



cmie
Price report 2018

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1

MIBEL: Energy, economic volume and technologies

- 1.1** Purchases on the MIBEL of energy traded on the day-ahead, intraday auctions and the continuous intraday markets
- 1.2** Economic value of the purchases negotiated on the day-ahead, intraday auctions and the continuous intraday markets
- 1.3** Energy values and contracting on the MIBEL
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1.1 Purchases on the MIBEL of energy traded on the day-ahead, intraday auctions and the continuous intraday markets

The Spanish area includes exports across the borders with France, Morocco and Andorra
 Variation 2018 - 2017: **-1.7%**





1.2 Economic value of the purchases negotiated on the day-ahead, intraday auctions and the continuous intraday markets

The Spanish area includes exports across the borders with France, Morocco and Andorra
 Variation 2018 - 2017: **6.3%**





1.3 Energy values and contracting on the MIBEL

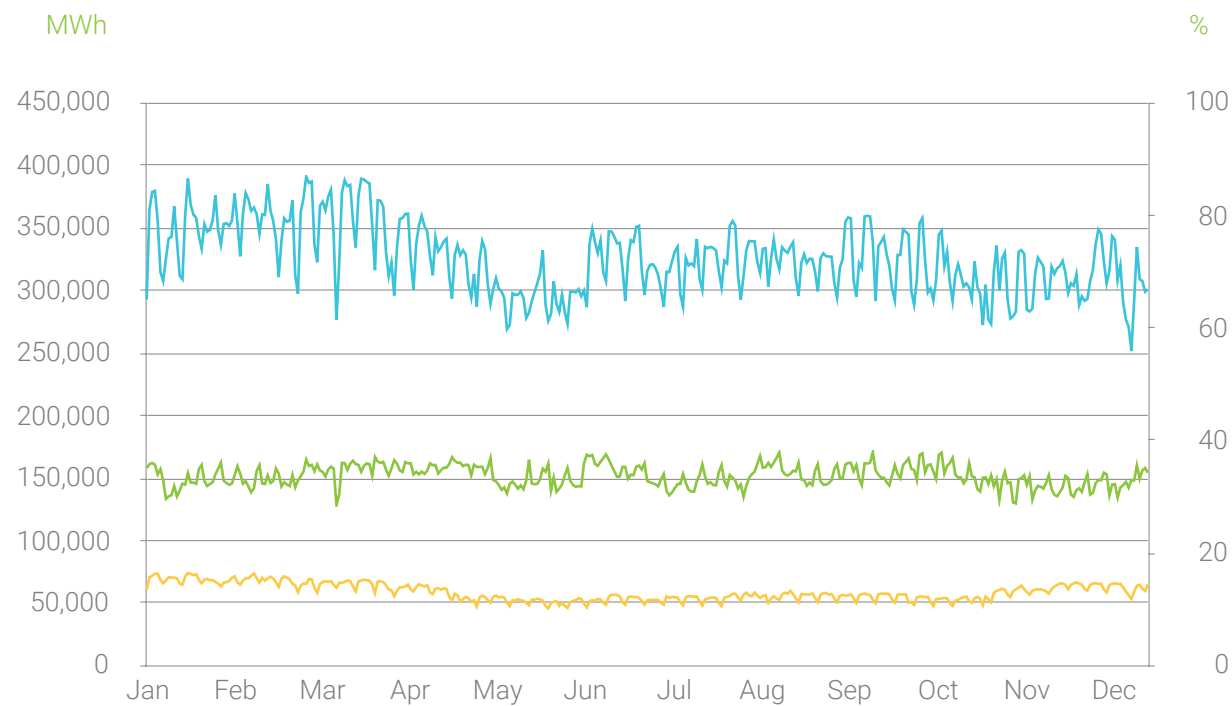
2018

	Day-ahead market		Intraday auctions market		Continuous intraday market		Total	
	Energy GWh	Contracting kEUR	Energy GWh	Contracting kEUR	Energy GWh	Contracting kEUR	Energy GWh	Contracting kEUR
Jan	21,842	1,150,445	3,000	156,017			24,842	1,306,462
Feb	20,210	1,135,750	2,686	151,680			22,896	1,287,430
Mar	21,690	888,152	3,136	133,239			24,826	1,021,391
Apr	18,366	798,475	2,890	127,248			21,256	925,723
May	18,690	1,052,400	3,082	174,251			21,772	1,226,651
Jun	18,031	1,074,697	2,972	173,601	62	3,685	21,065	1,251,983
Jul	20,370	1,279,409	3,112	193,148	163	10,557	23,645	1,483,114
Aug	19,801	1,293,334	3,592	233,793	315	21,269	23,708	1,548,396
Sep	18,835	1,359,037	3,149	229,257	281	20,965	22,265	1,609,259
Oct	18,929	1,250,391	3,430	227,079	383	24,427	22,742	1,501,897
Nov	20,185	1,275,016	3,280	206,703	363	22,319	23,828	1,504,038
Dec	20,242	1,275,000	3,025	189,338	308	19,028	23,575	1,483,366
year	237,189	13,832,105	37,353	2,195,354	1,876	122,252	276,418	16,149,711



1.4 Energy traded on the day-ahead and intraday markets and final demand on the MIBEL

2018

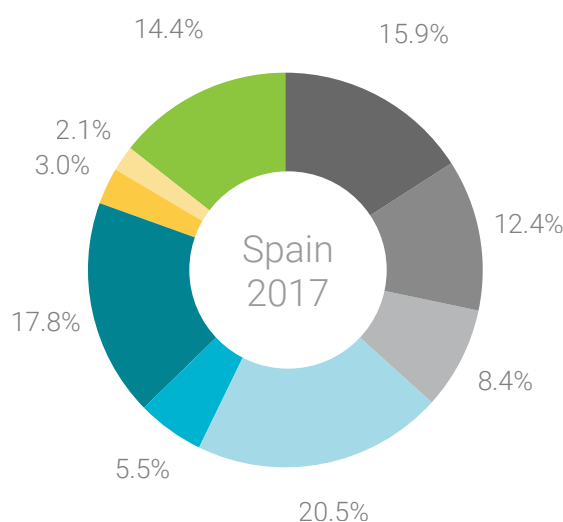
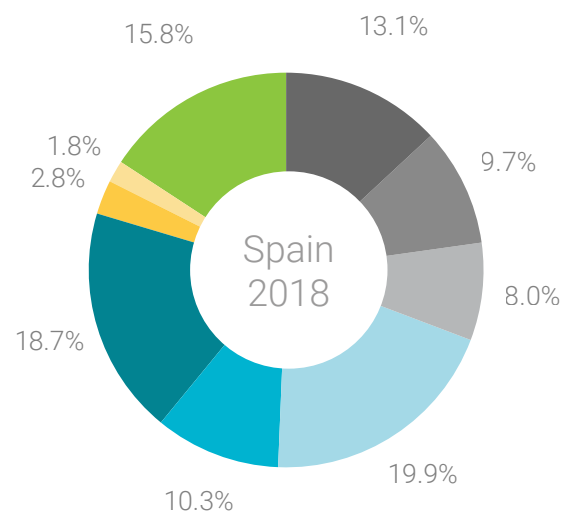


■ MIBEL bilaterals
 ■ Bilateral Portuguese zone
 ■ % MIBEL bilaterals/Day-ahead market MIBEL



1.5 Energy mix

in Spain



2017
EMISSIONS-FREE

60.8%

2018
EMISSIONS-FREE

66.0%

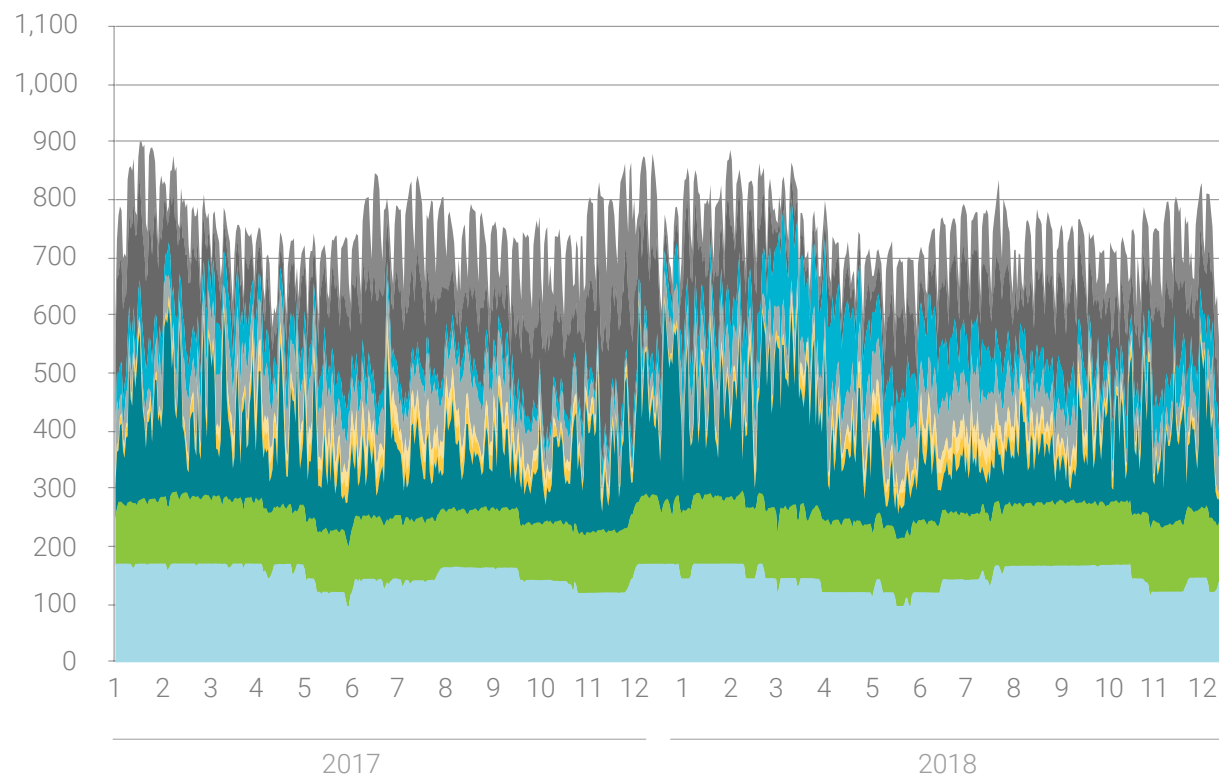
- Coal
- Combined cycle
- Import
- Nuclear
- Hydraulic
- Wind power
- Photovoltaic solar
- Thermal solar
- Cogeneration/Wastes/Mini hydro



1.6 Demand coverage by technologies

in Spain

GWh/day

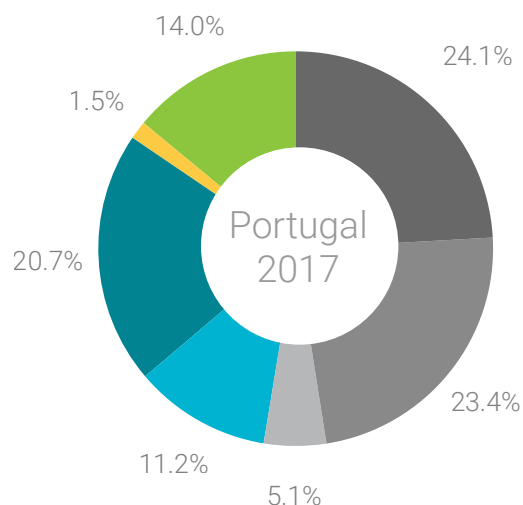
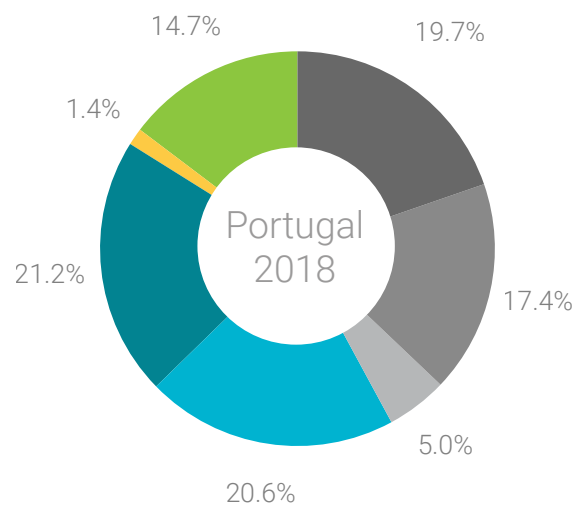


- | | | |
|--------------------|--------------------------------|----------------|
| Nuclear | Cogeneration/Wastes/Mini hydro | Wind power |
| Photovoltaic solar | Thermal solar | Import |
| Hydraulic | Coal | Combined cycle |



