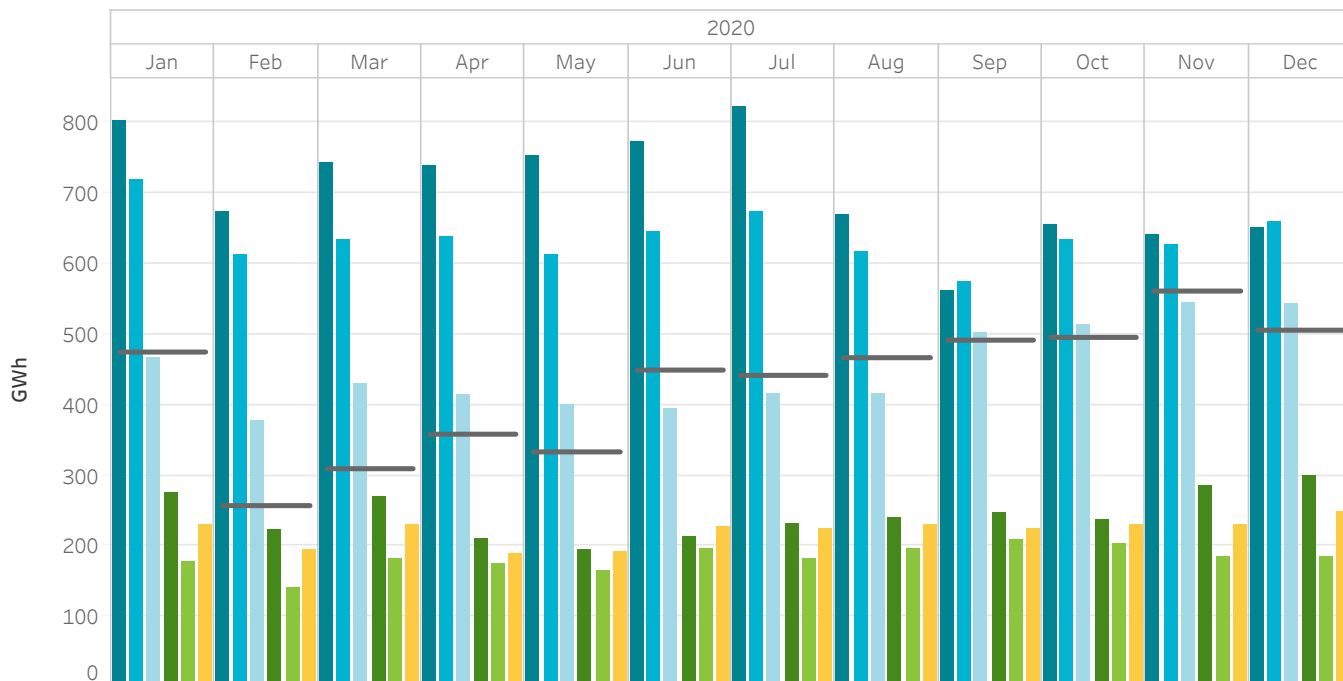
### 3.4 Monthly energy negotiated on the intraday continuous market In Portugal



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

In Spain

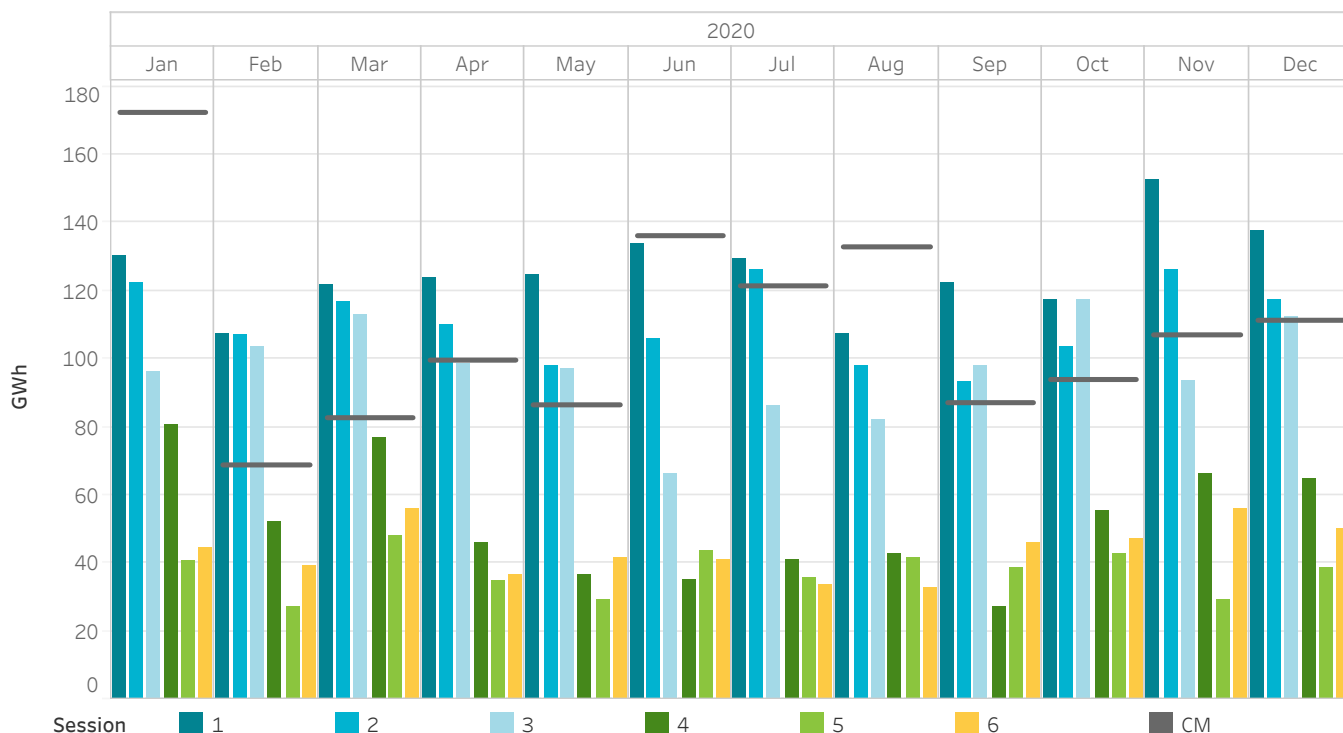
The negotiated energy is calculated as the addition of the acquisitions made in Spain plus the net exports.



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

In Portugal

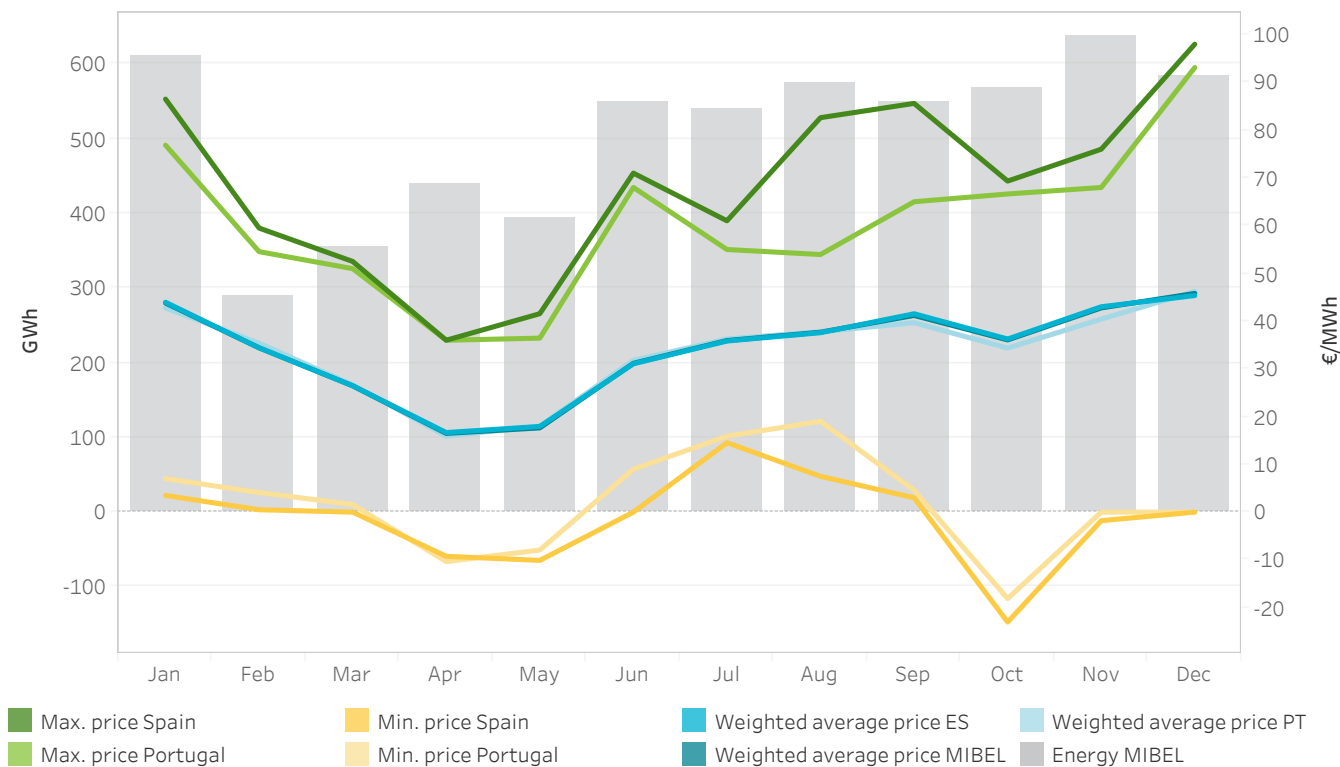
The negotiated energy is calculated as the addition of the acquisitions made in Portugal plus the net exports.



### 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

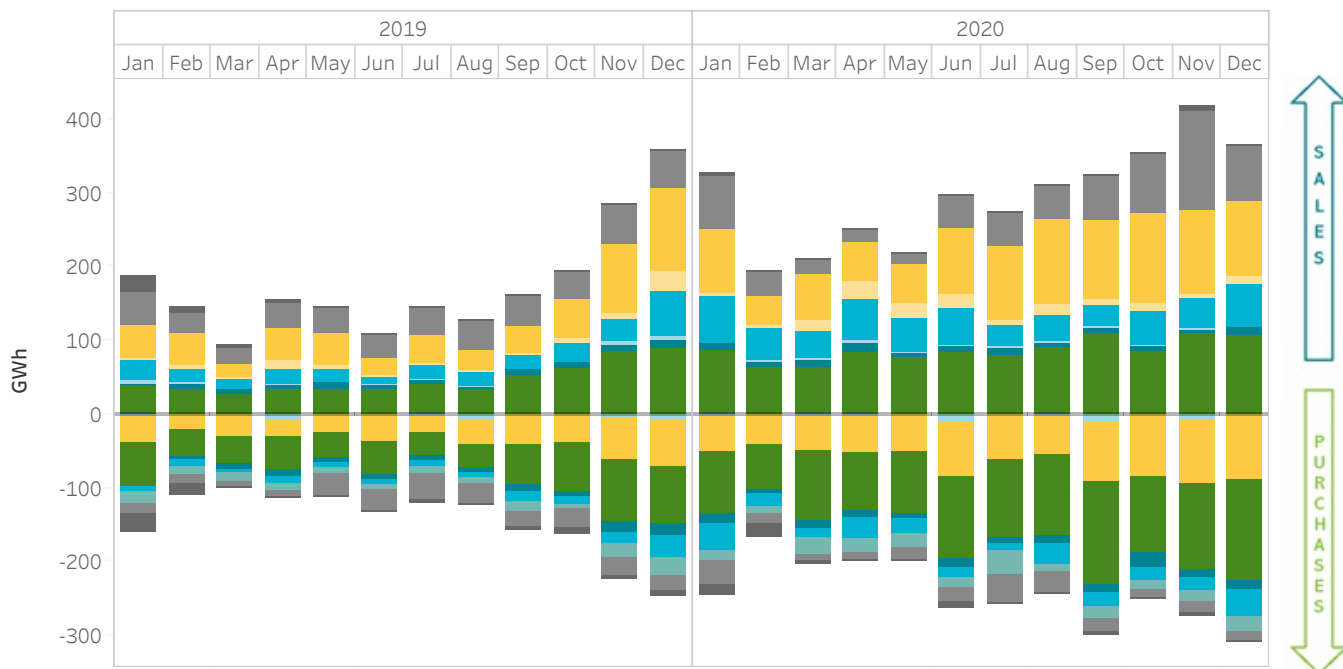
The maximum and minimum prices refer to hourly prices. The energy negotiated is calculated as the sum of acquisitions and net exports from each area.

	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	43.95	42.76	86.50	76.85	3.49	7.01	475.3	172.5	610.8
February	34.42	35.38	59.49	54.55	0.50	4.10	257.4	68.9	290.4
March	26.47	26.63	52.50	50.99	0.00	1.60	309.8	82.8	355.4
April	16.66	15.93	36.00	35.99	-9.25	-10.36	358.8	99.7	438.1
May	17.95	18.01	41.56	36.44	-10.11	-7.94	333.6	86.6	392.9
June	31.07	31.78	71.00	68.00	0.00	9.00	449.7	136.3	548.5
July	35.83	36.27	61.01	55.00	14.54	15.90	442.2	121.5	540.5
August	37.58	37.77	82.61	53.95	7.50	19.02	467.2	133.0	574.9
September	41.54	39.67	85.60	65.00	3.00	4.56	492.1	87.2	549.5
October	36.25	34.36	69.33	66.63	-23.02	-18.10	496.0	94.0	566.7
November	43.01	40.43	76.00	67.99	-1.79	0.00	561.8	107.1	637.0
December	45.36	46.23	98.00	93.12	0.00	0.00	506.3	111.4	583.7
Annual tot.	35.50	34.66	98.00	93.12	-23.02	-18.10	5,150.2	1,300.9	6,088.5

### 3.9 Transactions classifies by technologies on the intraday continuous market

In Spain

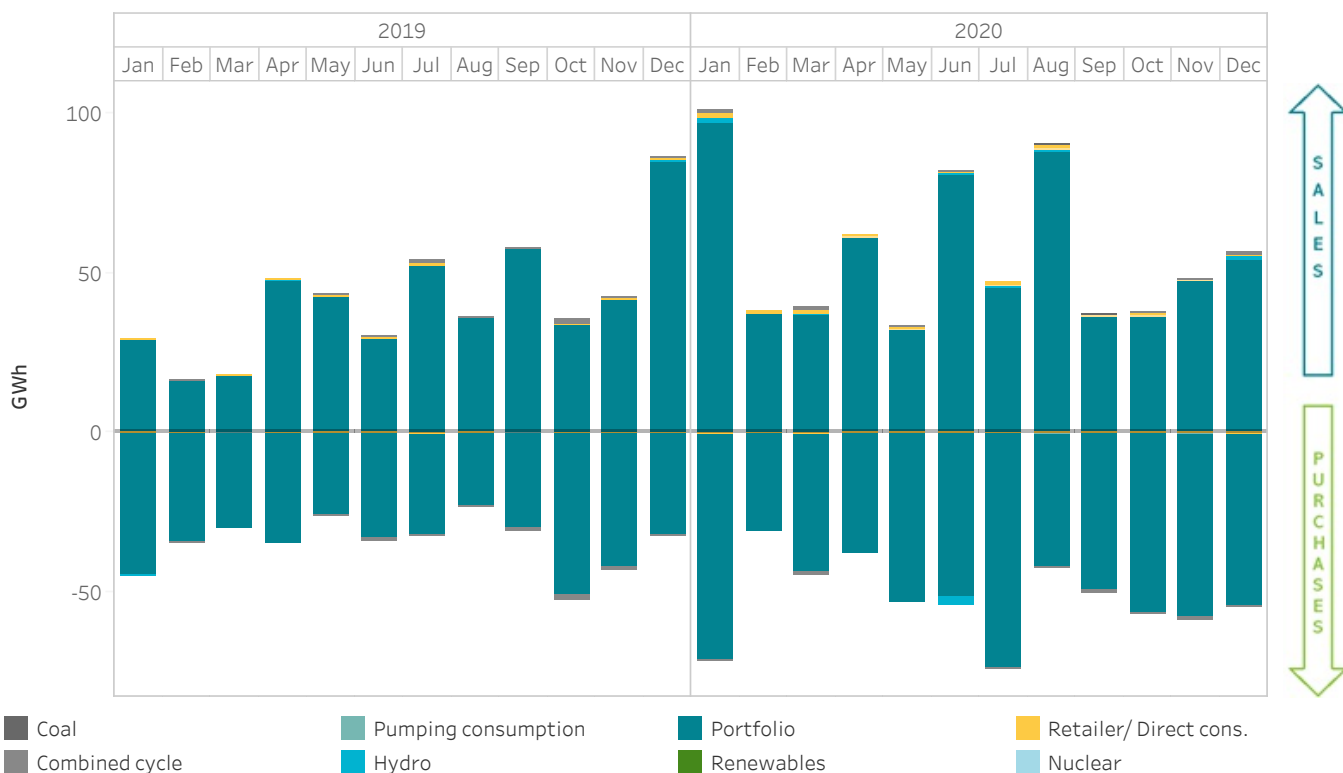
The positive values represent energy sales and the negative values represent energy purchases.



### 3.10 Transactions classifies by technologies on the intraday continuous market

In Portugal

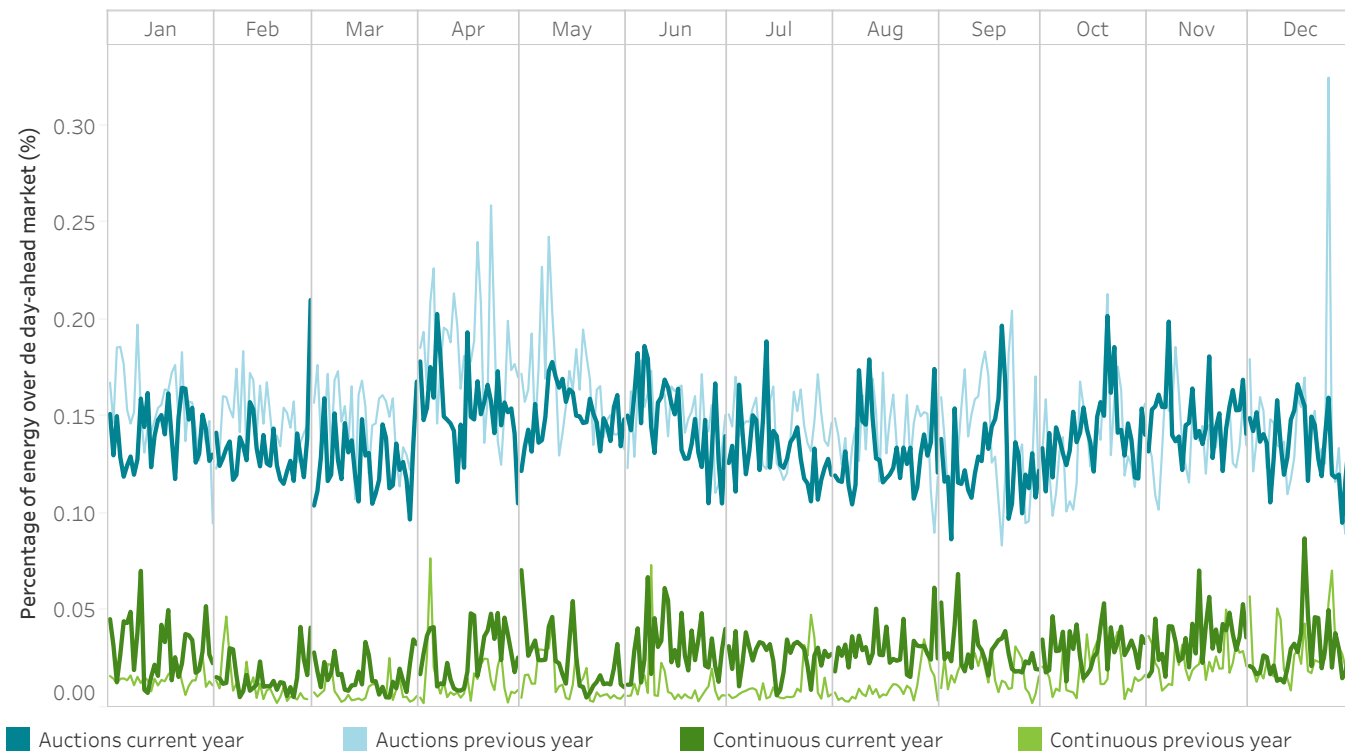
The positive values represent energy sales and the negative values represent energy purchases.



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

MIBEL

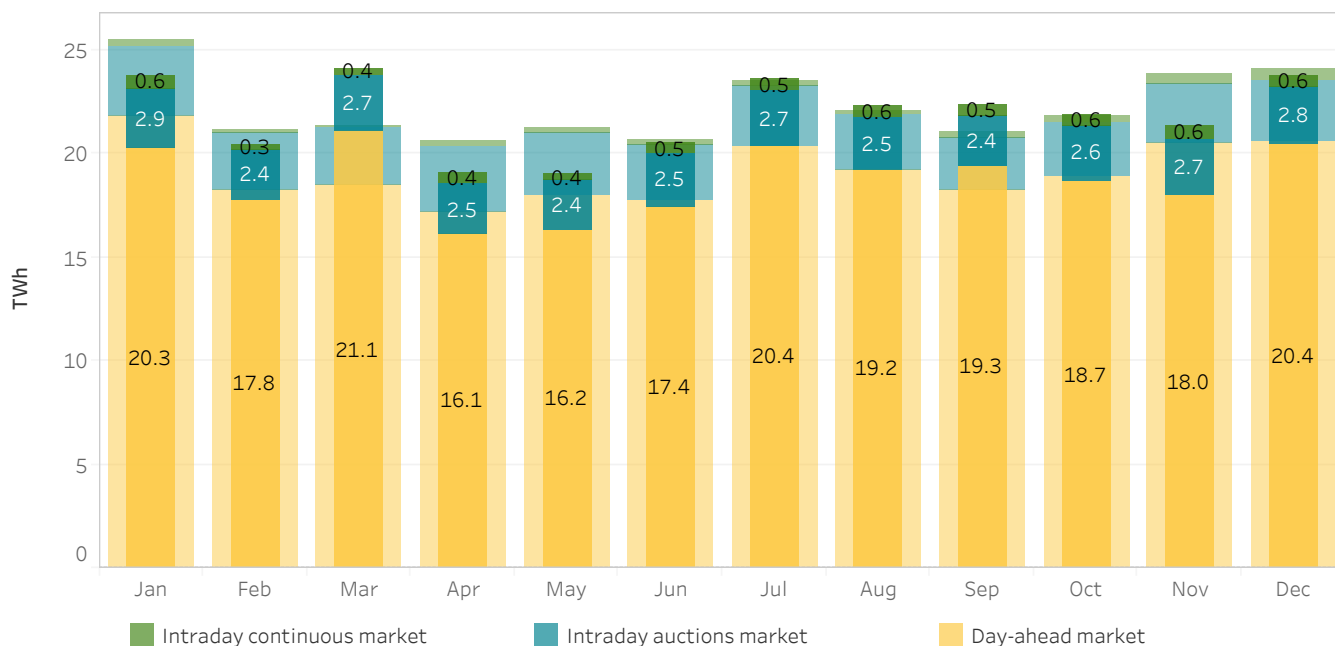
The energy negotiated is calculated as the sum of acquisitions and net exports from each area.



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

MIBEL

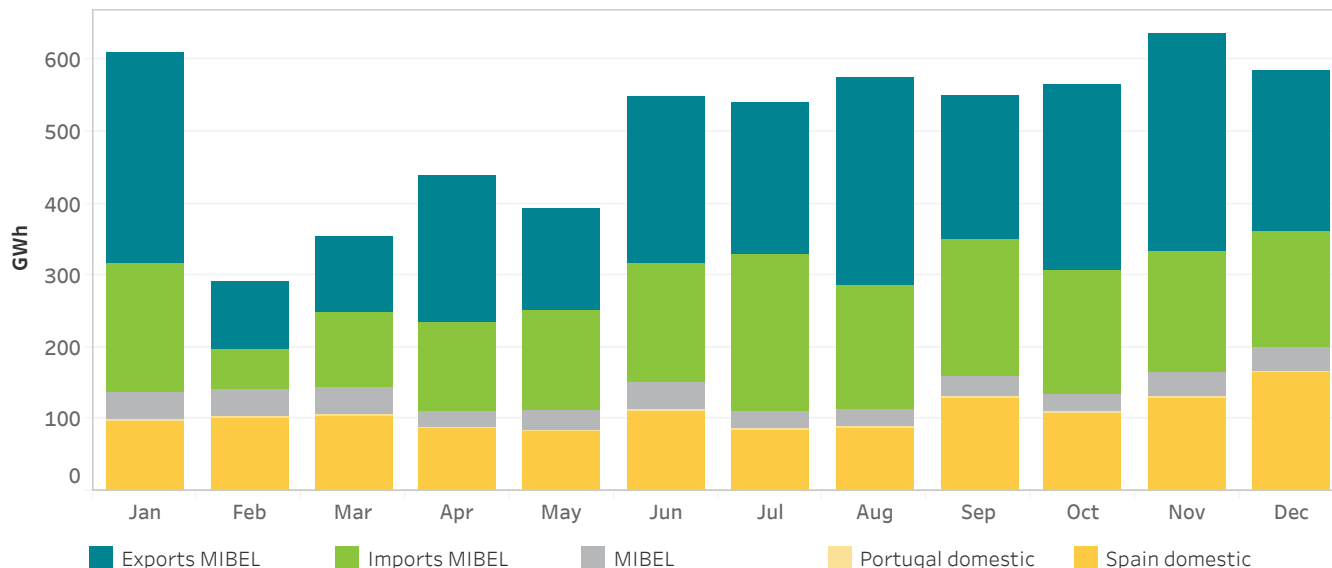
The energy negotiated is calculated as the sum of acquisitions and net exports from each area. The light-colored columns indicate values of the series for the same period from the prior year.



### 3.13 Energy negotiated on the intraday continuous market by negotiation area

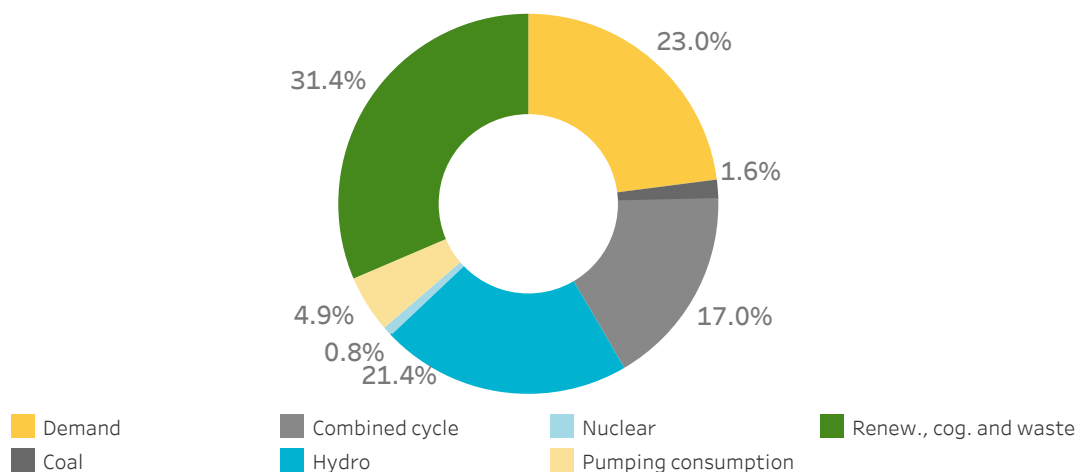
In Spain, Portugal and MIBEL

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

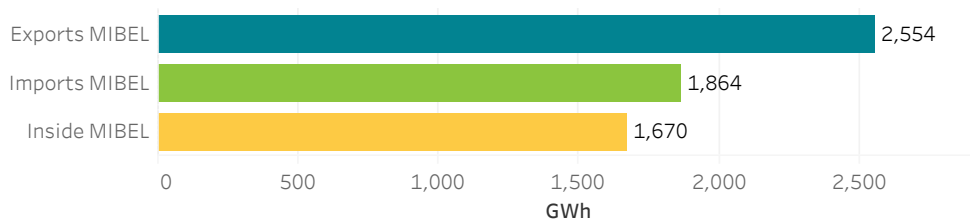


### 3.14 Technologies in the intraday continuous program (Programa Intradiario Básico de Casación Incremental Continuo, PIBCIC) and energy volume by negotiation area

MIBEL



Volume of negotiated energy by area in the MIBEL





## Annual report 2020

# 4.

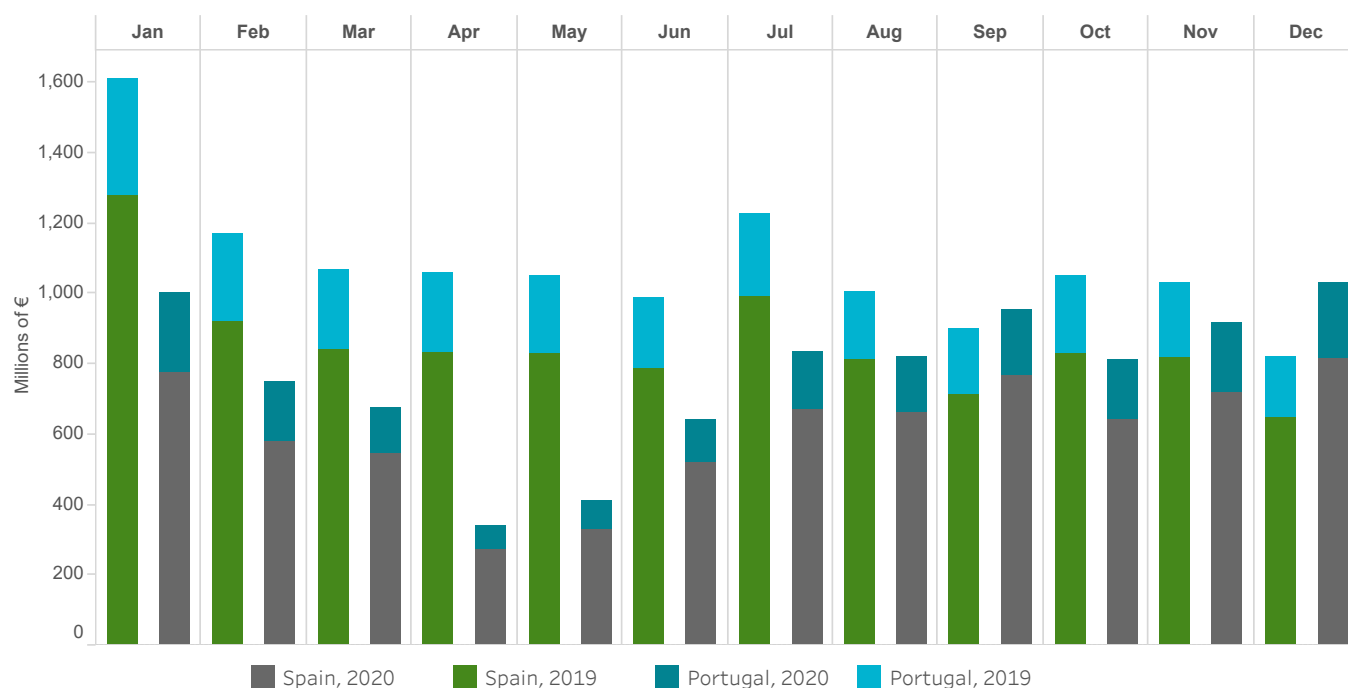
## Economic market results

- 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 €)

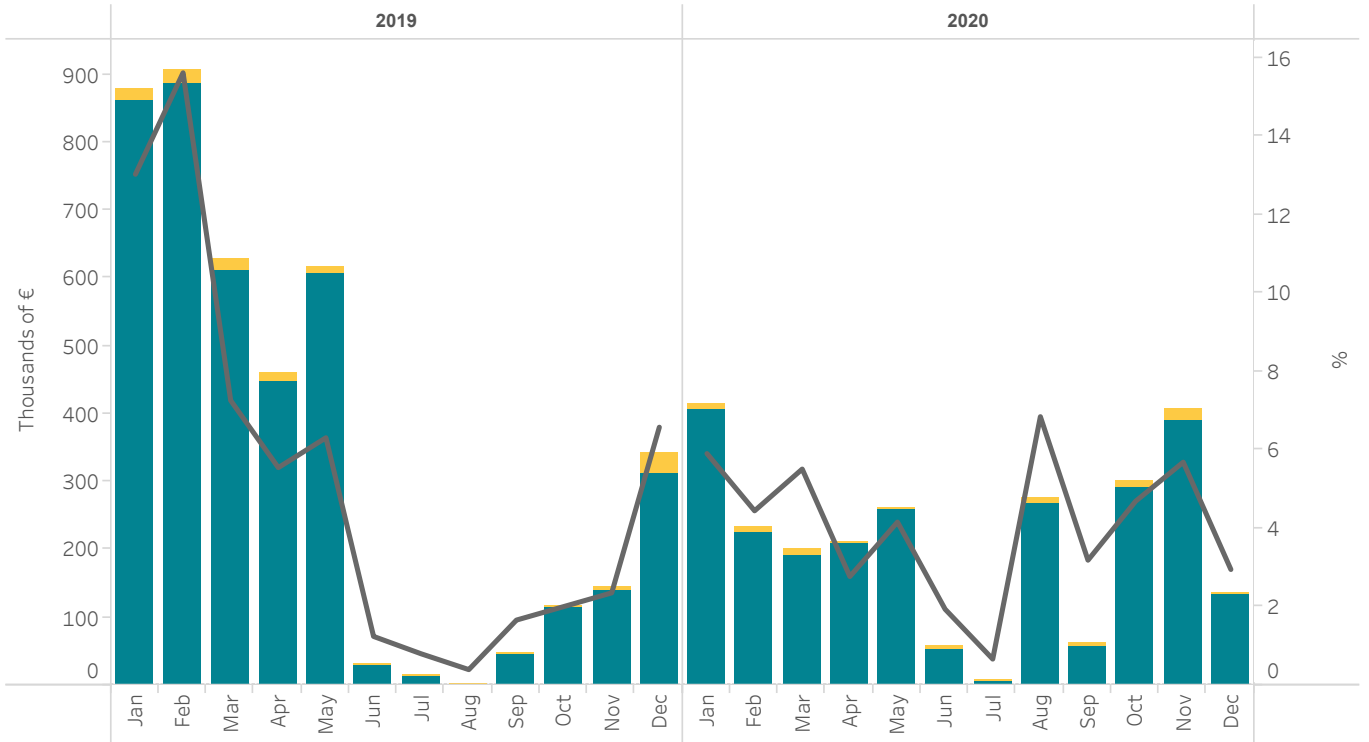
The Spanish area includes exports across the borders with France, Morocco and Andorra.