1.7 Energy mix

in Portugal



- Coal
- Import
- Wind power
- Other special regime

- Combined cycle
- Hydraulic
- Photovoltaic solar

2017
EMISSIONS-FREE

44.6%

2018
EMISSIONS-FREE

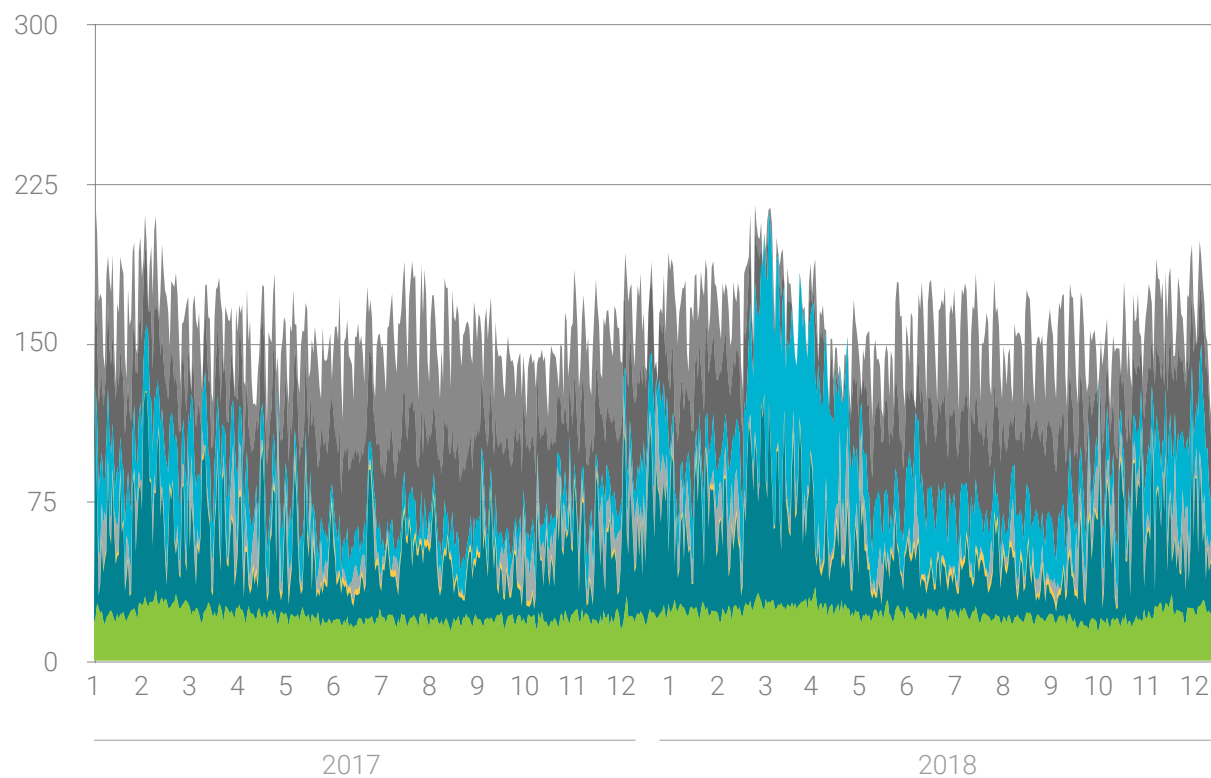
54.9%



1.8 Demand coverage by technologies

in Portugal

GWh/day





2

Day-ahead market

- 2.1** Monthly energy and average monthly price of the day-ahead market
- 2.2** Energy and price of the day-ahead market MIBEL
- 2.3** Acquisitions on the day-ahead market
- 2.4** Percentage of the number of hours with market splitting by hourly period in the day-ahead market
- 2.5** Significant figures of the day-ahead market



2.1.1 Monthly energy and average monthly price of the day-ahead market

Spanish area

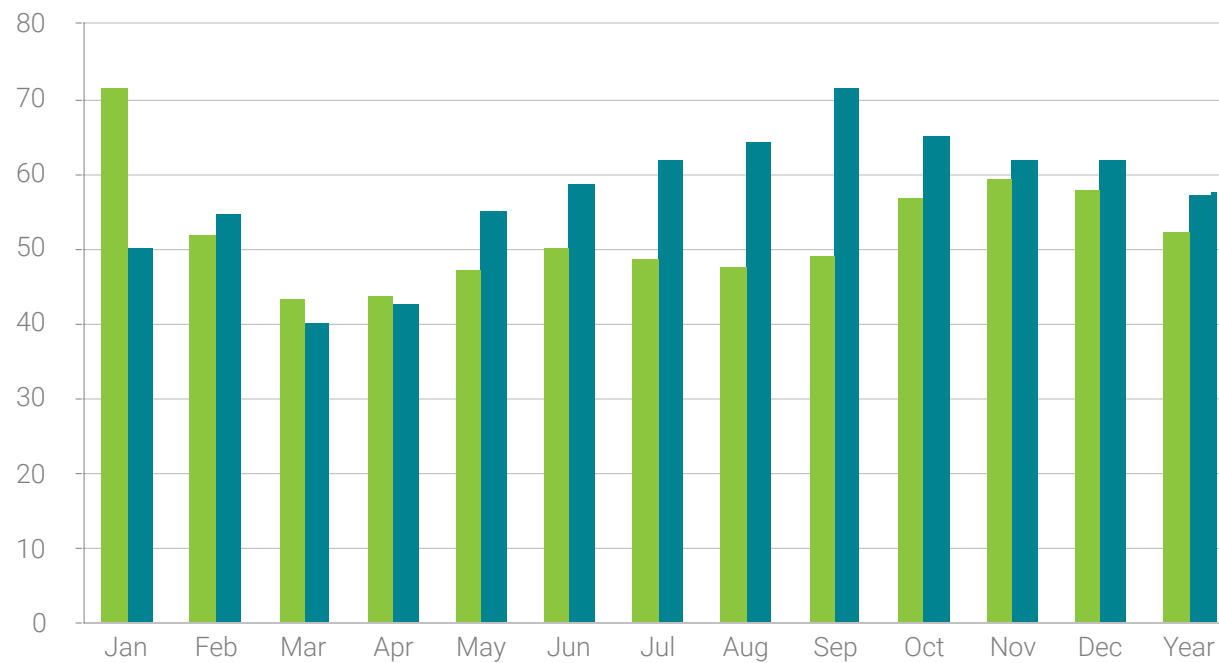
	Average monthly price (€/MWh)		Energy purchased (GWh)	
	2018	2017	2018	2017
Jan	49.98	71.49	17,028	17,753
Feb	54.88	51.74	15,696	14,935
Mar	40.18	43.19	15,916	14,722
Apr	42.67	43.69	13,989	13,783
May	54.92	47.11	14,619	15,532
Jun	58.46	50.22	14,061	17,053
Jul	61.88	48.63	16,208	17,696
Aug	64.33	47.46	15,545	16,569
Sep	71.27	49.15	14,679	15,029
Oct	65.08	56.77	14,288	15,589
Nov	61.97	59.19	15,254	16,557
Dec	61.81	57.94	15,443	16,997
year	57.29	52.24	182,727	192,214



2.1.1 Average monthly price of the day-ahead market

Spanish area 2017 - 2018

€/MWh



Spain 2017

Spain 2018



2.1.2 Monthly energy and average monthly price of the day-ahead market

Portuguese area

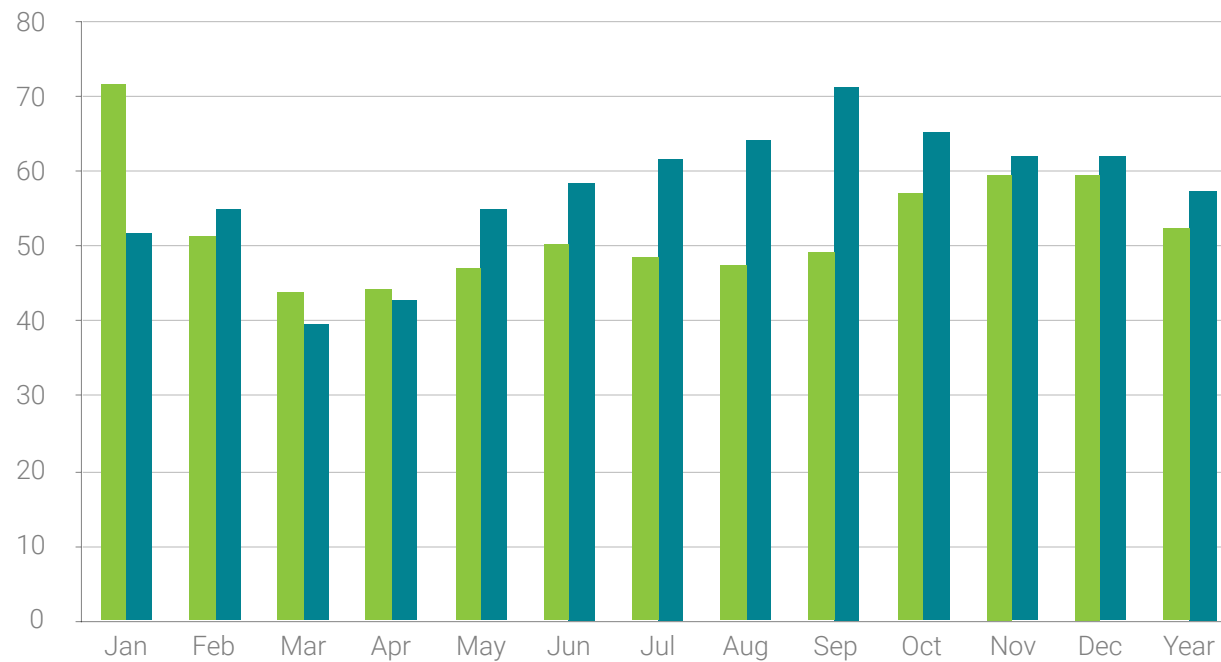
	Average monthly price (€/MWh)		Energy purchased (GWh)	
	2018	2017	2018	2017
Jan	51.63	71.52	4,797	4,671
Feb	54.98	51.39	4,363	4,174
Mar	39.75	43.95	4,781	4,348
Apr	42.66	44.18	4,243	3,960
May	55.08	47.12	4,066	4,121
Jun	58.48	50.22	3,971	4,093
Jul	61.84	48.60	4,159	4,225
Aug	64.29	47.43	4,109	4,058
Sep	71.30	49.16	4,089	4,011
Oct	65.38	56.97	4,227	4,137
Nov	62.01	59.36	4,276	4,151
Dec	61.87	59.49	4,456	4,691
year	57.45	52.48	51,537	50,640