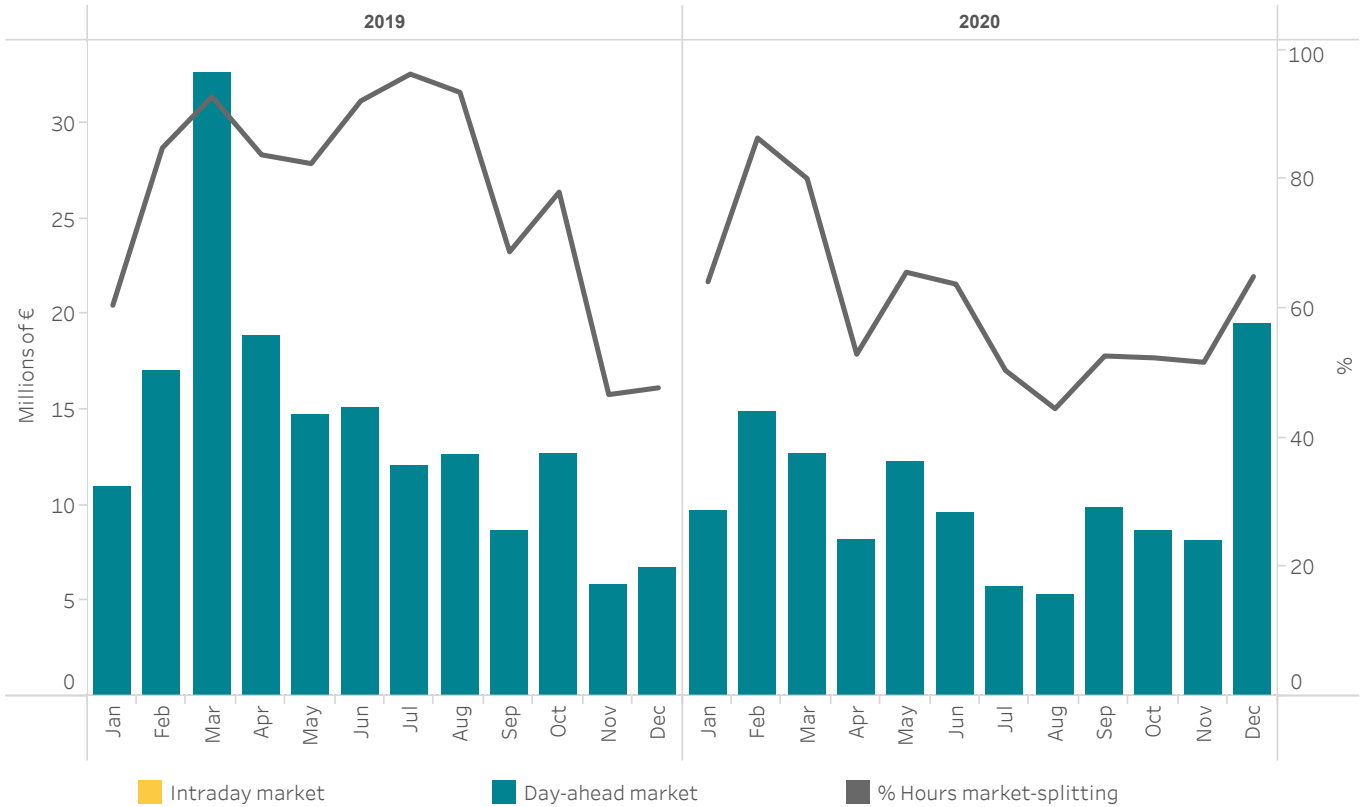
Economic volume (Millions of €)									
Month	Spain				Portugal				Total
	Day-ahead market	Intraday auctions market	Continuous intraday market	Total Country	Day-ahead market	Intraday auctions market	Continuous intraday market	Total Country	
Jan	648	106	24	778	205	14	3	222	999
Feb	496	75	9	580	155	10	1	167	747
Mar	471	67	8	546	122	9	1	132	678
Apr	225	41	7	273	65	4	0	69	342
May	276	48	6	330	77	6	1	84	414
Jun	435	71	16	522	113	7	1	121	643
Jul	570	84	17	671	150	10	3	163	834
Aug	559	84	20	664	148	8	1	158	822
Sep	654	93	21	768	172	11	2	184	952
Oct	538	84	19	641	152	13	2	168	808
Nov	598	98	25	721	176	15	2	193	914
Dec	682	107	25	814	197	15	2	214	1,028
Year 2020	6,152	959	197	7,307	1,733	122	19	1,875	9,182

## 4.2 Congestion revenue

Spanish-Portuguese interconnection



Spanish-French interconnection

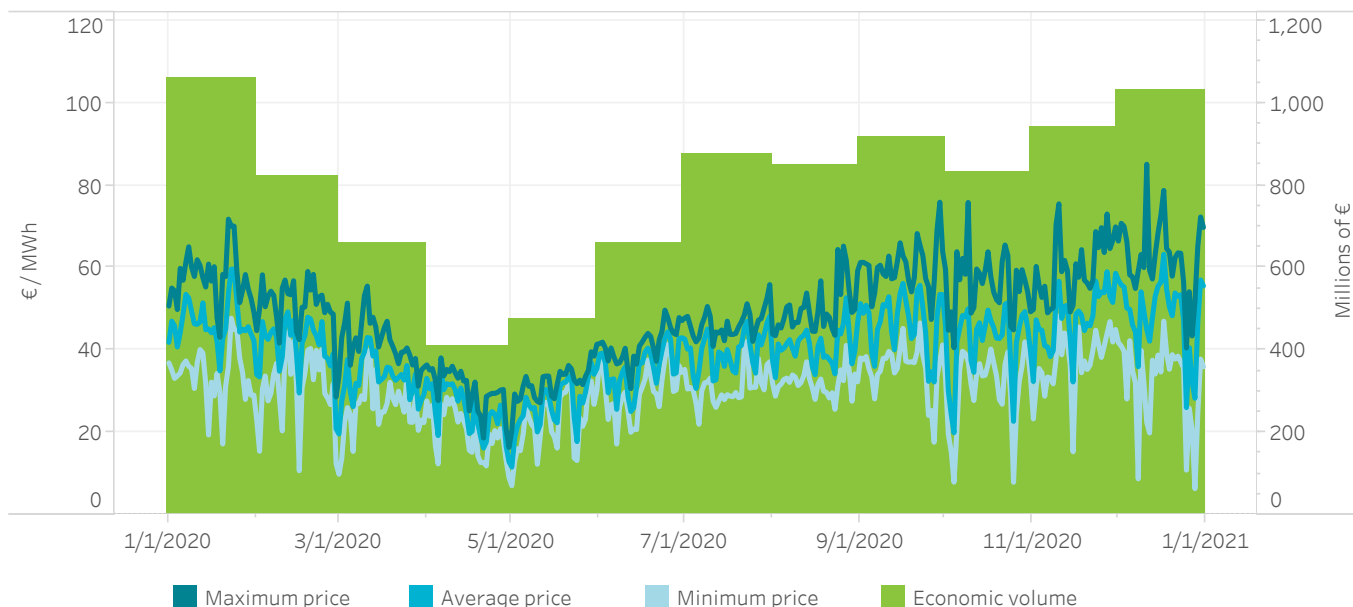


■ Intraday market

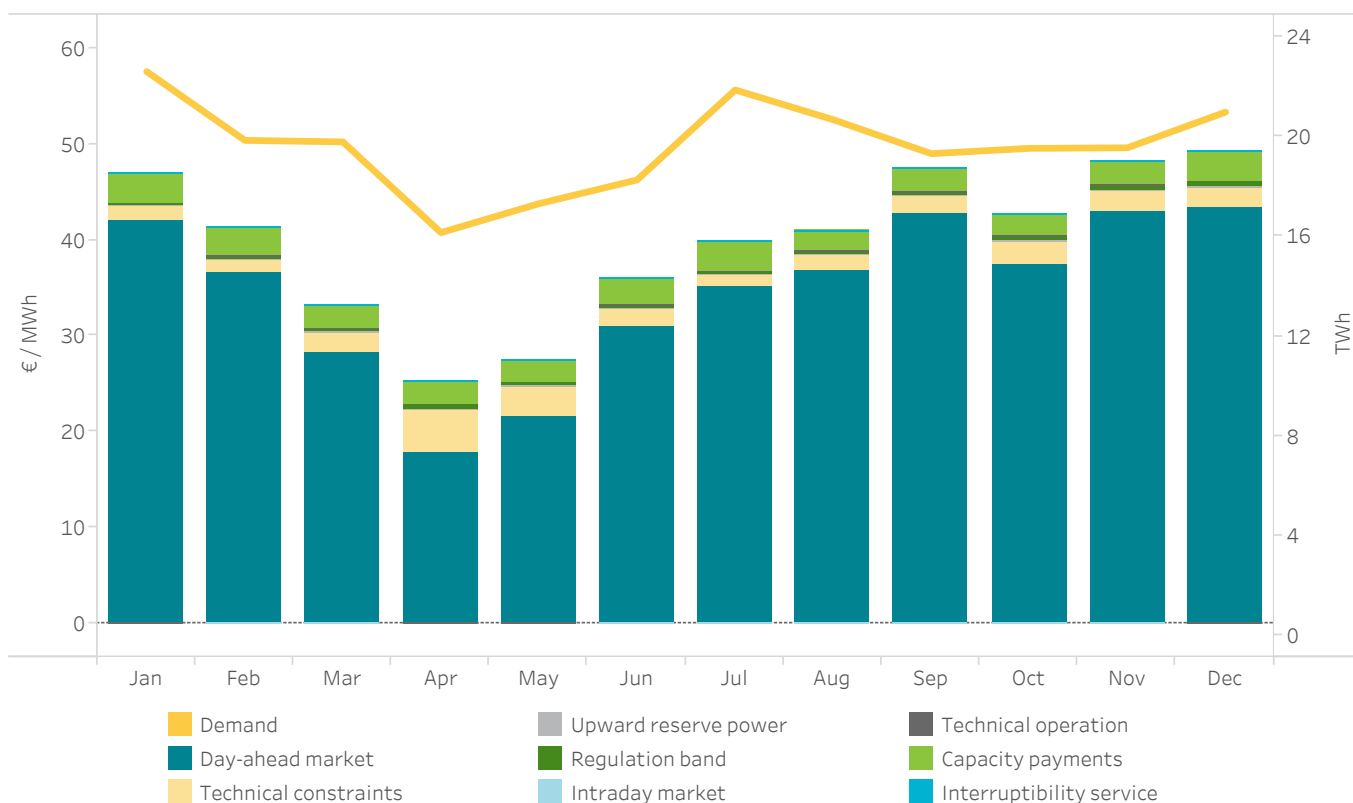
■ Day-ahead market

■ % Hours market-splitting

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



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



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

	Reference retailers		Free market		National demand	
	€/MWh	%	€/MWh	%	€/MWh	%
Day-ahead market	35.10	83.76	35.22	87.64	35.20	87.17
Constraints	2.14	5.10	2.12	5.28	2.12	5.26
Upward reserve power	0.00	0.00	0.00	0.00	0.00	0.00
Regulation band	0.40	0.96	0.40	1.00	0.40	1.00
Intraday market	0.00	0.01	-0.02	-0.05	-0.02	-0.04
Technical operation	0.01	0.03	0.02	0.05	0.02	0.05
Capacity payments	4.23	10.10	2.42	6.03	2.63	6.52
Interruptibility service	0.02	0.04	0.02	0.04	0.02	0.04
<b>Total</b>	<b>41.91</b>	<b>100.00</b>	<b>40.18</b>	<b>100.00</b>	<b>40.38</b>	<b>100.00</b>

### National demand (€/MWh)

Month	Day-ahead market	Technical constraints	Upward reserve power	Regulation band	Intraday market	Technical operation	Capacity payments	Interruptibil. service	Average final price
January	42.06	1.50	0.00	0.30	-0.02	-0.01	3.11	0.03	46.97
February	36.54	1.50	0.00	0.33	-0.03	0.04	2.98	0.03	41.40
March	28.28	2.15	0.00	0.35	-0.01	0.05	2.39	0.03	33.24
April	17.81	4.61	0.00	0.45	-0.02	-0.01	2.42	0.04	25.30
May	21.70	3.04	0.00	0.38	-0.01	-0.06	2.24	0.04	27.33
June	31.00	1.83	0.00	0.39	-0.01	0.02	2.76	0.04	36.01
July	35.20	1.22	0.00	0.33	-0.01	0.03	3.22	0.00	40.00
August	36.75	1.76	0.00	0.35	-0.01	0.06	2.12	0.00	41.03
September	42.75	1.89	0.00	0.41	-0.02	0.01	2.35	0.00	47.40
October	37.49	2.39	0.00	0.53	-0.04	0.02	2.26	0.00	42.65
November	42.89	2.32	0.00	0.49	-0.03	0.07	2.43	0.00	48.17
December	43.52	2.04	0.00	0.54	-0.02	-0.01	3.10	0.00	49.18

Year	Day-ahead market	Technical constraints	Upward reserve power	Regulation band	Intraday market	Technical operation	Capacity payments	Interruptibil. service	Average final price
2019	48.58	1.00	0.06	0.37	-0.02	0.03	2.64	0.74	53.41
2020	35.20	2.12	0.00	0.40	-0.02	0.02	2.63	0.02	40.38

## Free market (€/MWh)

Month	Day-ahead market	Technical constraints	Upward reserve power	Regulation band	Intraday market	Technical operation	Capacity payments	Interruptibil. service	Average final price
January	42.04	1.49	0.00	0.30	-0.02	-0.01	2.96	0.03	46.79
February	36.53	1.50	0.00	0.33	-0.03	0.04	2.83	0.03	41.24
March	28.27	2.14	0.00	0.35	-0.01	0.05	2.14	0.03	32.98
April	17.74	4.63	0.00	0.45	-0.02	0.00	2.13	0.04	24.97
May	21.74	3.04	0.00	0.37	-0.01	-0.06	1.98	0.04	27.11
June	31.00	1.84	0.00	0.39	-0.01	0.01	2.58	0.04	35.84
July	35.20	1.21	0.00	0.34	-0.01	0.03	3.09	0.00	39.86
August	36.75	1.77	0.00	0.35	-0.01	0.07	1.84	0.00	40.76
September	42.76	1.89	0.00	0.41	-0.02	0.01	2.14	0.00	47.20
October	37.48	2.39	0.00	0.53	-0.04	0.02	2.03	0.00	42.41
November	42.85	2.32	0.00	0.49	-0.04	0.07	2.20	0.00	47.89
December	43.51	2.04	0.00	0.54	-0.02	0.00	2.92	0.00	48.99

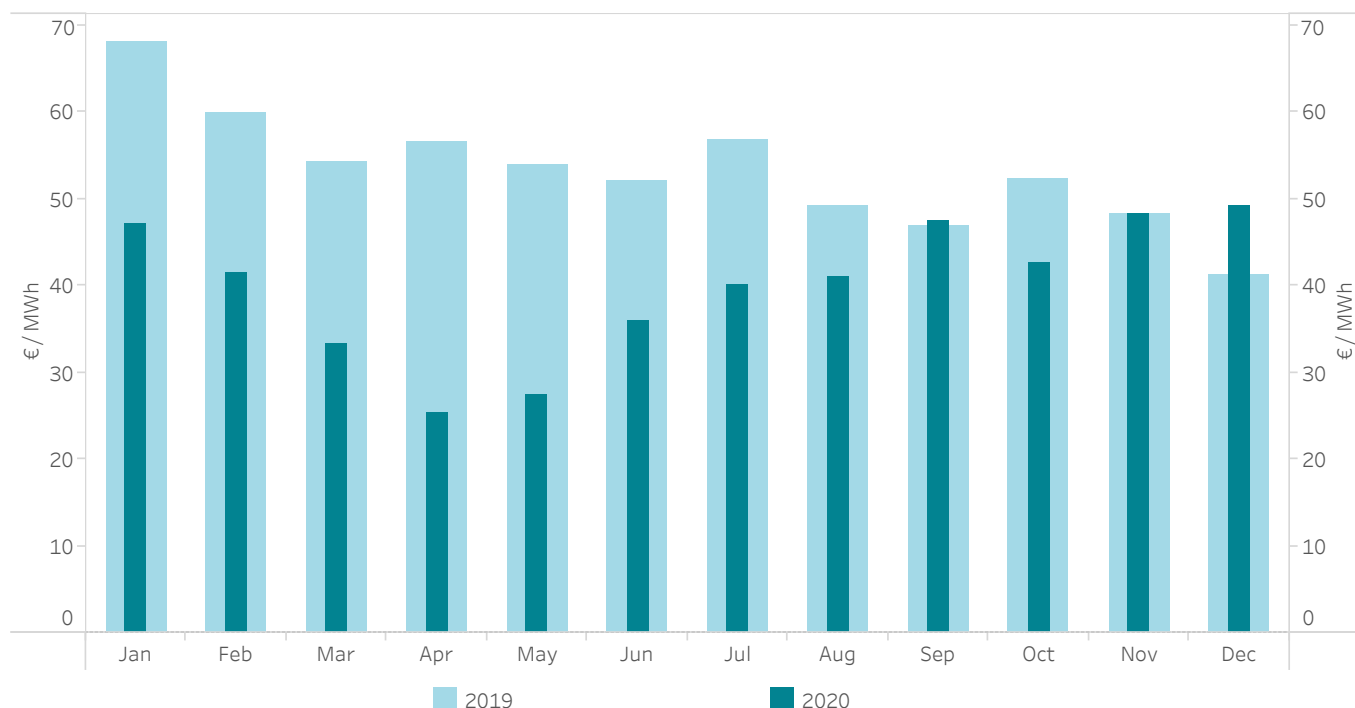
Year	Day-ahead market	Technical constraints	Upward reserve power	Regulation band	Intraday market	Technical operation	Capacity payments	Interruptibil. service	Average final price
2019	48.56	1.00	0.06	0.36	-0.02	0.03	2.45	0.74	53.18
2020	35.22	2.12	0.00	0.40	-0.02	0.02	2.42	0.02	40.18

## Reference retailers (€/MWh)

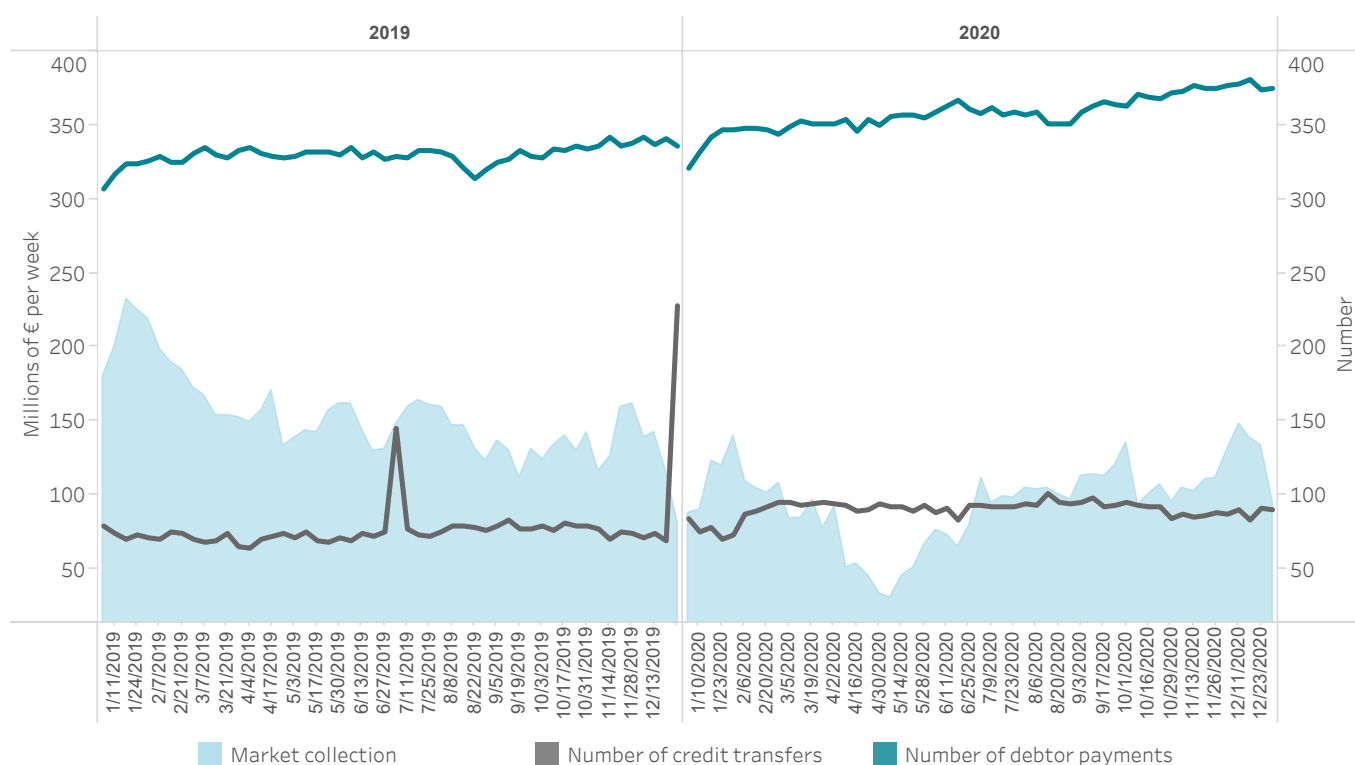
Month	Day-ahead market	Technical constraints	Upward reserve power	Regulation band	Intraday market	Technical operation	Capacity payments	Interruptibil. service	Average final price
January	42.22	1.54	0.00	0.30	0.00	0.00	4.12	0.03	48.21
February	36.60	1.49	0.00	0.33	0.00	0.03	4.12	0.03	42.61
March	28.30	2.16	0.00	0.35	0.00	0.03	4.16	0.03	35.03
April	18.28	4.45	0.00	0.44	0.00	-0.05	4.21	0.04	27.38
May	21.37	2.98	0.00	0.39	0.00	-0.05	4.26	0.04	28.99
June	30.98	1.81	0.00	0.39	0.01	0.05	4.27	0.04	37.53
July	35.23	1.22	0.00	0.33	0.01	0.01	4.30	0.00	41.10
August	36.68	1.75	0.00	0.35	0.01	0.05	4.29	0.00	43.13
September	42.68	1.92	0.00	0.42	0.00	0.01	4.32	0.00	49.35
October	37.58	2.37	0.00	0.54	0.00	0.01	4.31	0.00	44.80
November	43.27	2.29	0.00	0.48	0.00	0.07	4.26	0.00	50.37
December	43.59	2.05	0.00	0.54	0.00	-0.03	4.25	0.00	50.40

Year	Day-ahead market	Technical constraints	Upward reserve power	Regulation band	Intraday market	Technical operation	Capacity payments	Interruptibil. service	Average final price
2019	48.80	1.01	0.06	0.38	0.00	0.03	4.21	0.74	55.22
2020	35.10	2.14	0.00	0.40	0.00	0.01	4.23	0.02	41.91

## 4.6 Final average price of the Spanish electricity system - National demand



## 4.7 Tendency of collections on the market



## Annual report 2020

# 5.

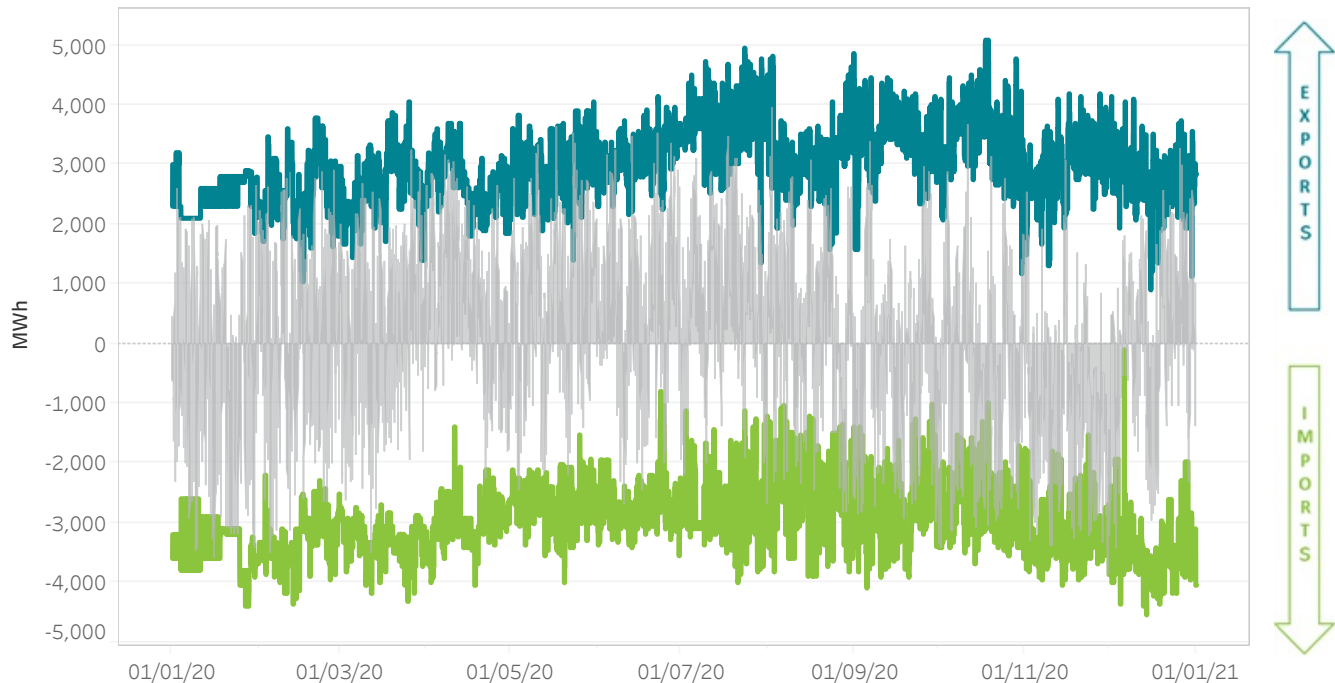
## International exchanges

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

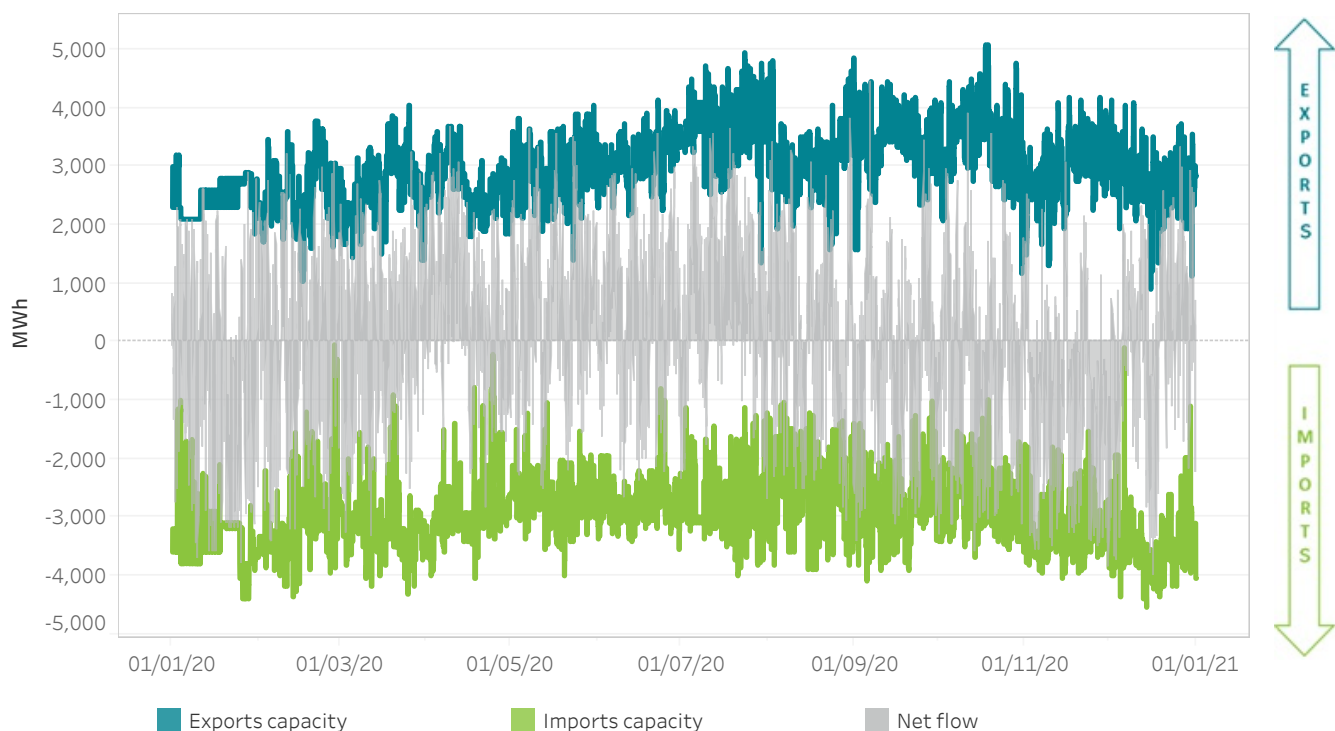




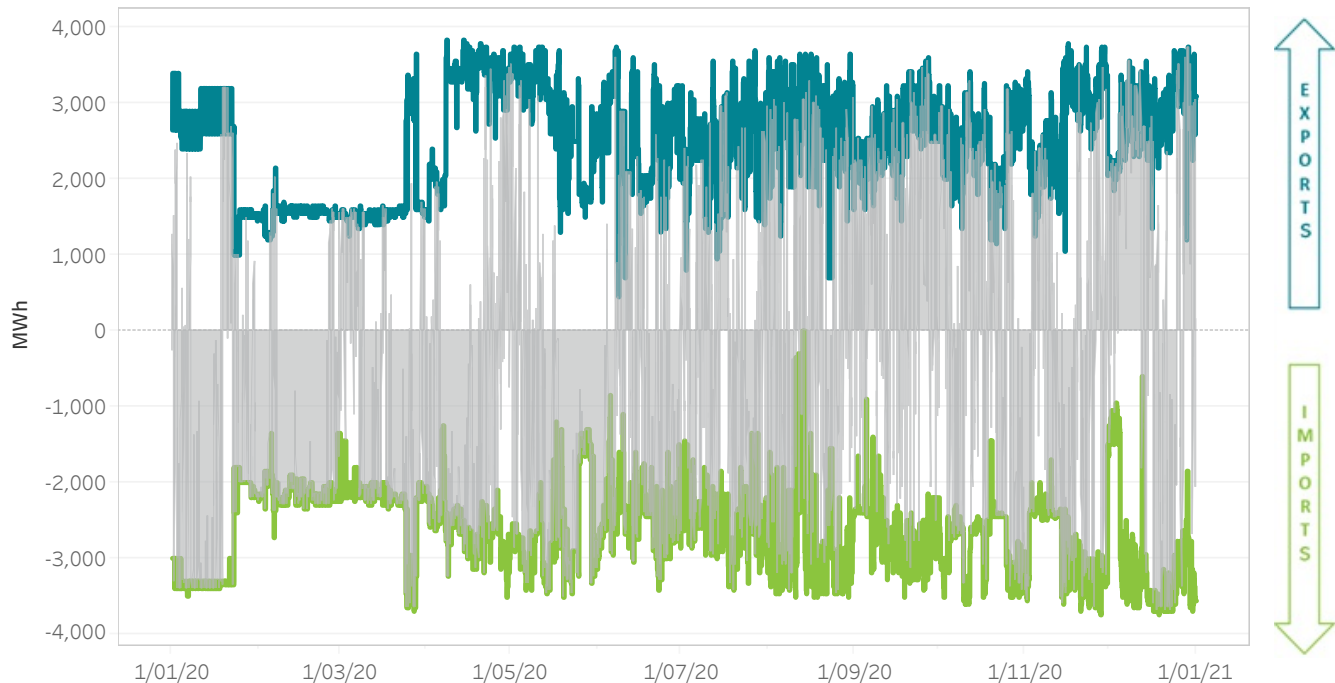
## 5.1 Interconnection flow and capacity with Portugal in the day-ahead operations program (Programa diario base de funcionamiento, PDBF)