2.1.2 Average monthly price of the day-ahead market

Portuguese area 2017 - 2018

€/MWh



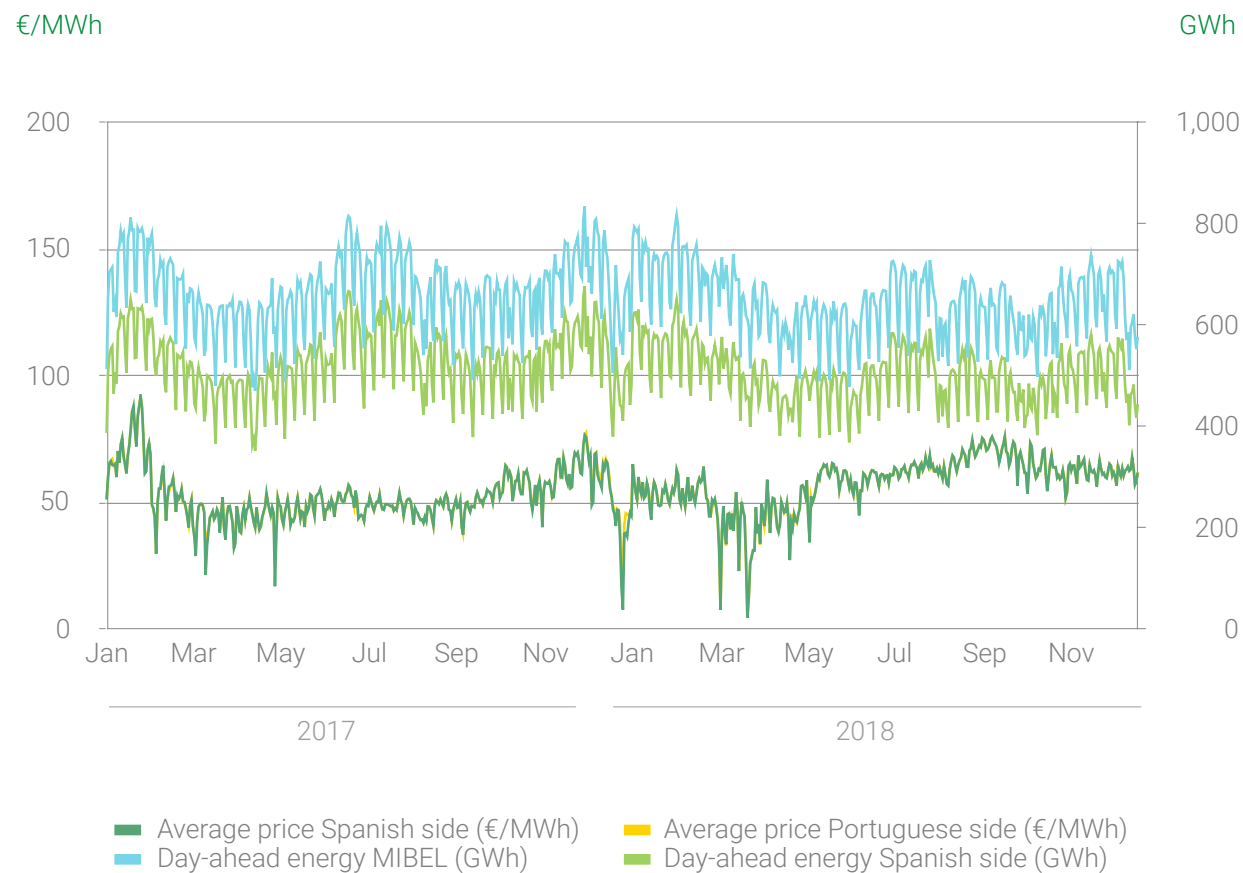
■ Portugal 2017

■ Portugal 2018



2.2 Energy and price of the day-ahead market MIBEL

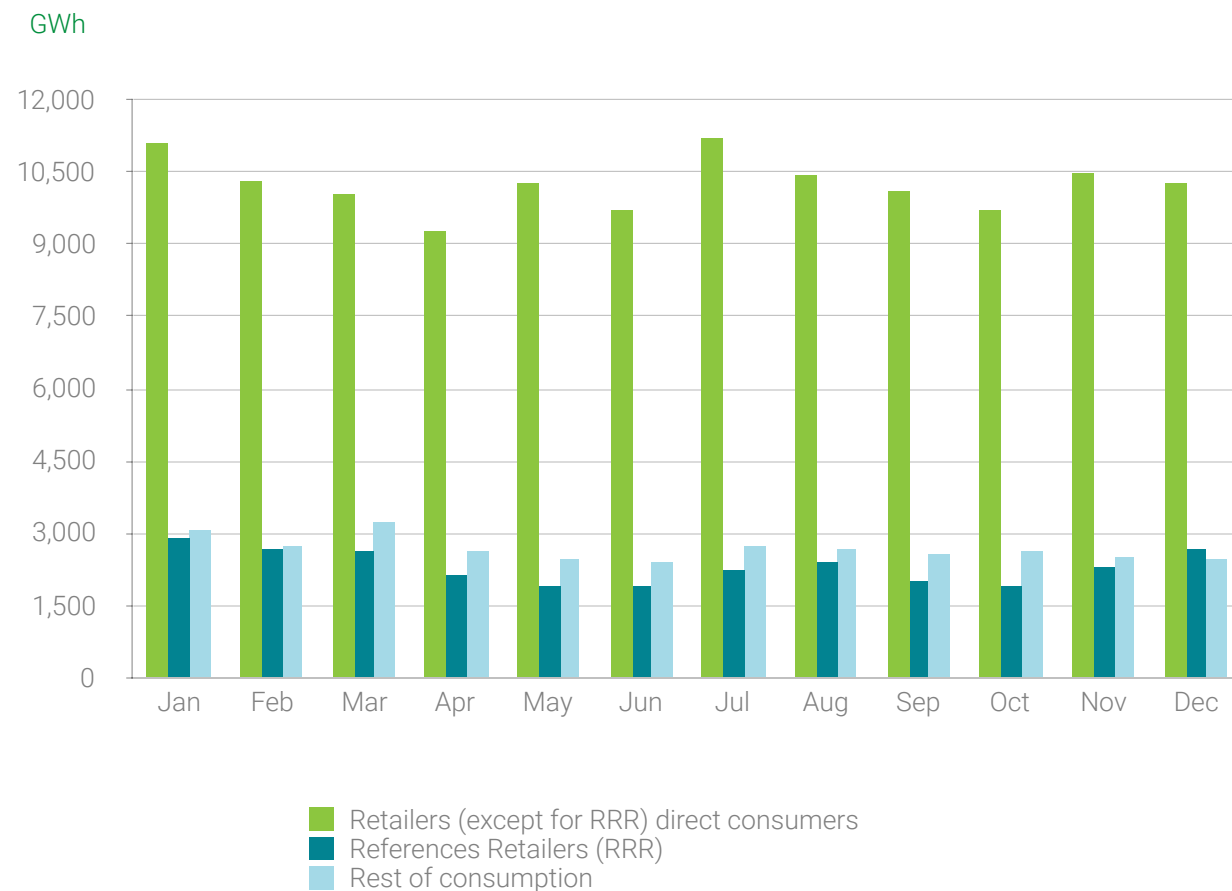
2017 - 2018





2.3.1 Acquisitions on the day-ahead market

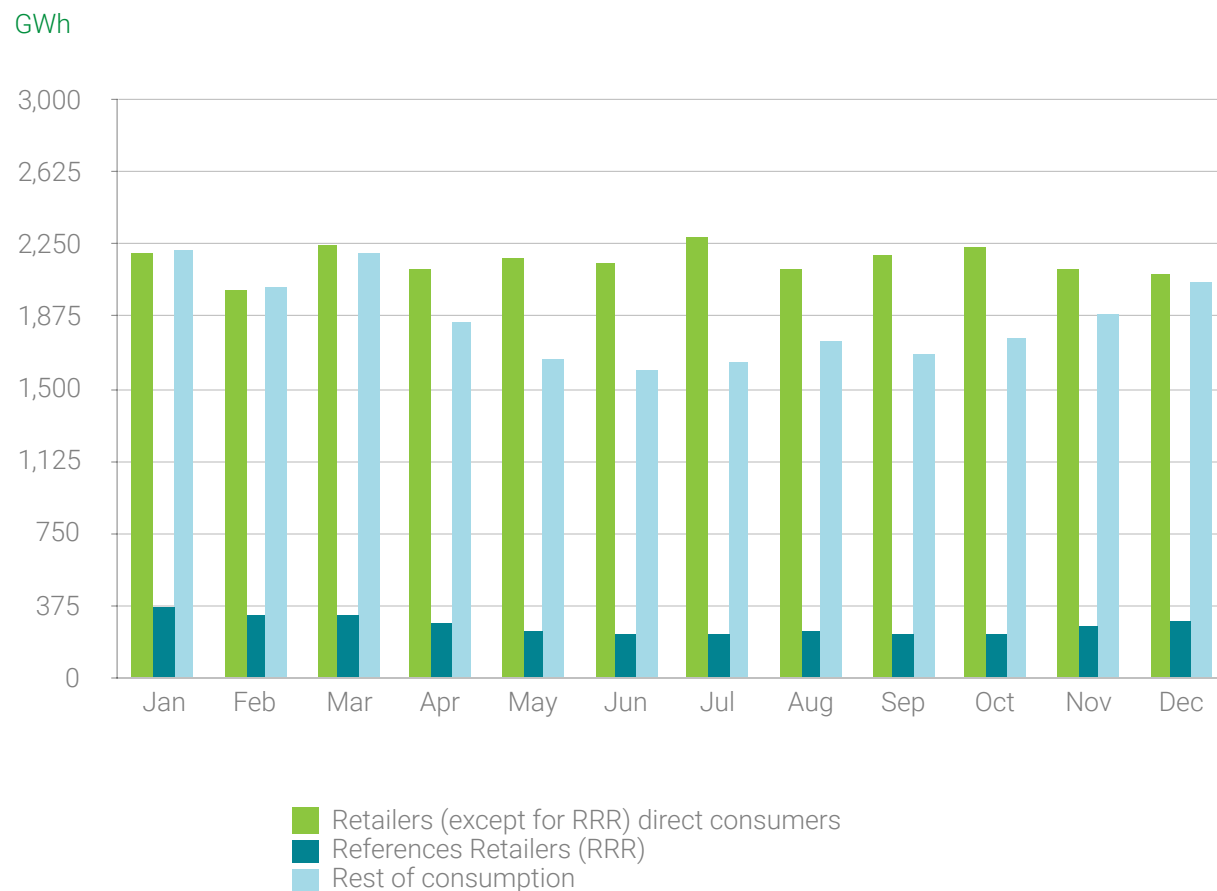
Spanish electricity system





2.3.2 Acquisitions on the day-ahead market

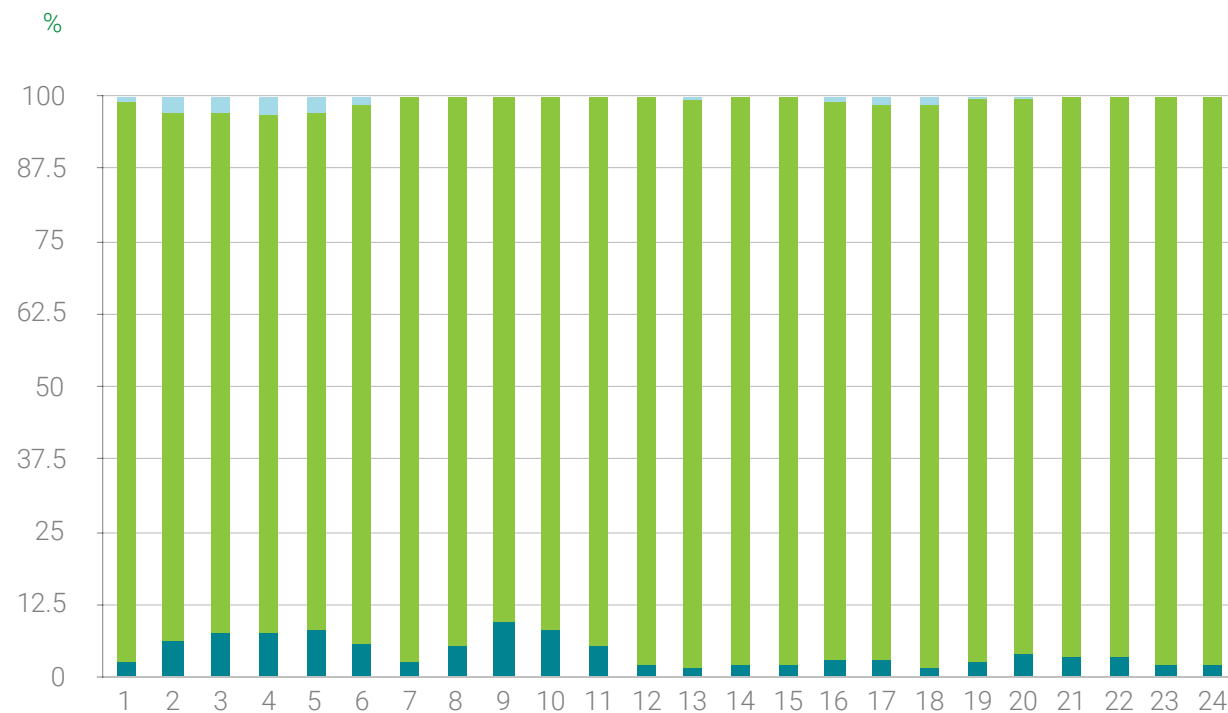
Portuguese electricity system





2.4 Percentage of the number of hours with market splitting by hourly period in the day-ahead market

2017 - 2018



Without market-splitting
94.79%

- Market-splitting: import direction balance
- Without market-splitting
- Market-splitting: export direction balance
- Market-splitting: null balance



2.5 Significant figures of the day-ahead market

2018

Prices	Spain		Portugal	
	€/MWh	Date	€/MWh	Date
Peak hourly	84.13	1 hour (04 October)	84.13	1 hour (04 October)
Minimum hourly	2.06	3 hours (01 January)	2.30	7 hours (30 and 31 March)
Maximum price difference	63.30	12 March	63.30	12 March
Minimum price difference	2.30	07 July	2.30	07 July
Average day-ahead maximum	75.93	19 September	75.93	19 September
Average day-ahead minimum	4.50	30 March	4.50	30 March
Average montly maximum	71.27	September	71.30	September
Average mensual minimum	40.18	March	39.75	March



3

Intraday auctions market

- 3.1** Monthly energy and average monthly price of the intraday auctions market
- 3.2** Energy and price of the intraday auctions market
- 3.3** Sales and purchases on the intraday auctions market
- 3.4** Comparison of average arithmetic daily prices of the day-ahead and the intraday auctions market



3.1.1 Monthly energy and average monthly price of the intraday auctions market

Spanish area

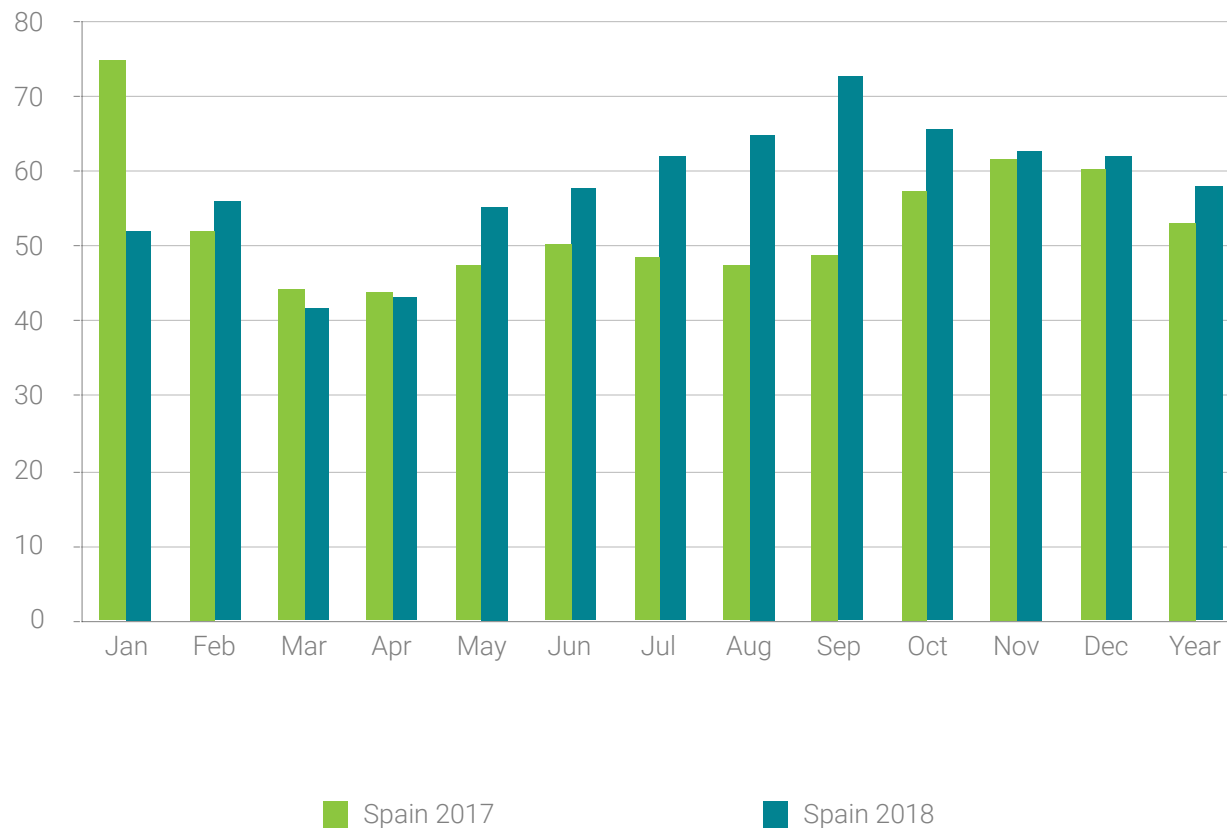
	Average monthly price (€/MWh)		Energy purchased (GWh)	
	2018	2017	2018	2017
Jan	52.08	74.97	2,655	2,438
Feb	56.11	52.20	2,324	2,443
Mar	41.76	44.08	2,692	2,715
Apr	43.22	44.01	2,532	2,346
May	55.22	47.51	2,761	2,439
Jun	57.84	50.31	2,744	2,648
Jul	62.11	48.47	2,826	2,611
Aug	64.93	47.38	3,312	2,534
Sep	72.55	48.73	2,885	2,611
Oct	65.60	57.36	3,103	3,133
Nov	62.73	61.79	2,923	3,052
Dec	62.13	60.27	2,667	2,667
year	58.03	53.12	33,423	31,636