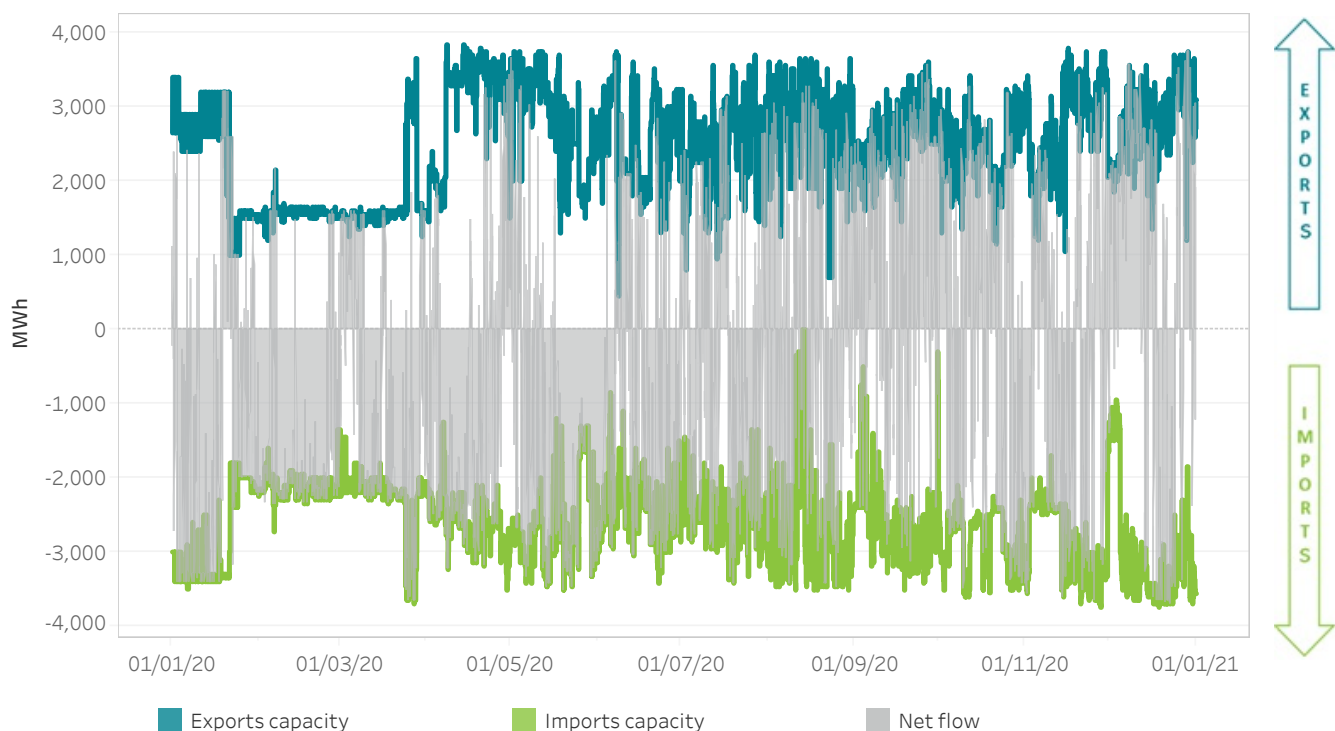
## 5.2 Interconnection flow and capacidad with Portugal in the final hourly program (Programa horario final, PHFC) after the continuous market



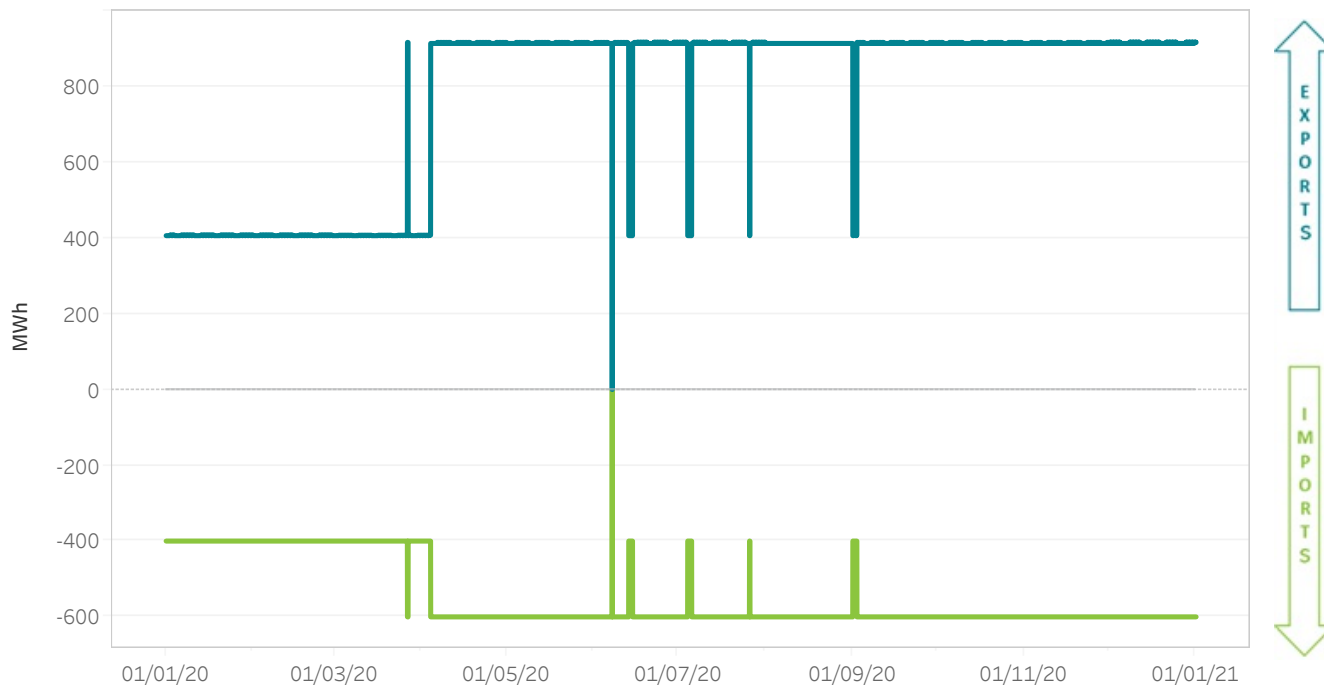
### 5.3 Interconnection flow and capacity with France in the day-ahead operations program (Programa diario base de funcionamiento, PDBF)



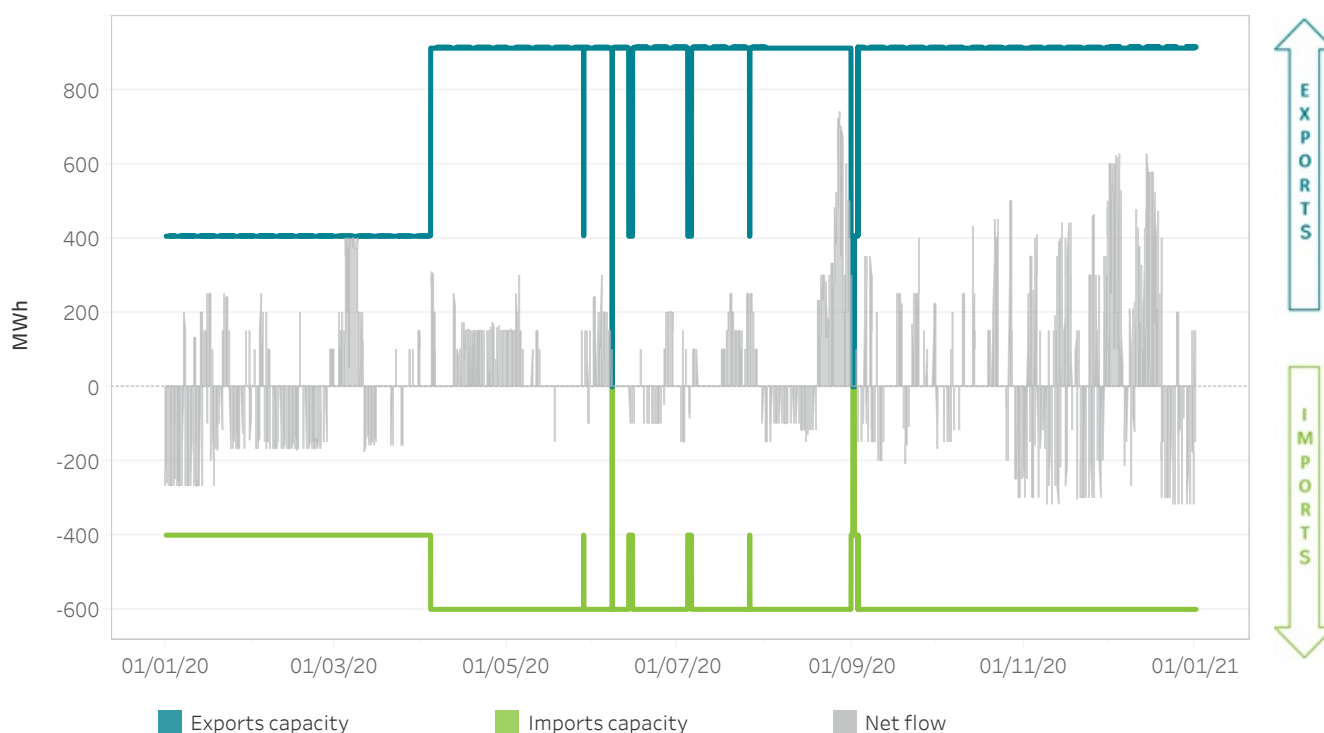
### 5.4 Interconnection flow and capacidad with France in the final hourly program (Programa horario final, PHFC) after the continuous market



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



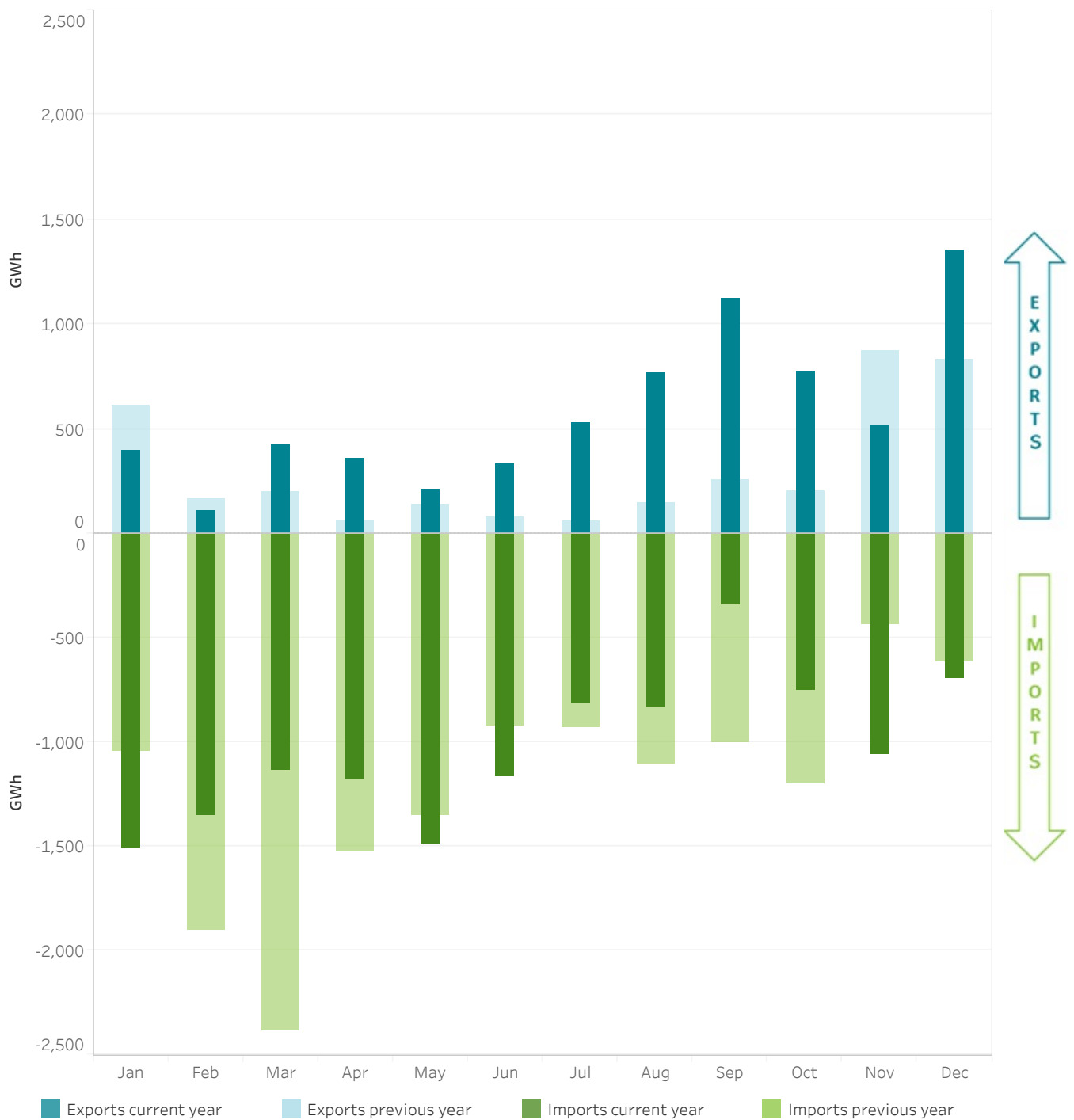
## 5.6 Interconnection flow and capacidad with Morocco in the final hourly program (Programa horario final, PHFC) after the continuous market