3.1.1 Average monthly price of the intraday auctions market

Spanish area 2017 - 2018

€/MWh





3.1.2 Monthly energy and average monthly price of the intraday auctions market

Portuguese area

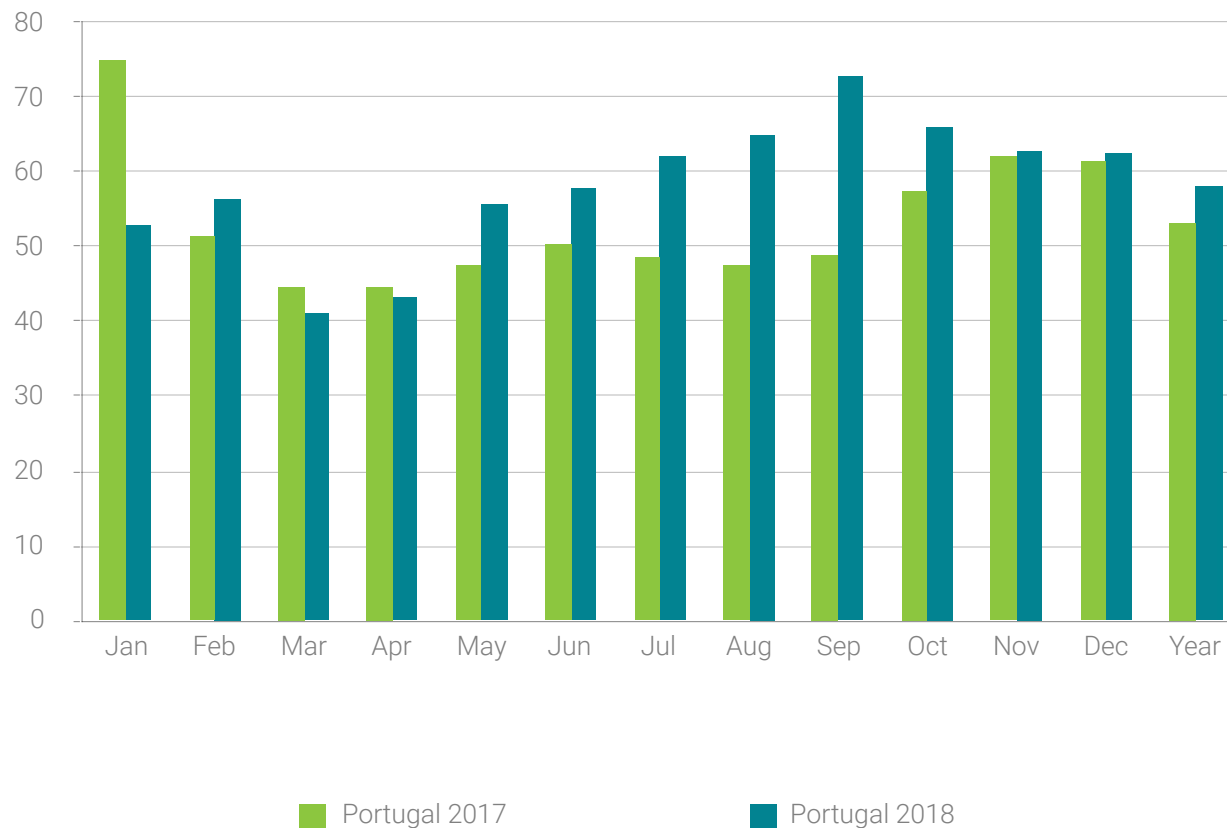
	Average monthly price (€/MWh)		Energy purchased (GWh)	
	2018	2017	2018	2017
Jan	52.90	74.93	345	326
Feb	56.21	51.28	362	324
Mar	41.20	44.65	445	402
Apr	43.16	44.47	358	362
May	55.48	47.51	321	336
Jun	57.83	50.31	228	306
Jul	62.07	48.45	285	327
Aug	64.89	47.34	280	300
Sep	72.54	48.73	264	276
Oct	65.84	57.56	327	300
Nov	62.81	62.00	357	373
Dec	62.22	61.20	358	334
year	58.10	53.24	3,930	3,965