## 5.7 Total exports and imports

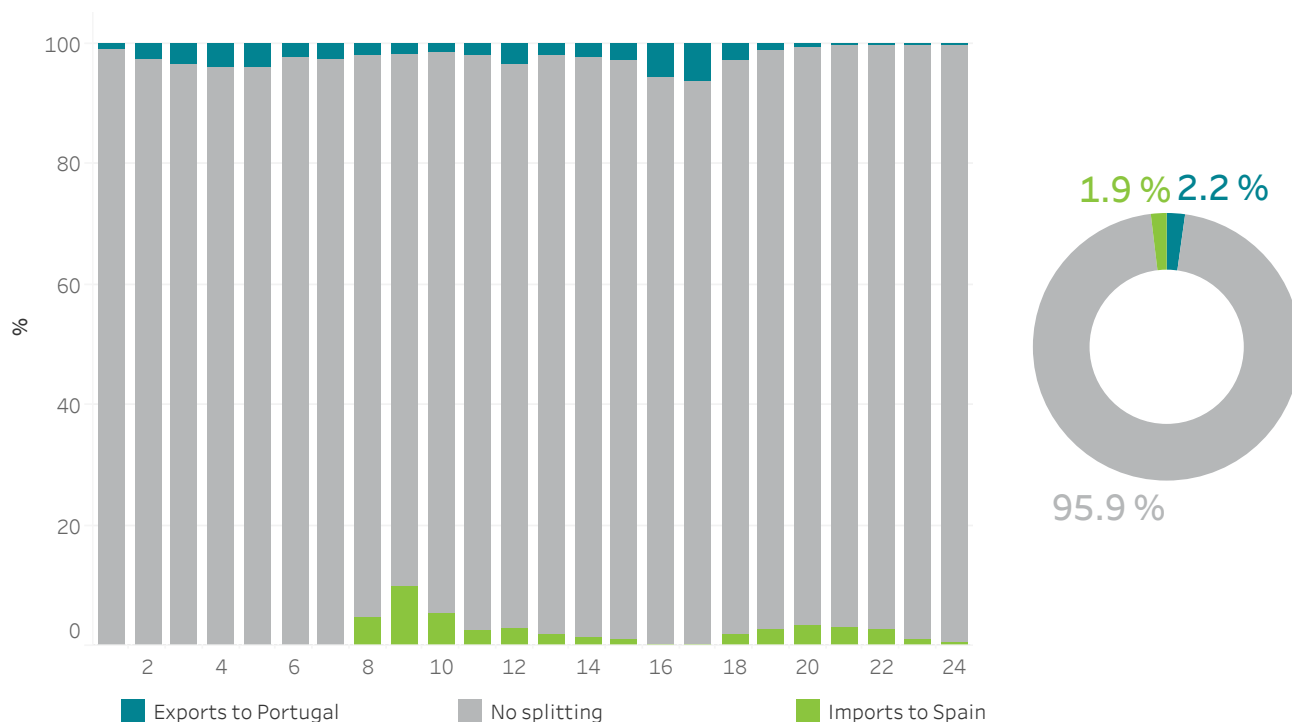
MIBEL

	2020	2019
Exports [GWh]	6,878.9	3,623.0
Imports [GWh]	12,335.0	14,425.8



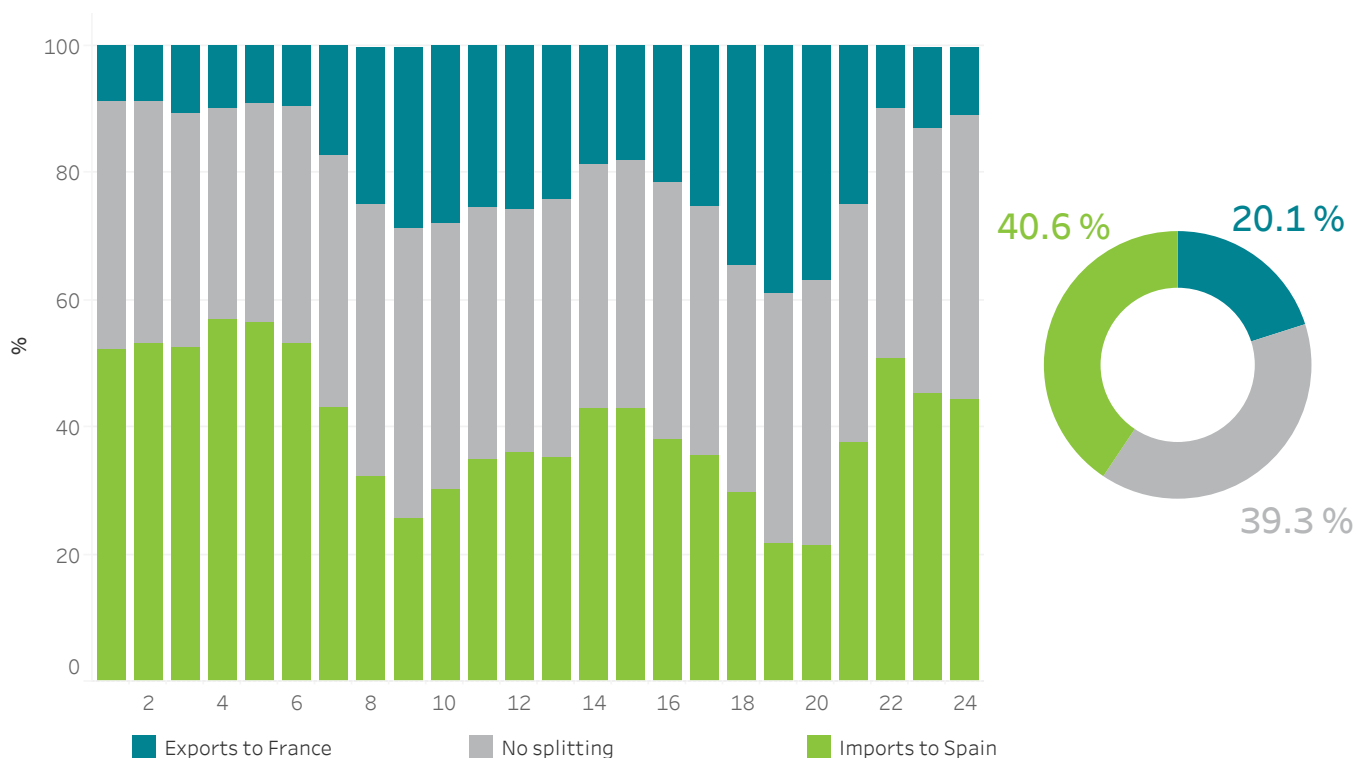
## 5.8 Market coupling on the Spain/Portugal border

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



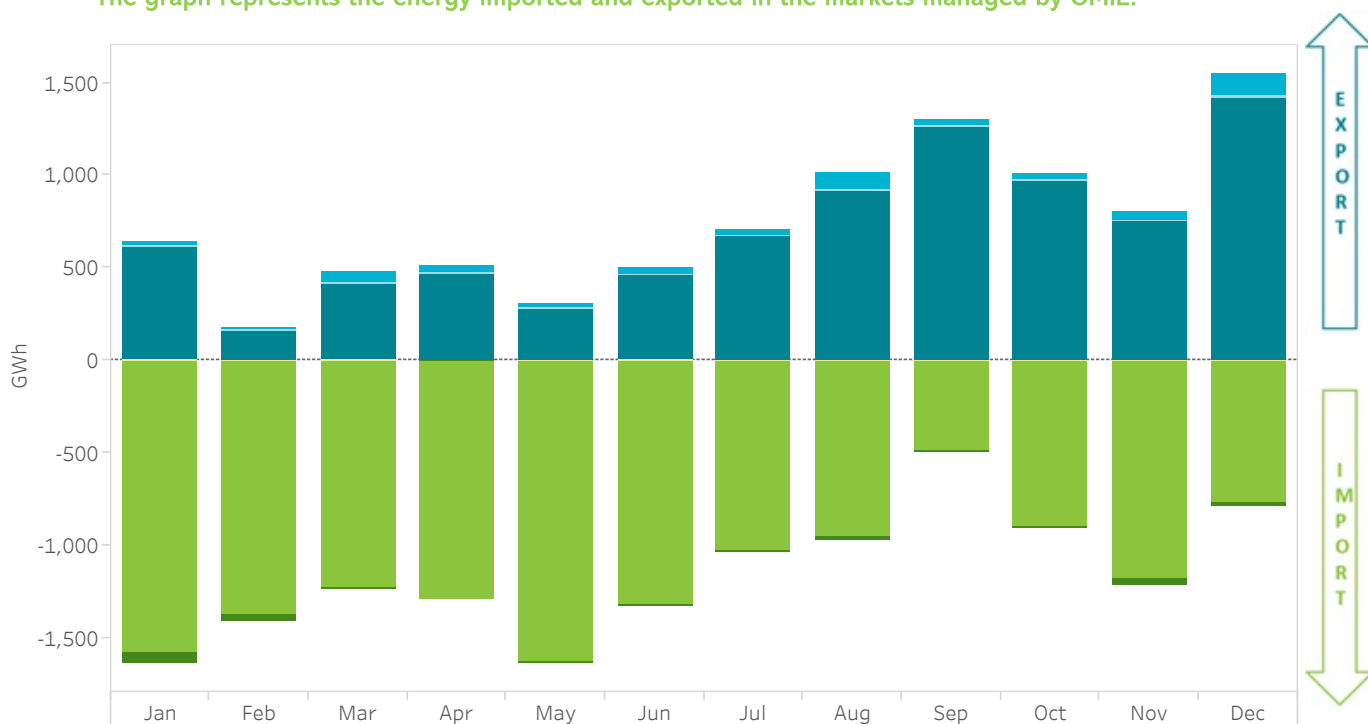
## 5.9 Market coupling on the Spain/France border

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



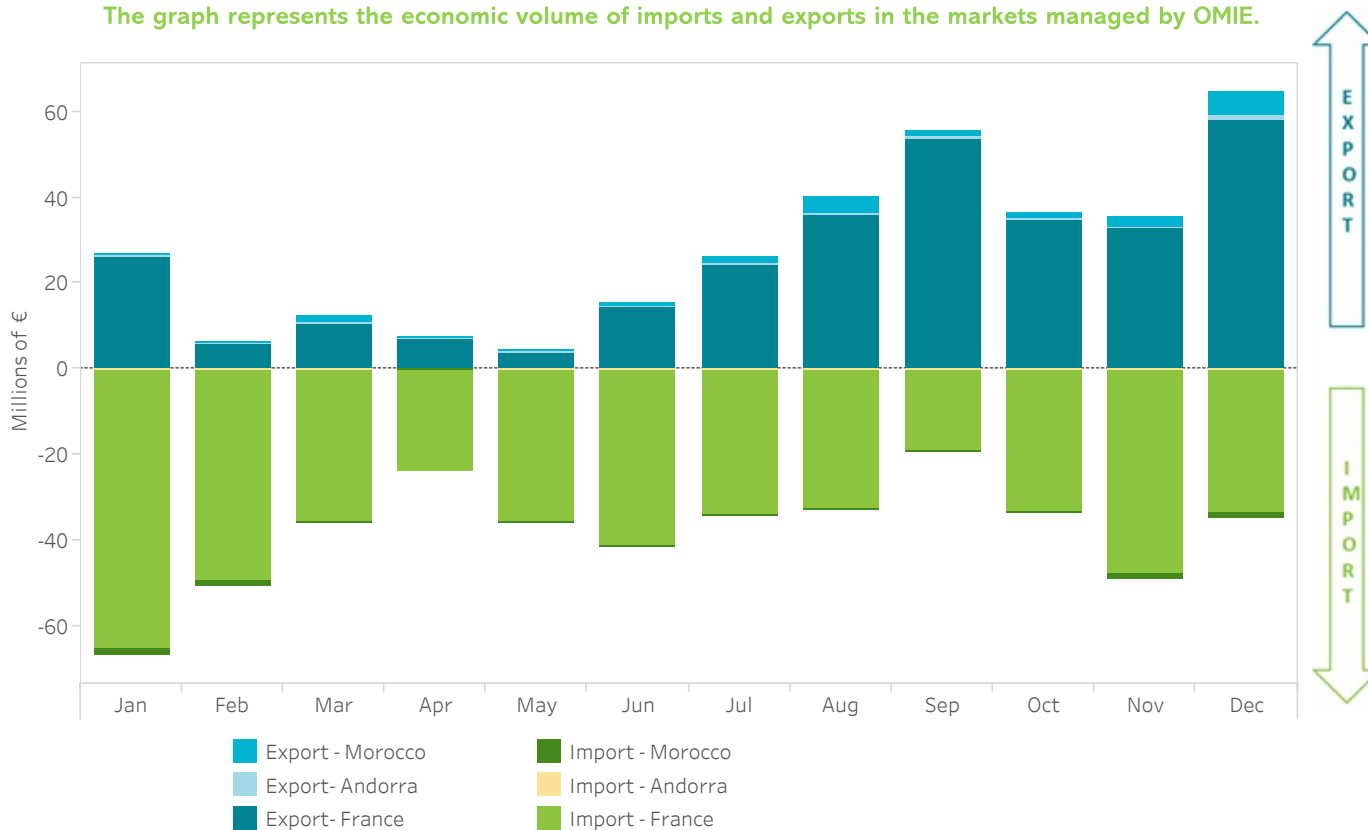
## 5.10 Monthly energies exchanged on the MIBEL borders

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



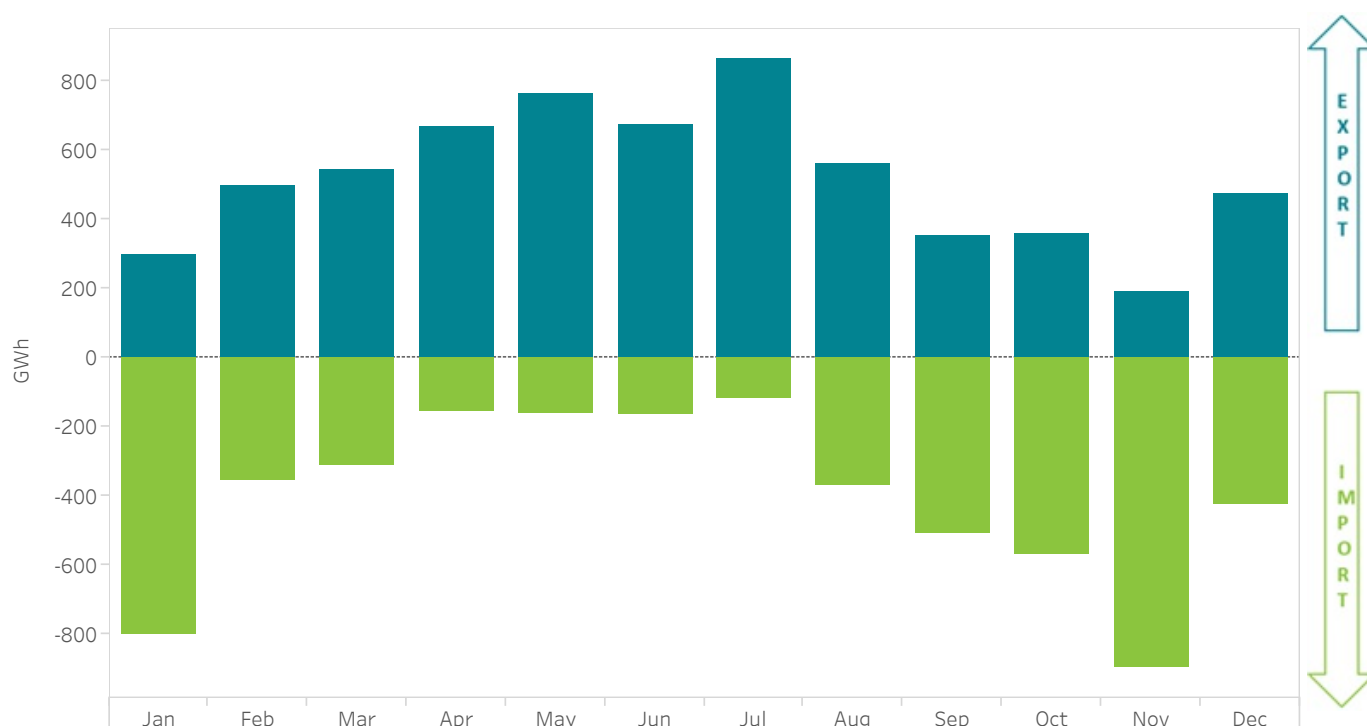
## 5.11 Monthly economic volumes exchanged on the MIBEL borders

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



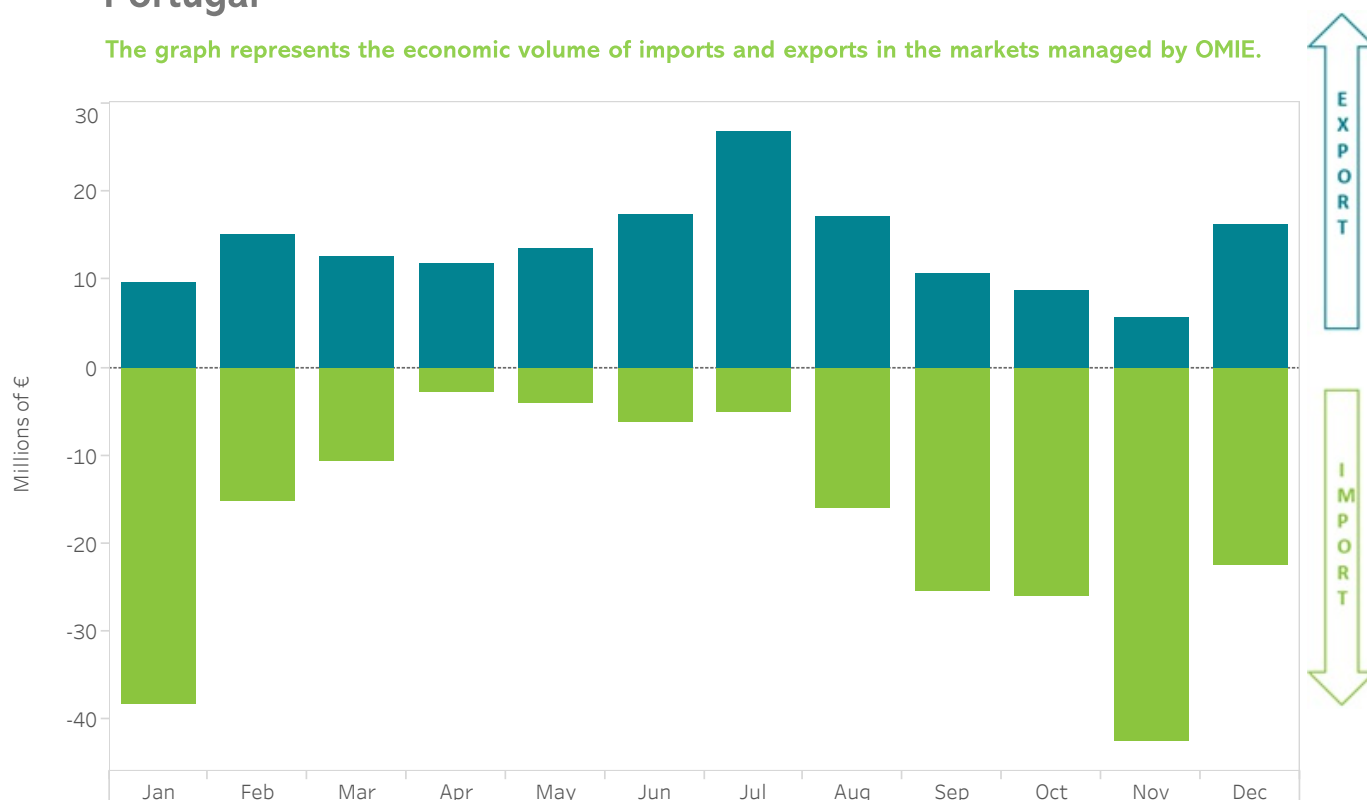
## 5.12 Monthly energies exchanged on the border with Portugal