3.1.2 Average monthly price of the intraday auctions market

Portuguese area 2017 - 2018

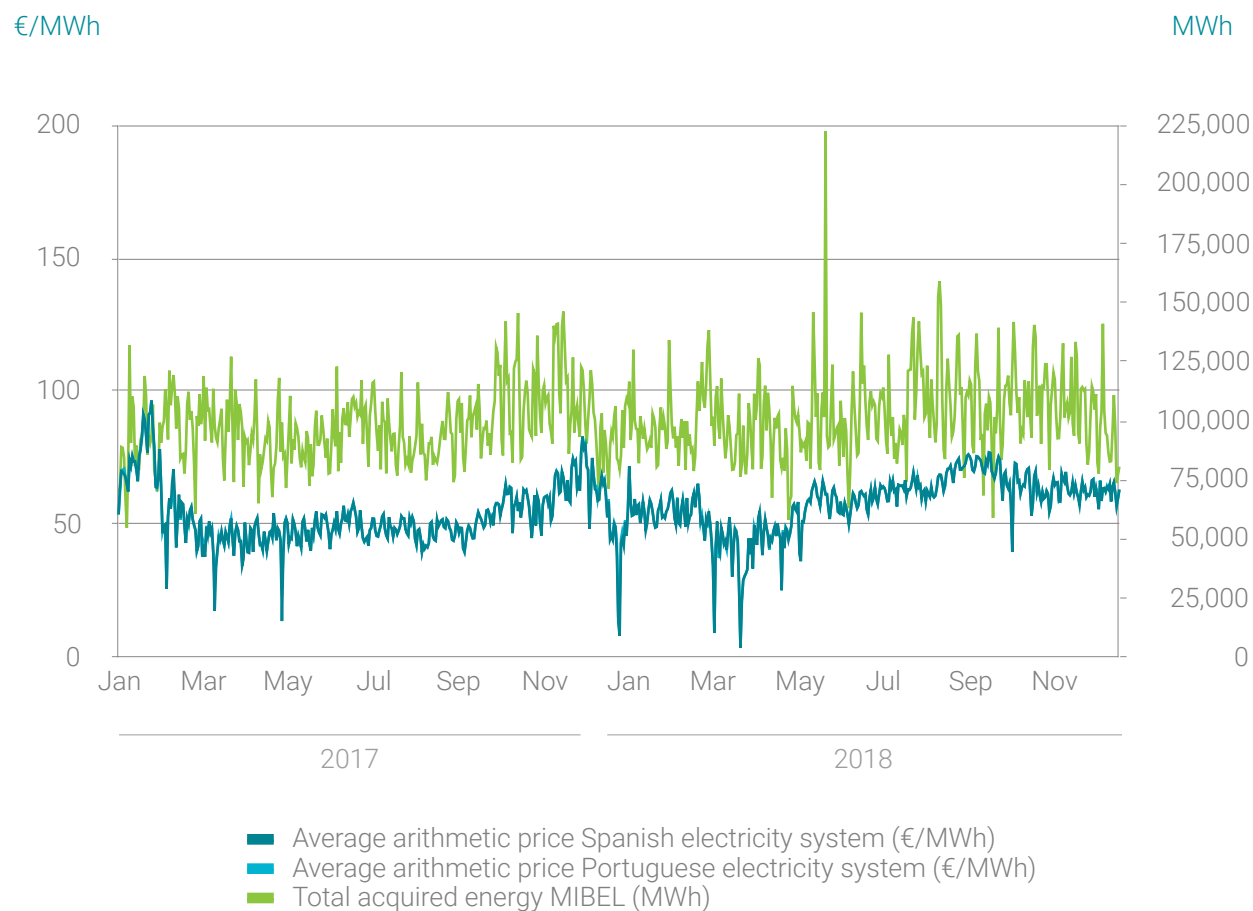
€/MWh





3.2 Energy and price of the intraday auctions market

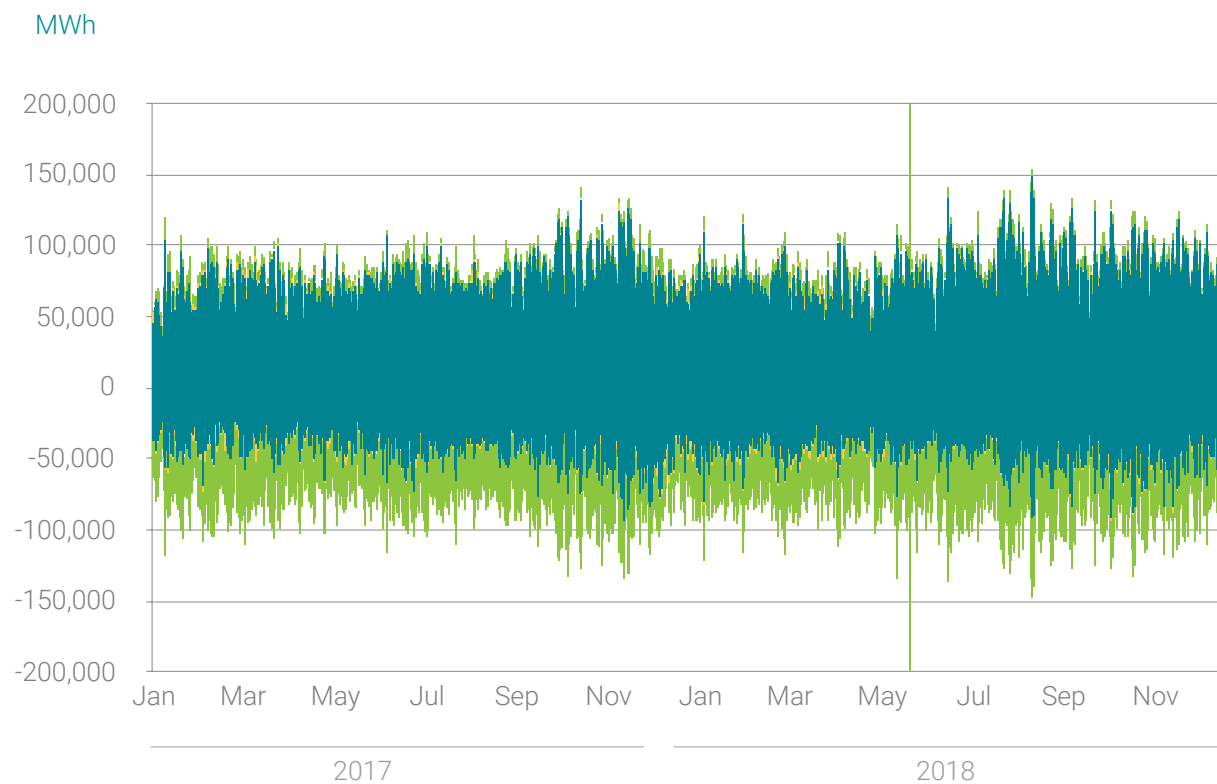
2017 - 2018





3.3.1 Sales and purchases on the intraday auctions market

Spanish electricity system

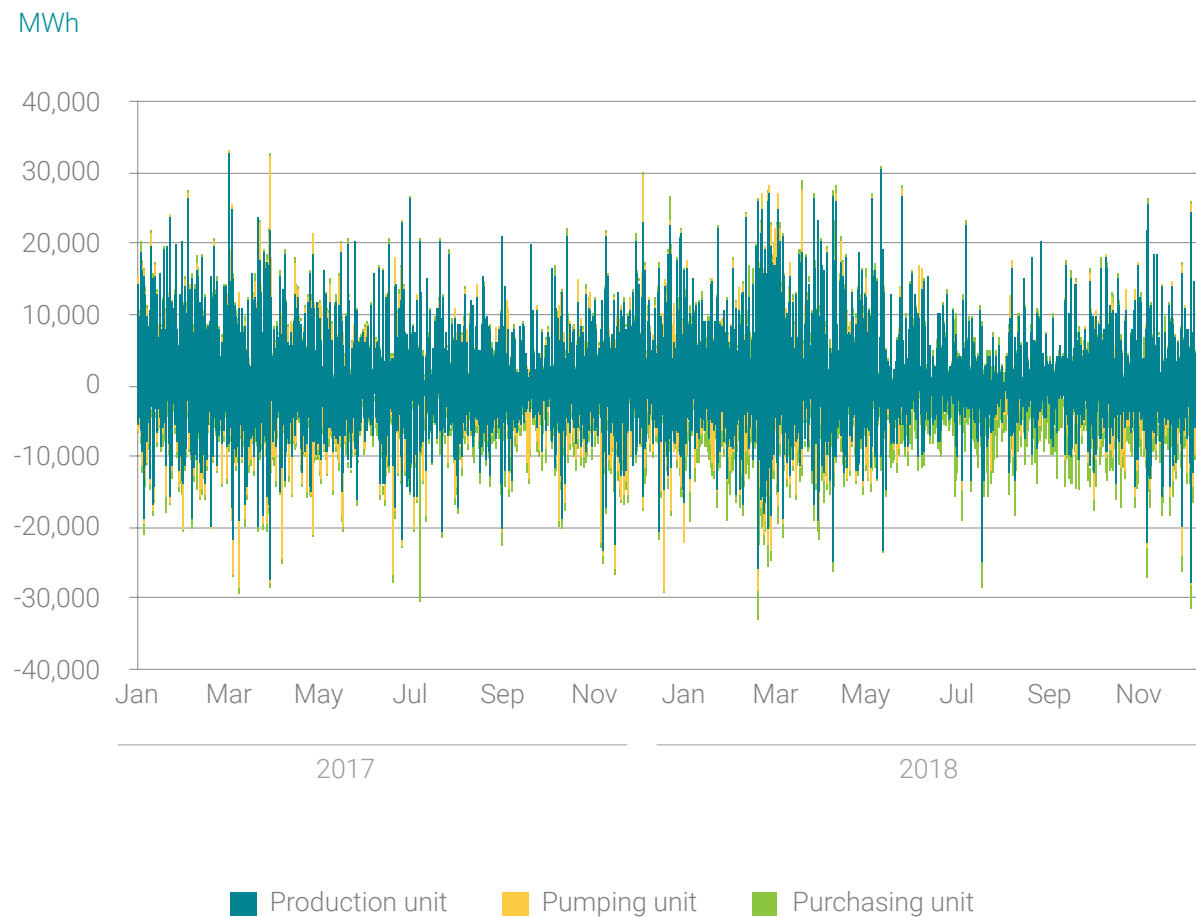


■ Production unit ■ Pumping unit ■ Purchasing unit



3.3.2 Sales and purchases on the intraday auctions market

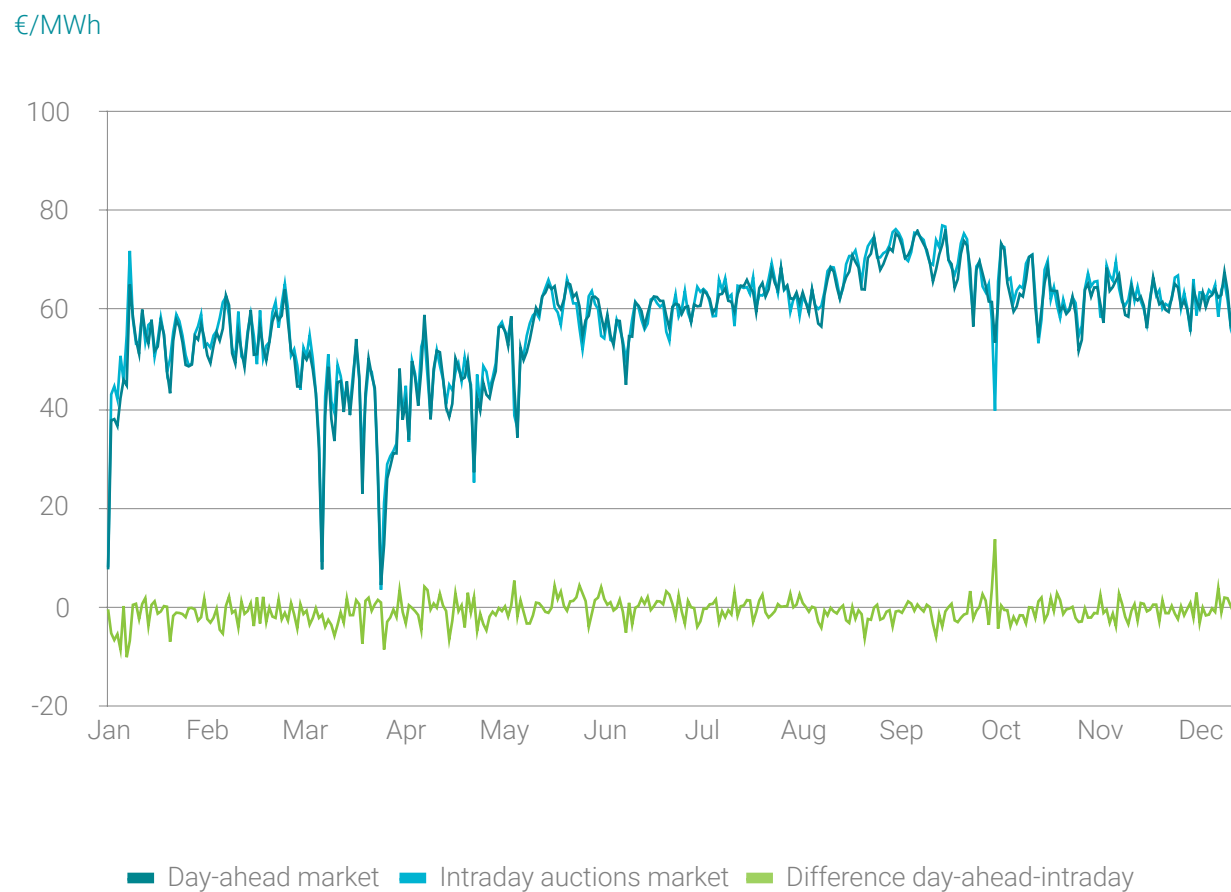
Portuguese electricity system





3.4.1 Comparison of average arithmetic daily prices of the day-ahead and the intraday auctions market

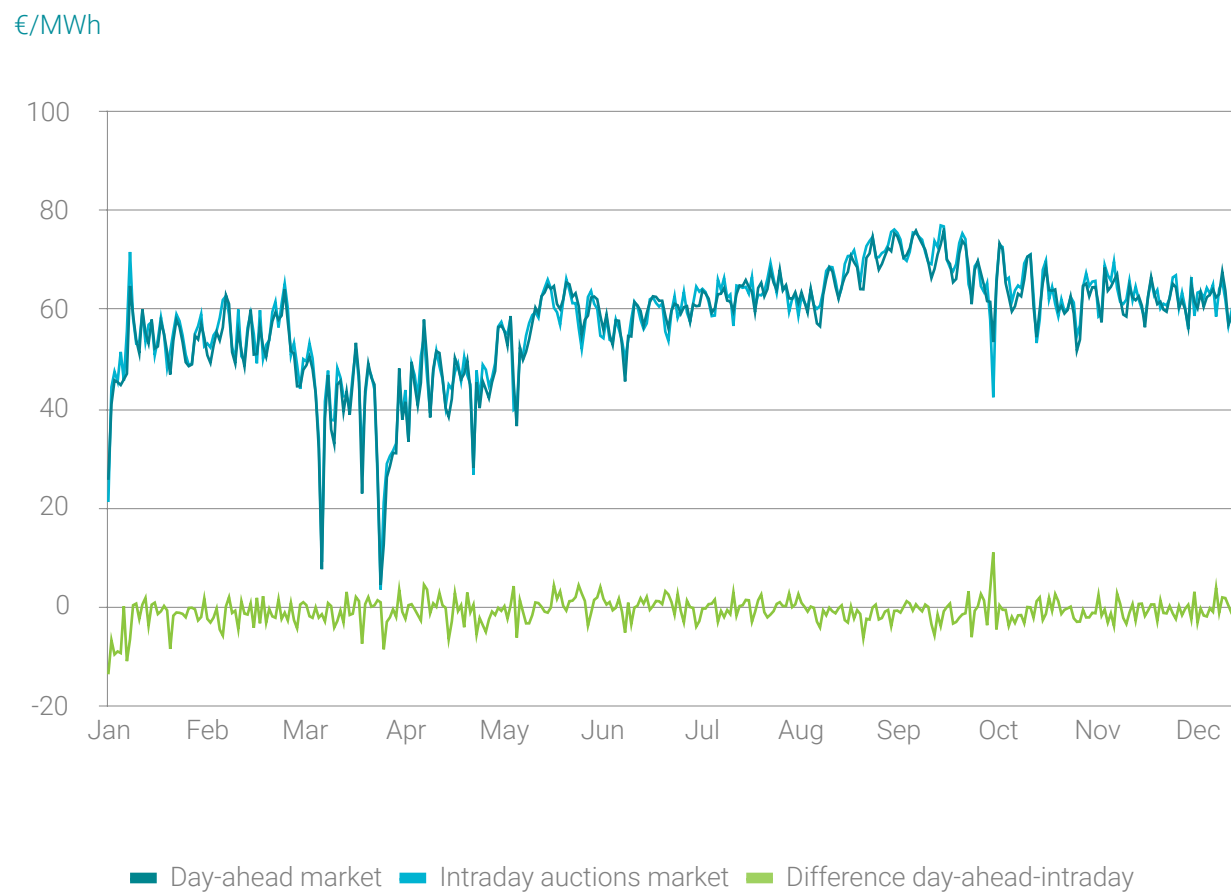
Spanish electricity system





3.4.2 Comparison of average arithmetic daily prices of the day-ahead and the intraday auctions market

Portuguese electricity system





4

Continuous intraday market*

*The continuous intraday market started on June 13, 2018

- 4.1** Energy volume and monthly price of the continuous intraday market
- 4.2** Comparison of energy volumes between the intraday market auctions sessions and the continuous intraday market
- 4.3** Sales and purchases in the continuous intraday market



4.1.1 Energy volume and monthly price of the continuous intraday market

Spanish area

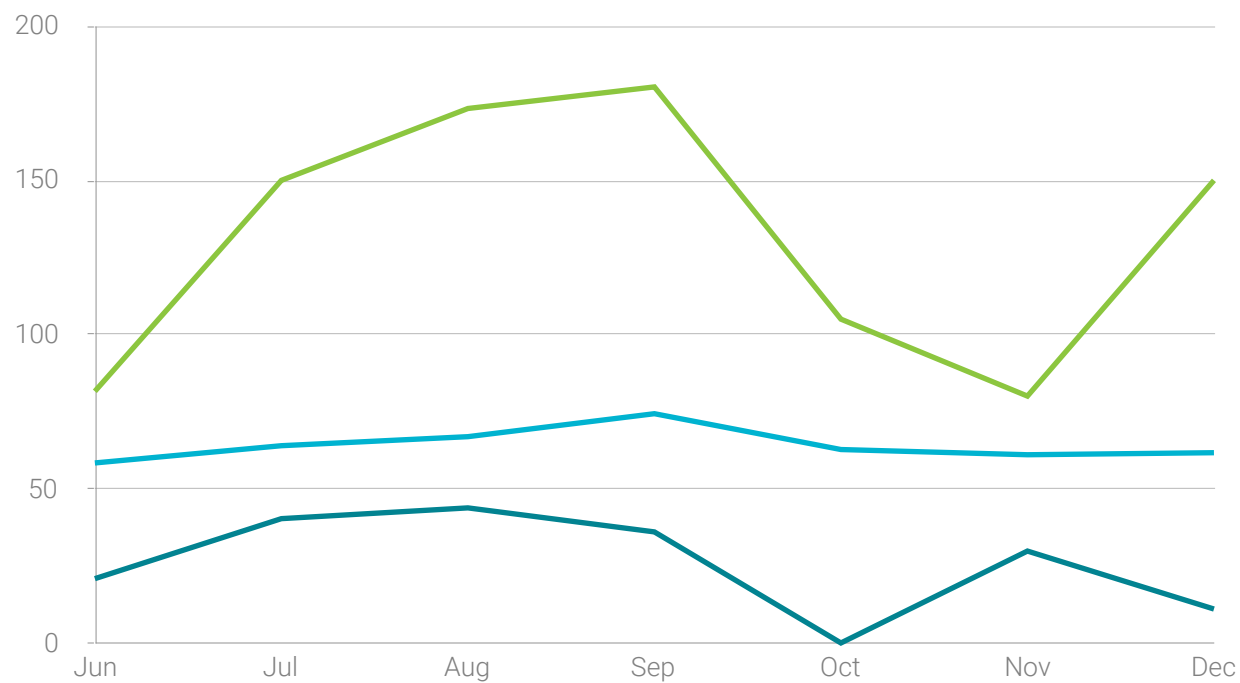
Month	Max. price Spain (€/MWh)	Min. price Spain (€/MWh)	Weighted average price Spain (€/MWh)	Sales volume Spain (MWh)	Purchase volume Spain (MWh)
Jun	81.60	20.85	58.37	43,344.1	38,919.4
Jul	150.00	40.31	63.96	89,963.1	76,110.2
Aug	173.30	43.80	66.89	159,448.7	122,019.6
Sep	180.30	36.01	74.34	139,388.5	134,831.5
Oct	105.00	0.00	62.72	215,499.7	159,338.4
Nov	80.05	29.80	61.03	201,072.9	154,988.2
Dec	150.00	11.00	61.69	187,543.7	123,114.7



4.1.1 Monthly price of the continuous intraday market

Spanish area 2017 - 2018

€/MWh



■ Max. price Spain (€/MWh) ■ Min. price Spain (€/MWh)
■ Weighted average price Spain (€/MWh)