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



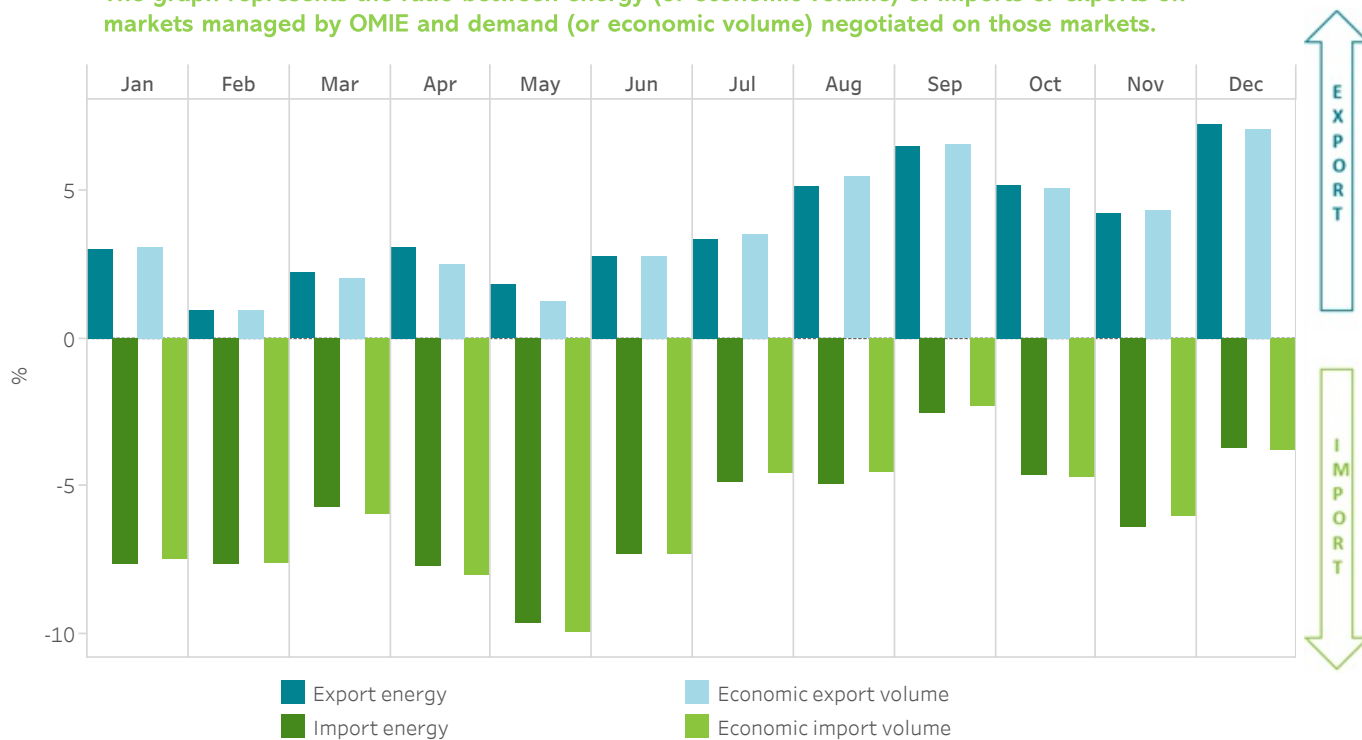
## 5.13 Monthly economic volumes exchanged on the border with Portugal

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

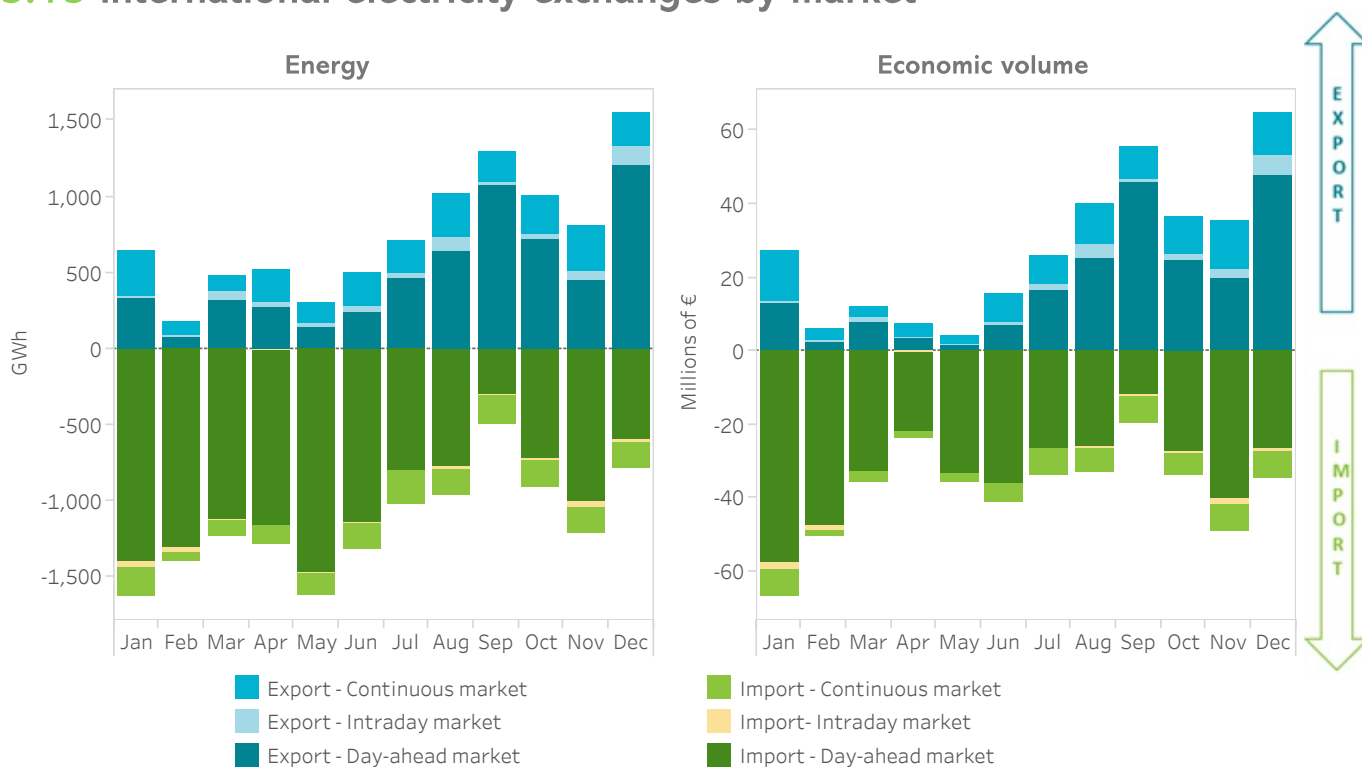


## 5.14 Impact of imports and exports on the MIBEL on market demand

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





## Annual report 2020

# 6.

## International markets

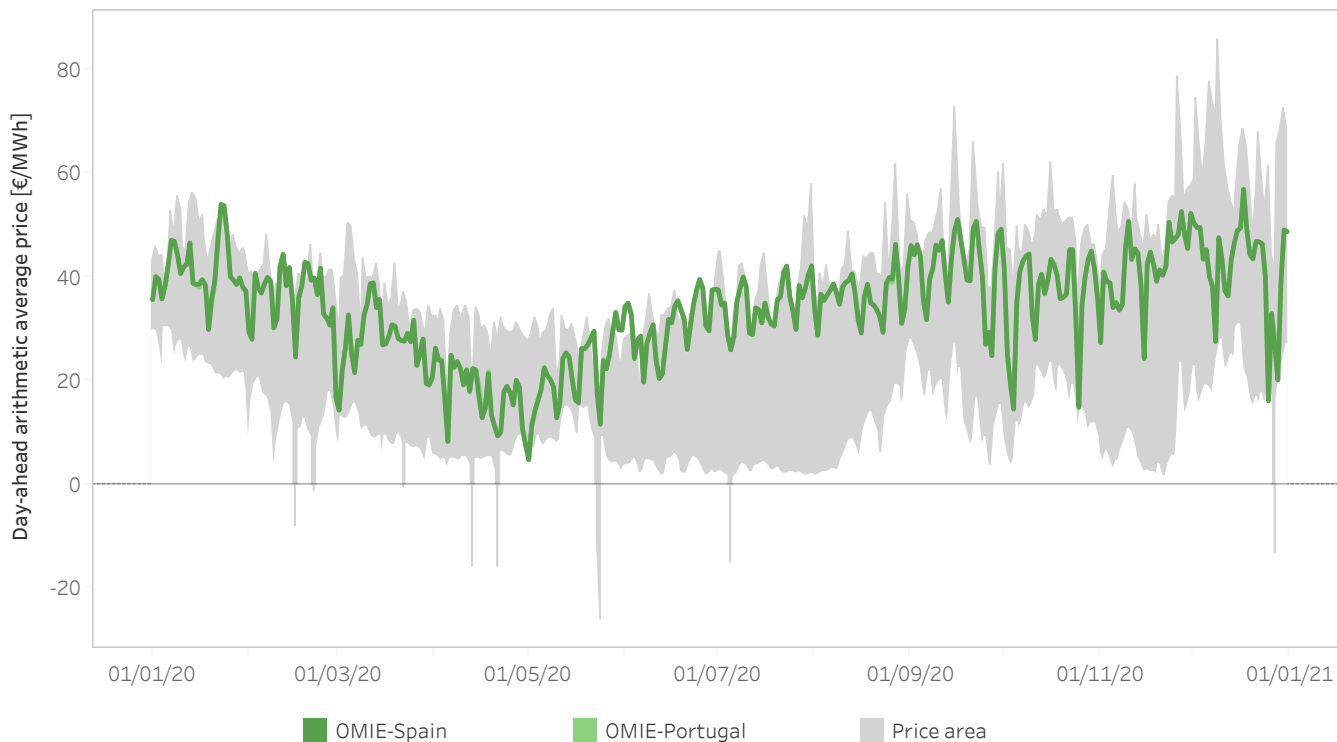
- Prices and energy in the international markets
- Maps



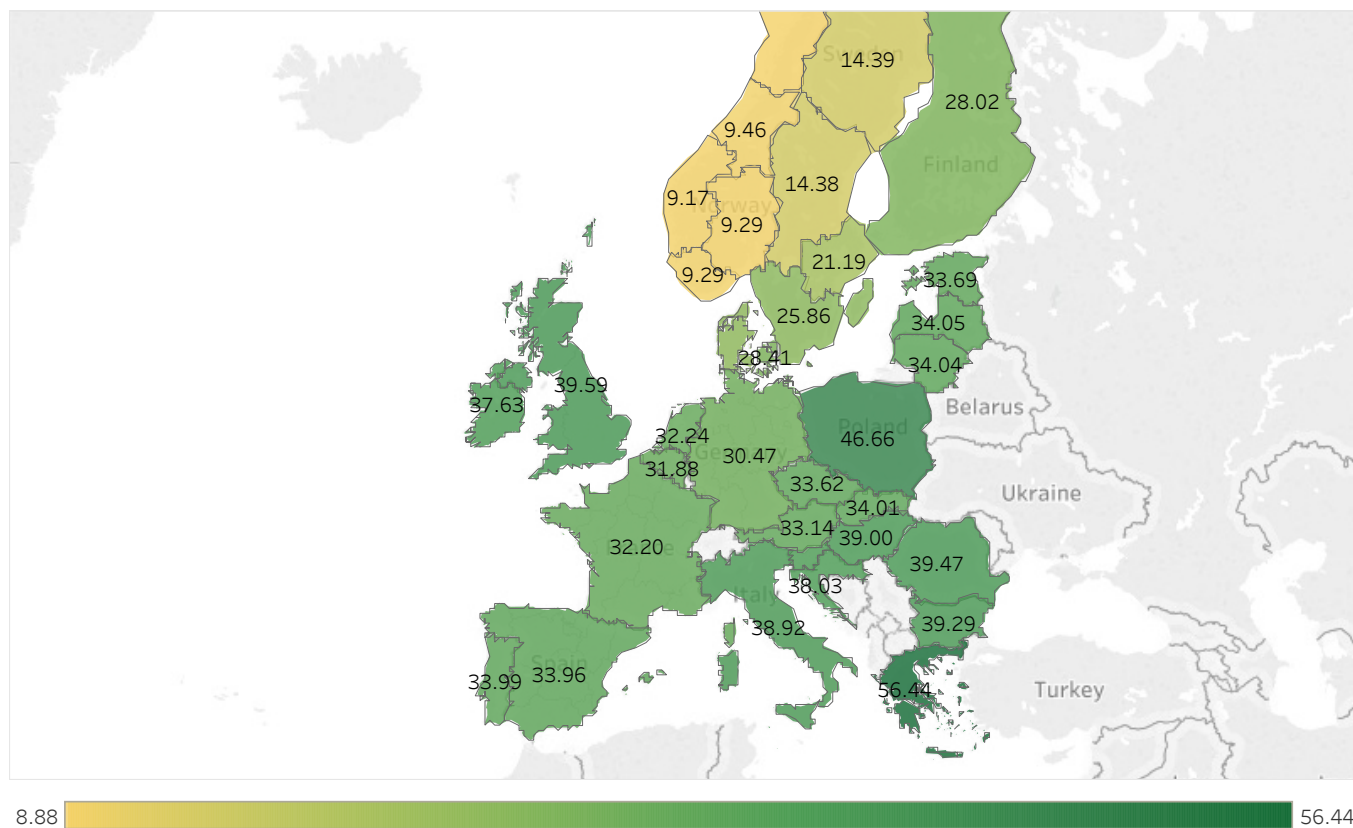
## 6.1 Day-ahead average prices of the main European market operators

### Spain and Portugal

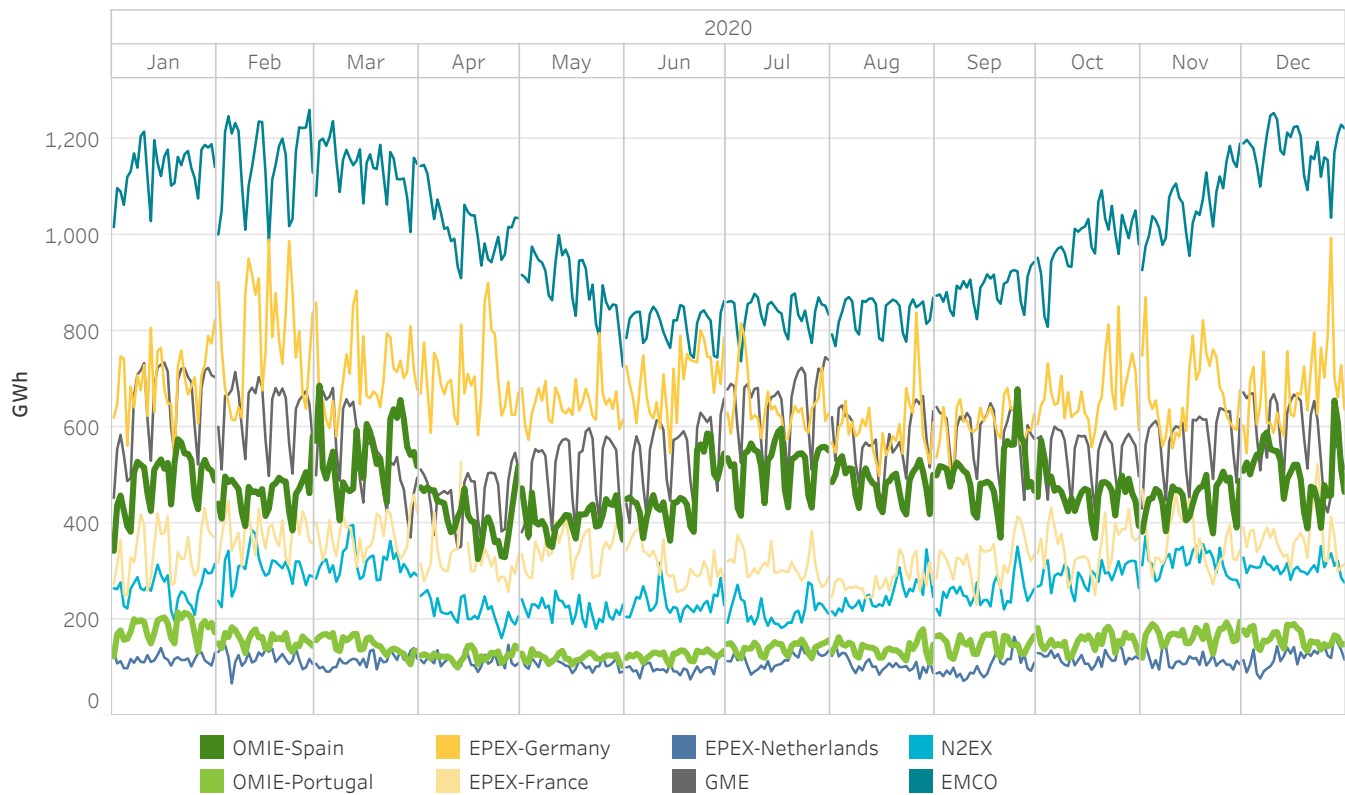
The "Price area" shows the difference between the maximum and the minimum day-ahead average price between the following markets: EPEX-Germany, EPEX-France, EPEX-Netherlands, GME, N2EX and EMCO.