4.1.2 Energy volume and monthly price of the continuous intraday market

Portuguese area

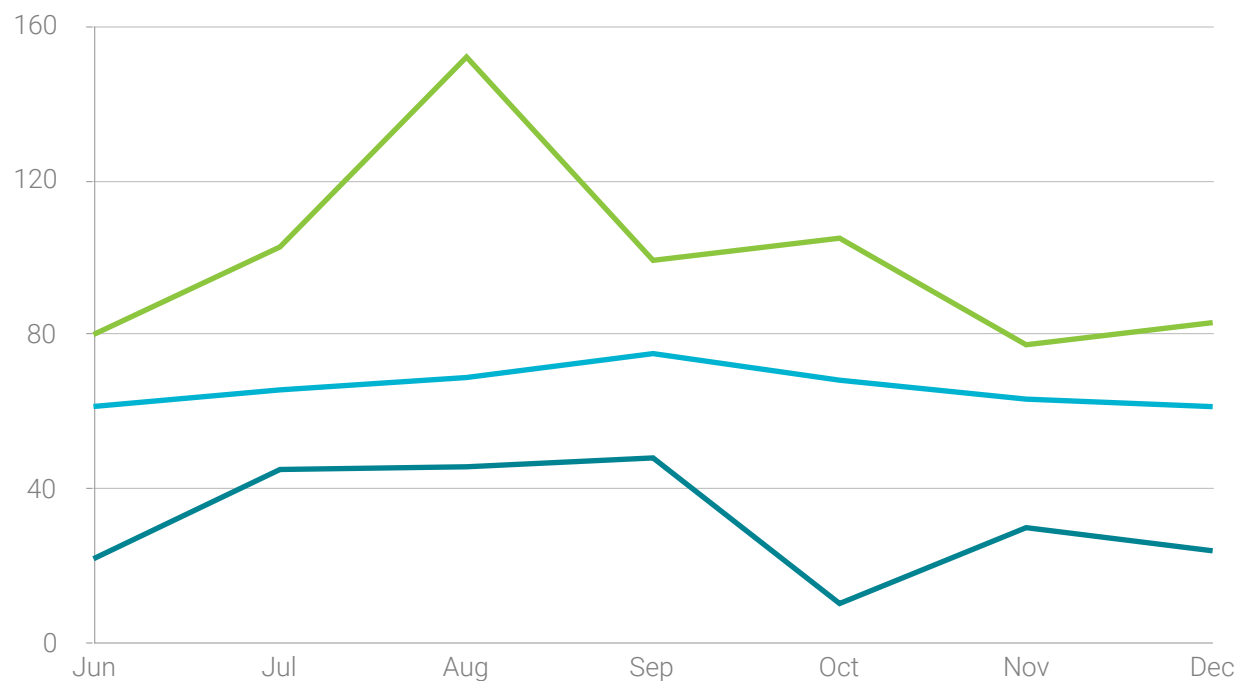
Month	Max. price Portugal (€/MWh)	Min. price Portugal (€/MWh)	Weighted average price Portugal (€/MWh)	Sales volume Portugal (MWh)	Purchase volume Portugal (MWh)
Jun	80.00	21.84	61.34	11,925.2	3,865.1
Jul	102.73	45.00	65.65	38,459.0	19,408.0
Aug	152.00	45.70	68.86	52,857.2	46,587.3
Sep	99.25	48.00	75.06	42,368.4	33,460.4
Oct	105.00	10.23	68.16	53,320.0	30,480.3
Nov	77.35	29.91	63.25	49,793.9	37,065.8
Dec	83.10	23.90	61.30	41,324.1	50,238.8



4.1.2 Monthly price of the continuous intraday market

Portuguese area 2017 - 2018

€/MWh

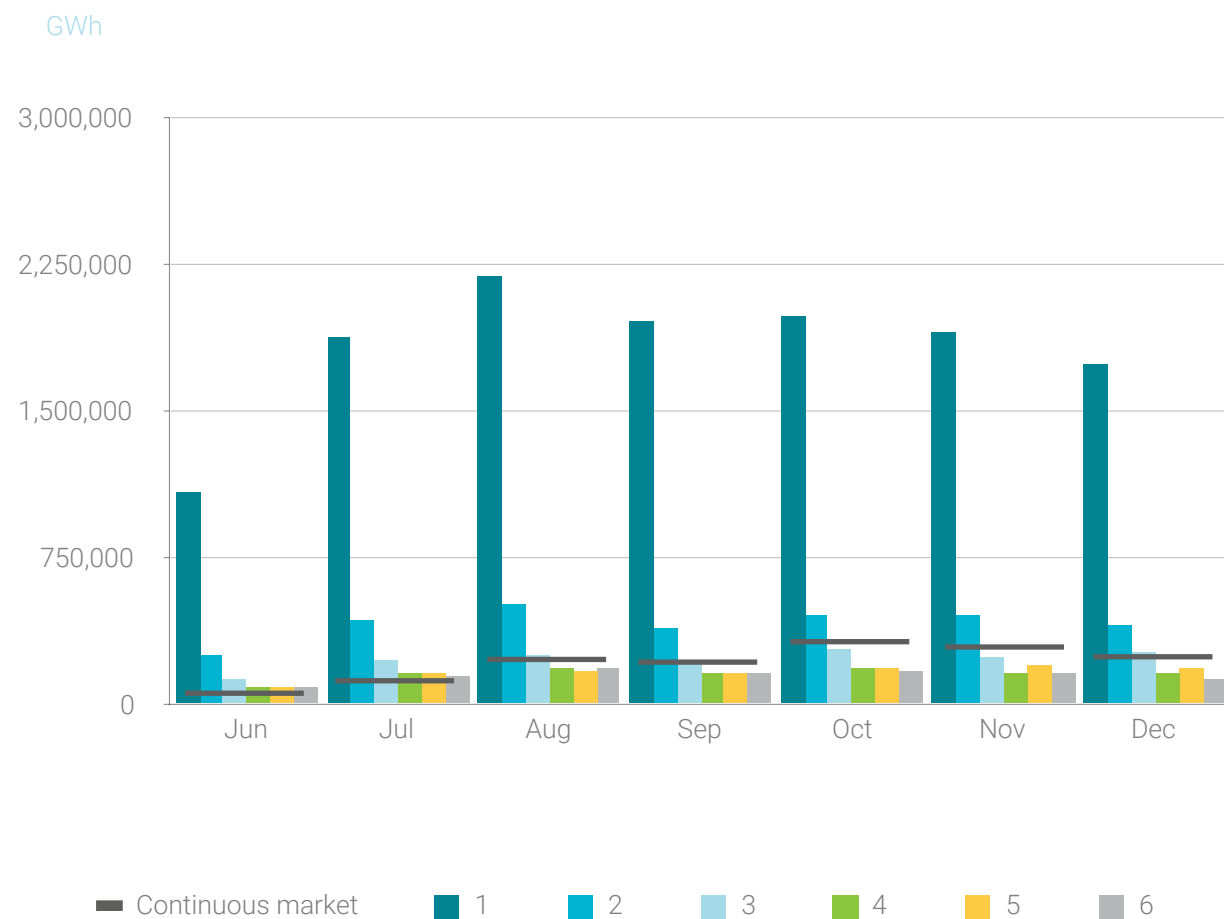


■ Max. price Portugal (€/MWh)
 ■ Min. price Portugal (€/MWh)
■ Weighted average price Portugal (€/MWh)



4.2.1 Comparison of energy volumes between the intraday market auctions sessions and the continuous intraday market

Spanish area

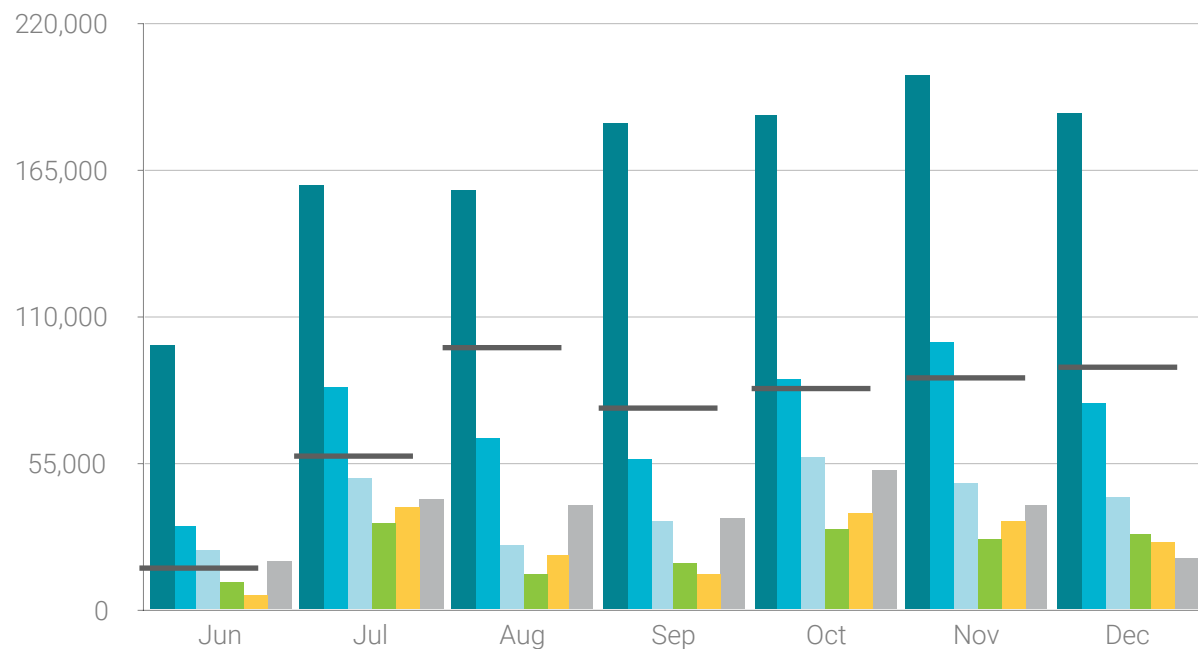




4.2.2 Comparison of energy volumes between the intraday market auctions sessions and the continuous intraday market

Portuguese area

GWh

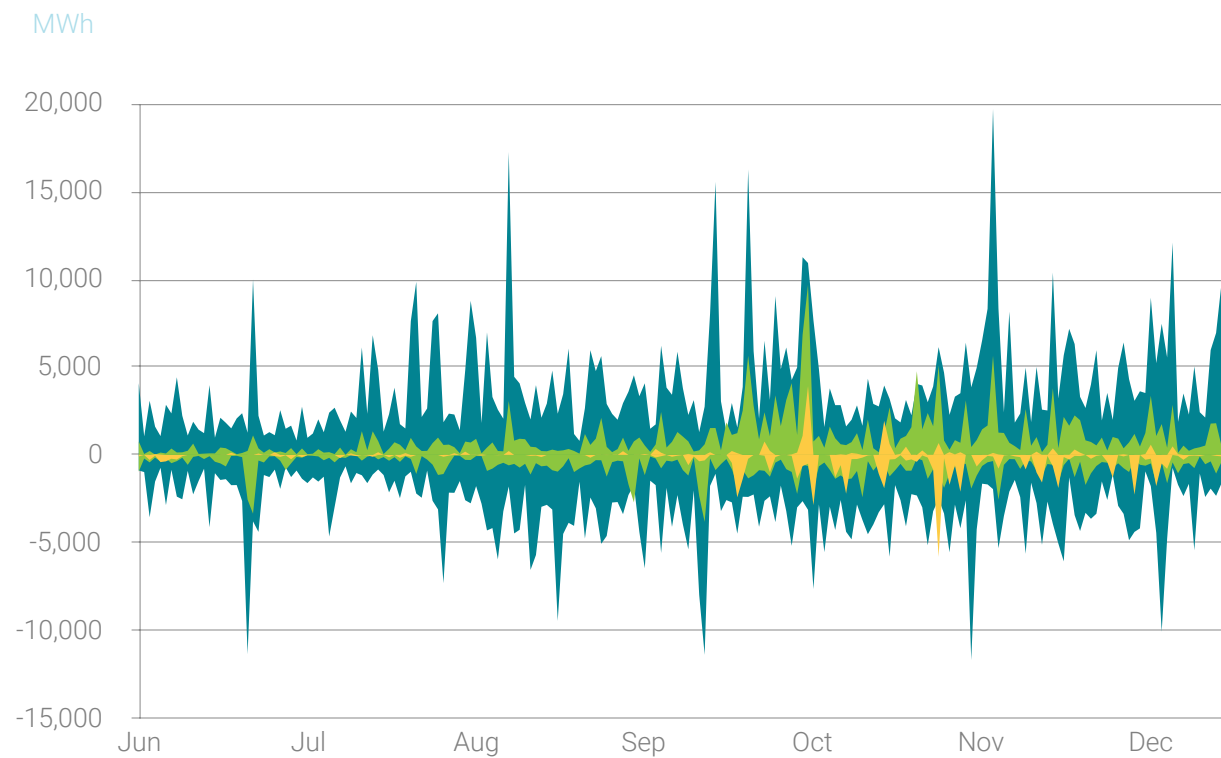


Continuous market
 1
 2
 3
 4
 5
 6



4.3.1 Sales and purchases in the continuous intraday market

Spanish area

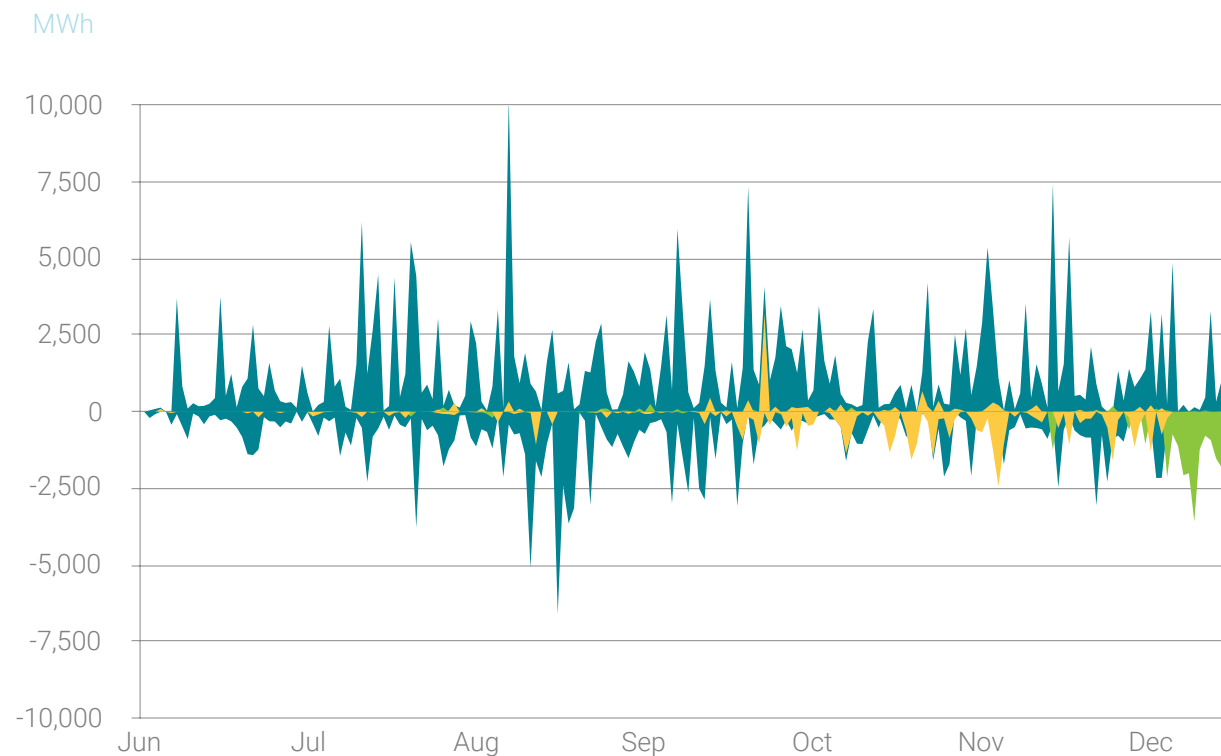


■ Pumping unit
 ■ Purchasing unit
 ■ Production unit



4.3.2 Sales and purchases in the continuous intraday market

Portuguese area

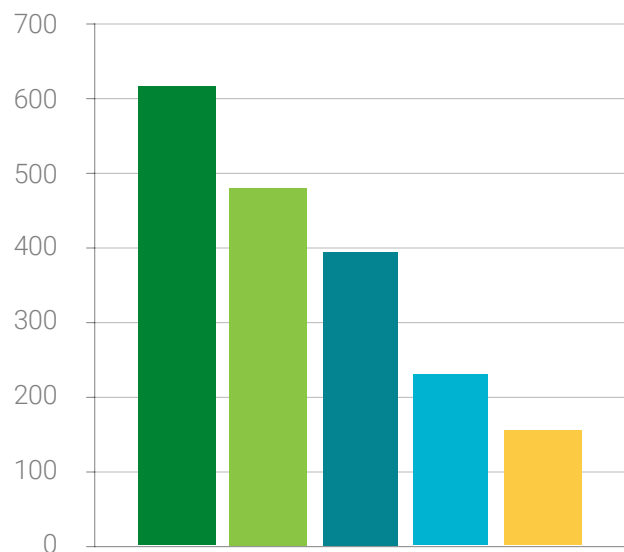


■ Pumping unit
 ■ Purchasing unit
 ■ Production unit

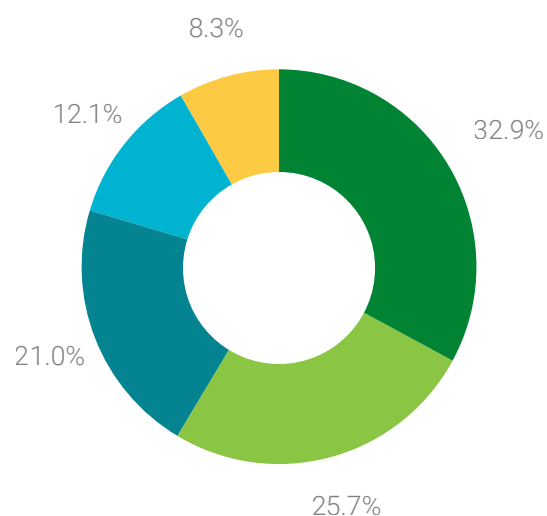


4.3.3 Energy traded by country in the continuous intraday market

GWh Energy traded by country



% energy traded by country



- Exports from Spain French border
- Internal MIBEL
- French border imports to Spain
- Exports from Portugal French border
- French border imports to Portugal



5

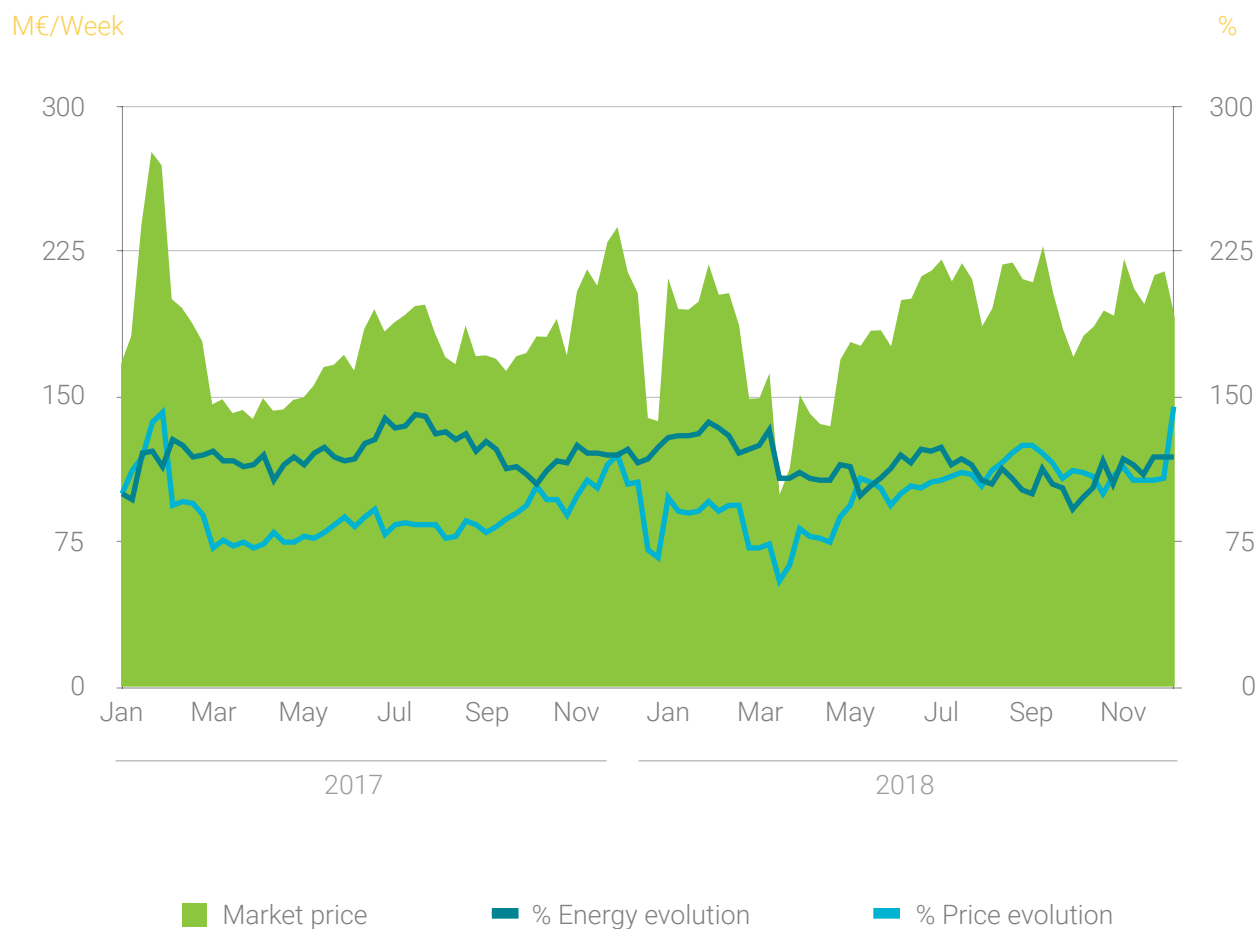
Settlement of the day-ahead and intraday market

- 5.1** Weekly trend in the volume of collections and payments, in price and energy. Day-ahead and intraday markets
- 5.2** Congestion rent in the Spanish-Portuguese interconnection
- 5.3** Congestion rent in the Spanish-French interconnection



5.1 Weekly trend in the volume of collections and payments, in price and energy. Day-ahead and intraday markets

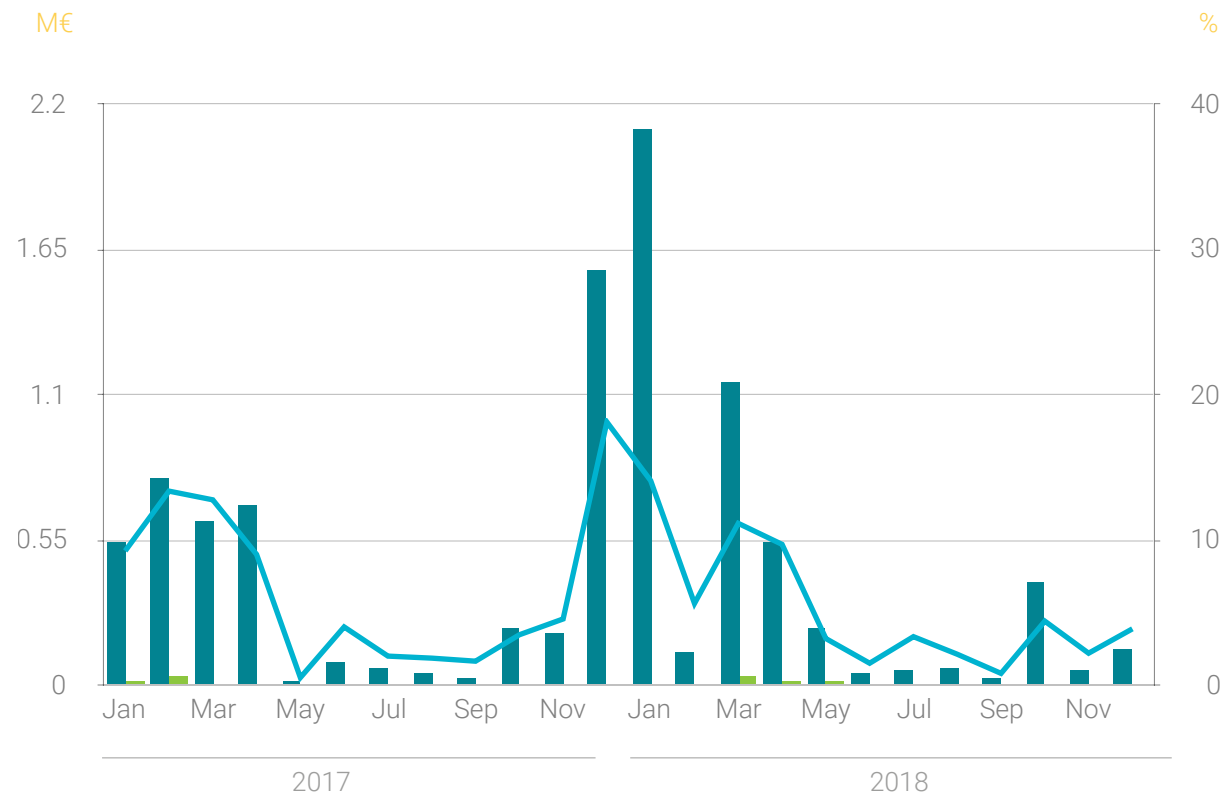
2017 - 2018





5.2 Congestion rent in the Spanish-Portuguese interconnection

2017 - 2018

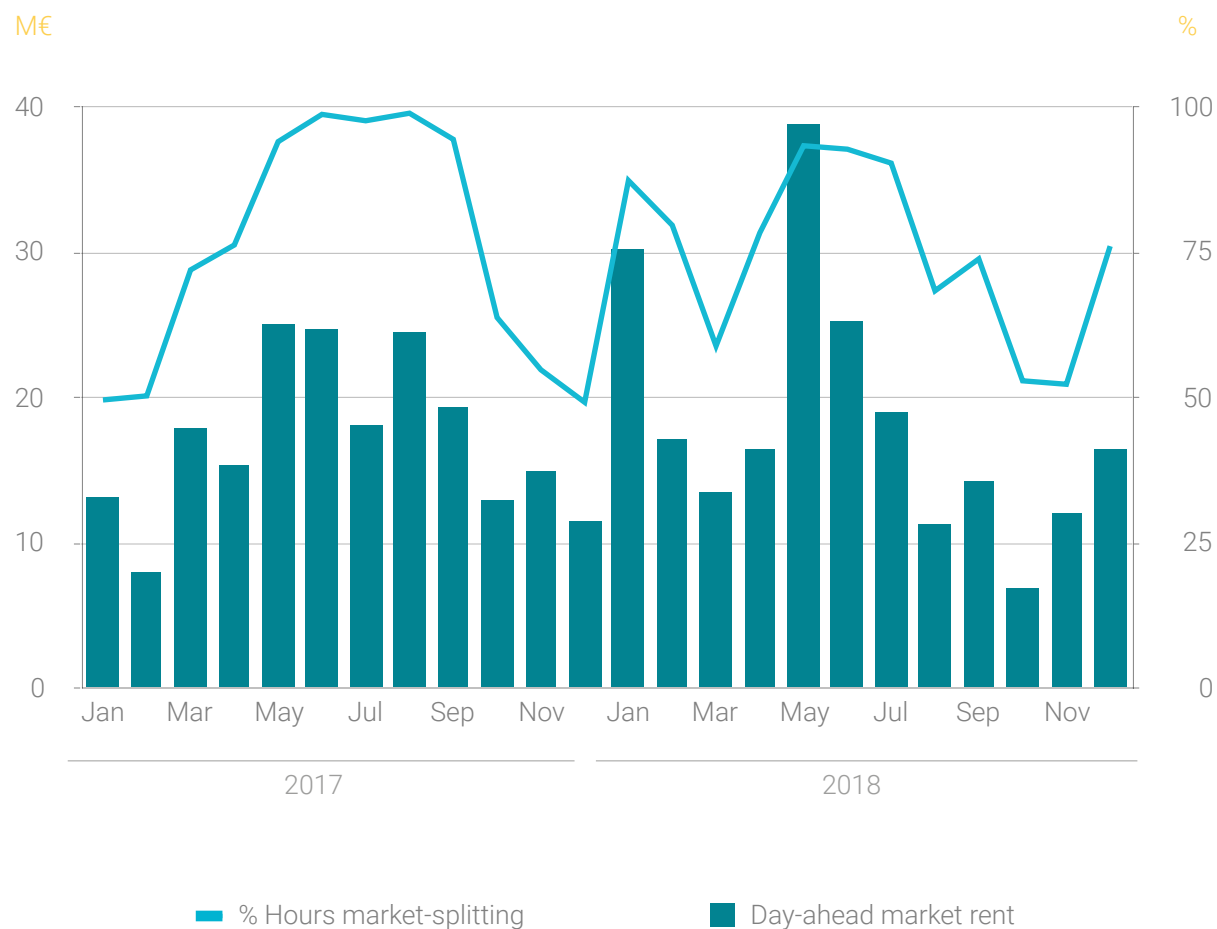


■ Day-ahead market rent
 ■ Intraday market rent
 — % hours market-splitting day-ahead market