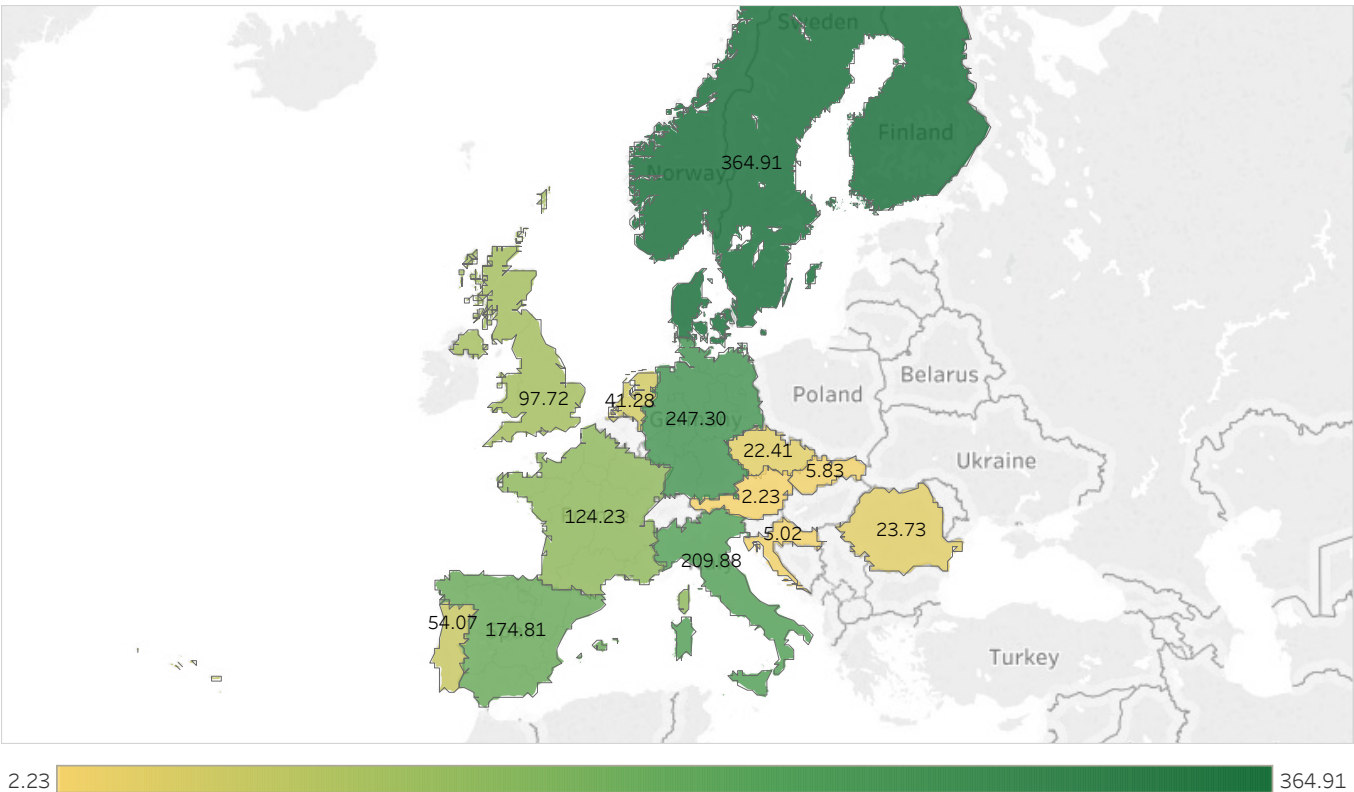
## 6.2 Average prices in the European price areas for 2020 in €/MWh



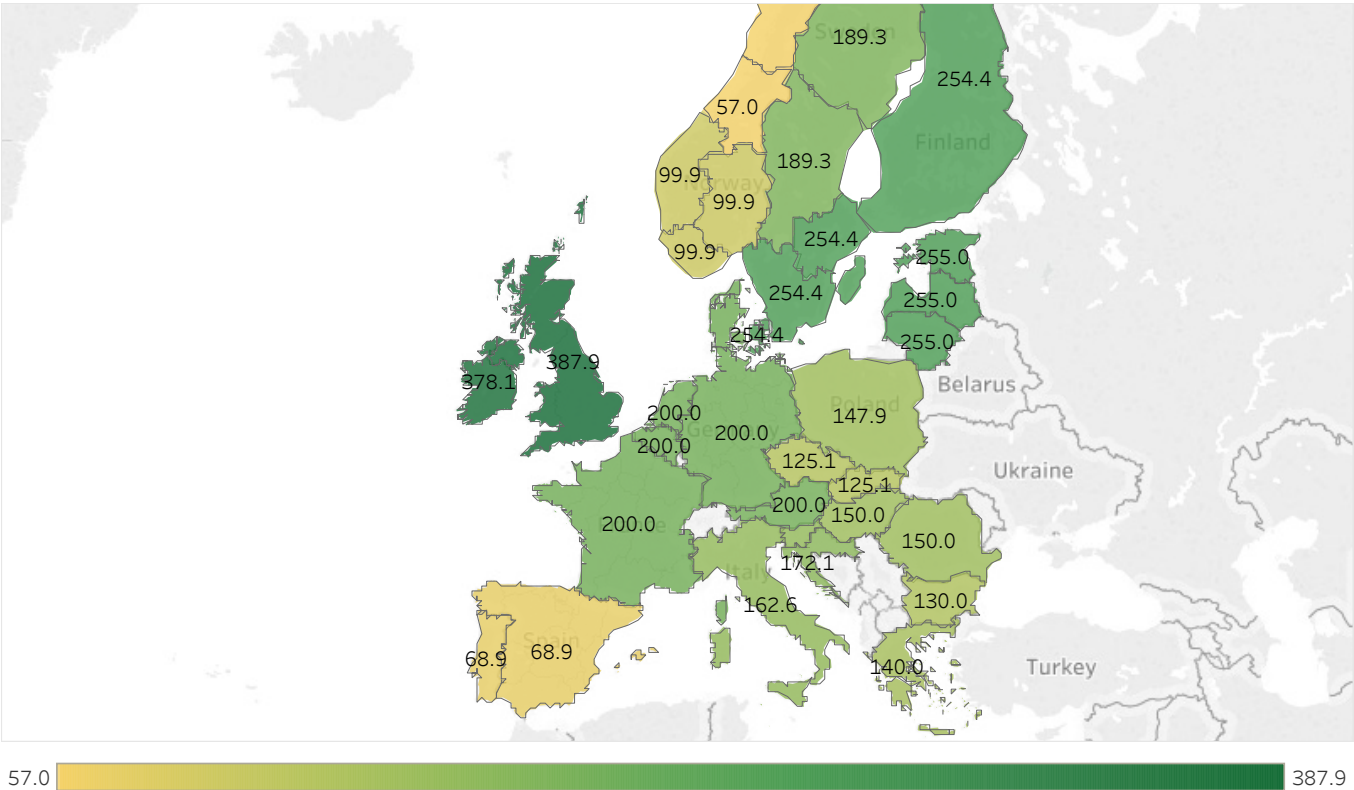
6.3 Day-ahead energy negotiated by the main European market operators



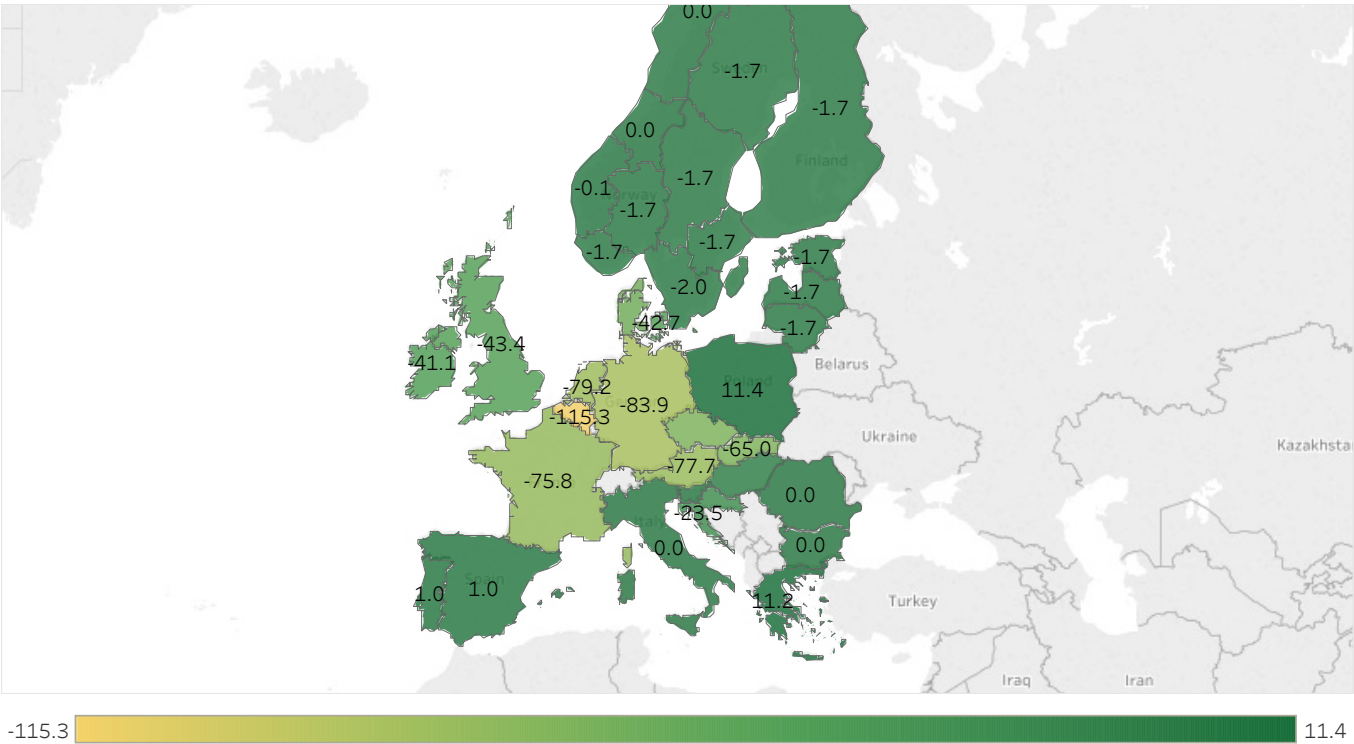
6.4 Energy in the main European price areas for 2020 in TWh



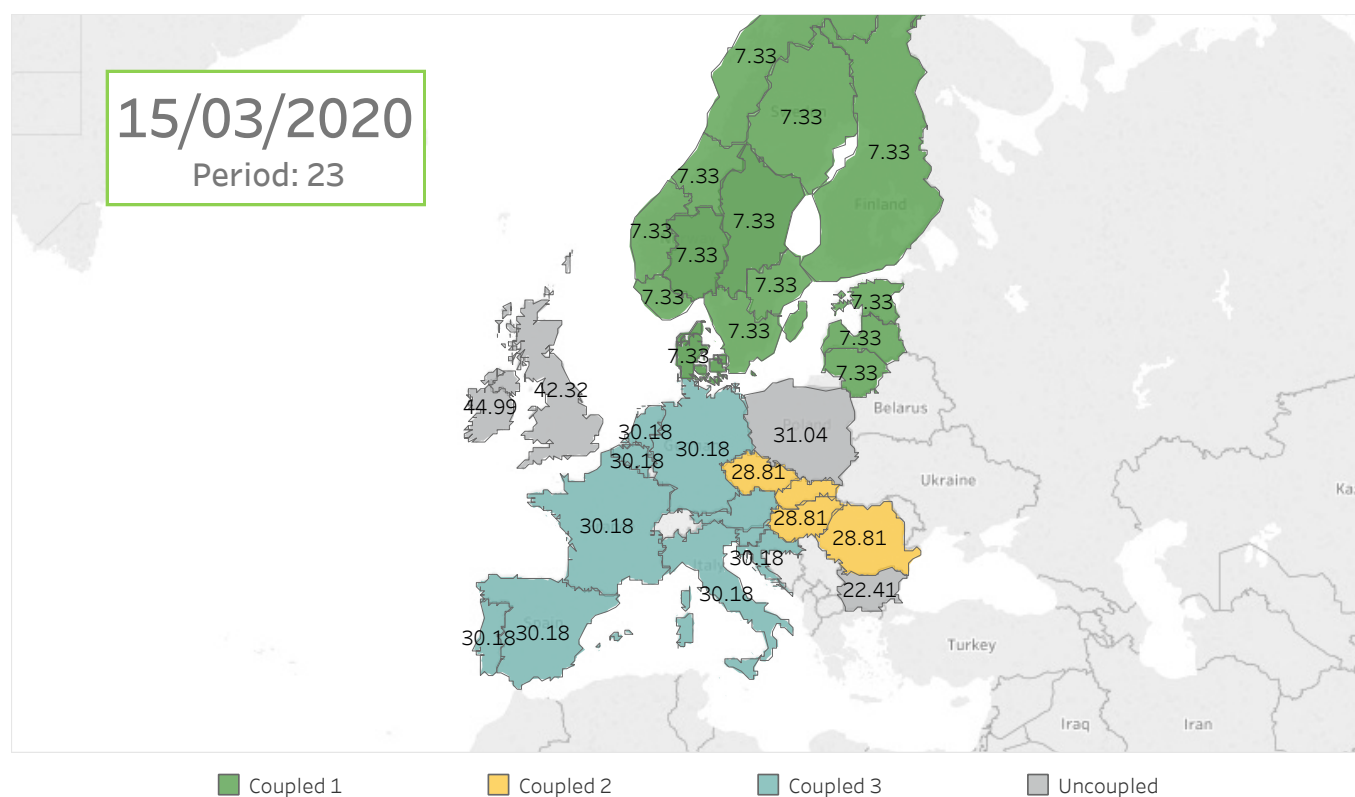
6.5 Hourly maximum prices [€/MWh] in the main European market operators for 2020



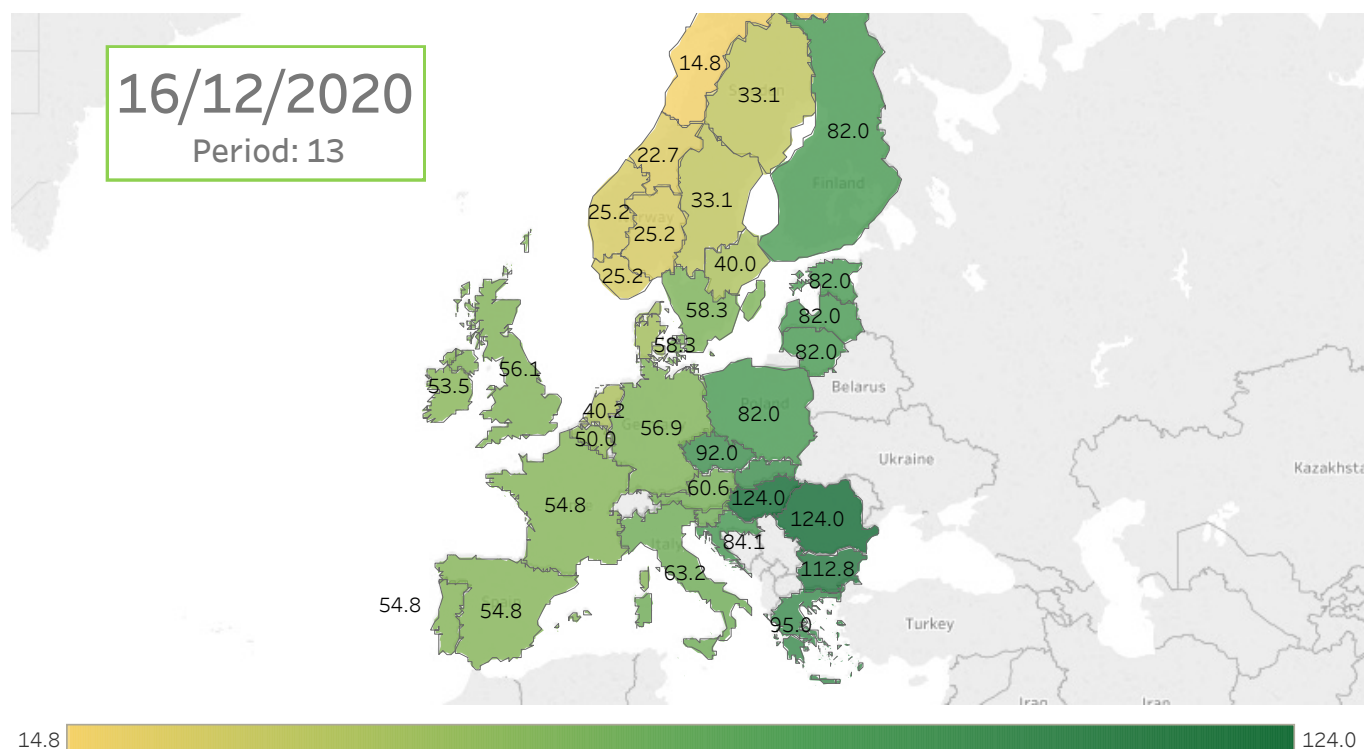
6.6 Hourly minimum prices [€/MWh] in the main European market operators for 2020



## 6.7 Period of maximum price coupling [€/MWh] in the main European market operators for 2020



## 6.8 Period of minimum price coupling [€/MWh] in the main European market operators for 2020



## Annual report 2020

### 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, and TGE 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 Intradiario 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 OMIE market operators, EPEX spot, 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 Intradiario 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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