5.3 Congestion rent in the Spanish-French interconnection

2017 - 2018





6

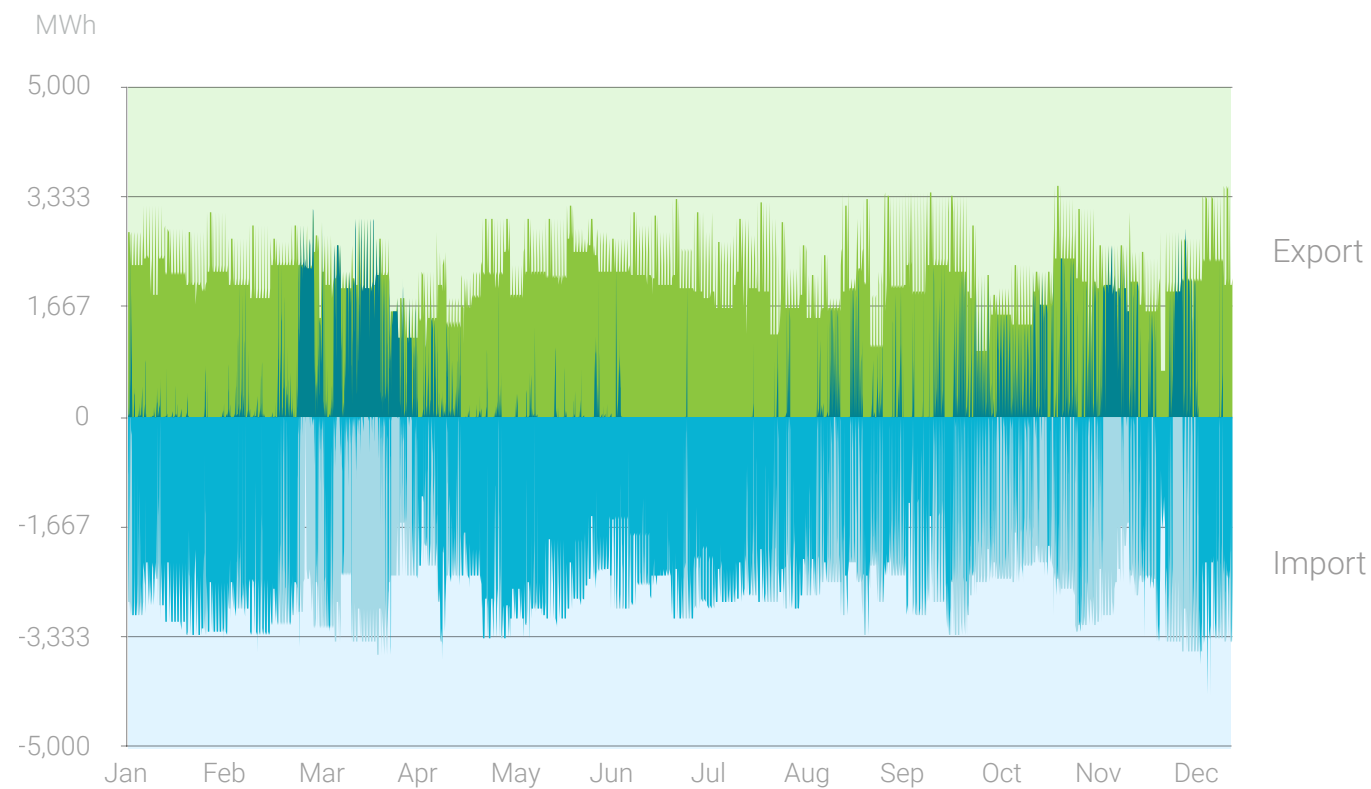
International electricity exchanges

- 6.1** Interconnection with France:
Available commercial capacity and occupation
in the exporting and importing directions
- 6.2** Interconnection with Portugal:
Available commercial capacity and occupation
in the exporting and importing directions
- 6.3** Interconnection with Morocco:
Available commercial capacity and occupation
in the exporting and importing directions
- 6.4** Average hourly energy in the interconnections
- 6.5** MIBEL borders:
energies and economic volumes
- 6.6** Border with Portugal:
energies and economic volumes



6.1 Interconnection with France: Available commercial capacity and occupation in the exporting and importing directions

2018

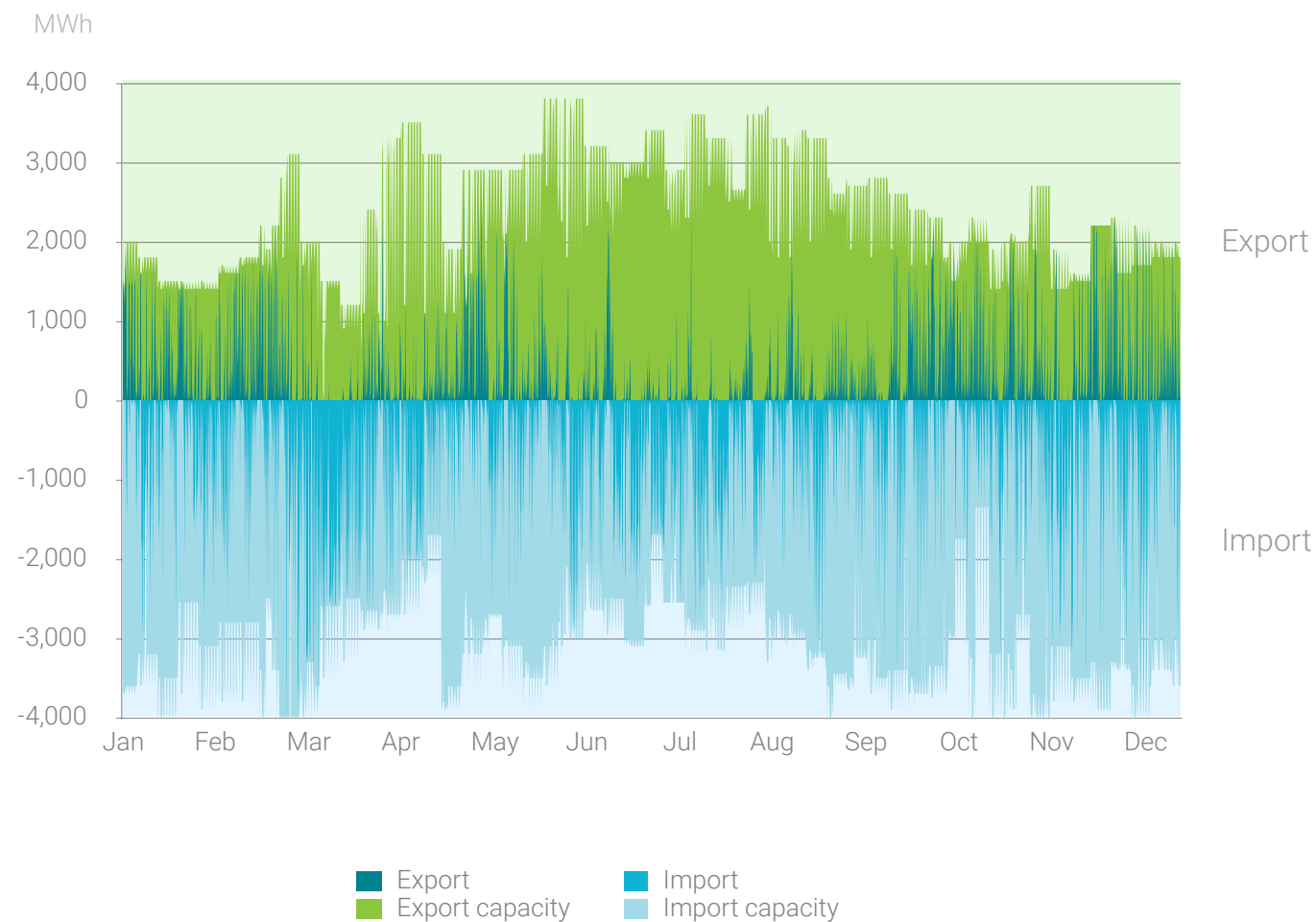


■ Export ■ Export capacity
■ Import ■ Import capacity



6.2 Interconnection with Portugal: Available commercial capacity and occupation in the exporting and importing directions

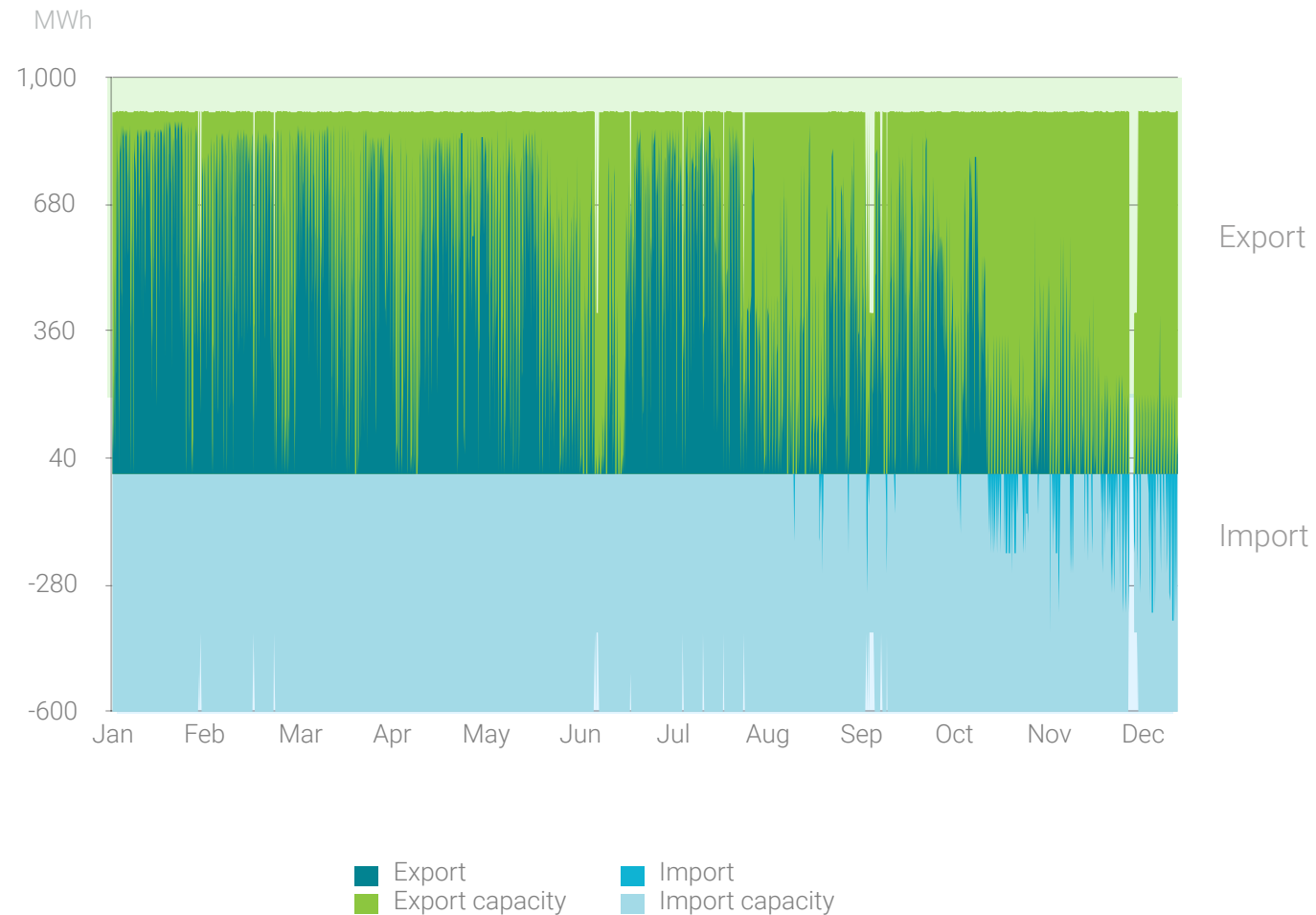
2018





6.3 Interconnection with Morocco: Available commercial capacity and occupation in the exporting and importing directions

2018





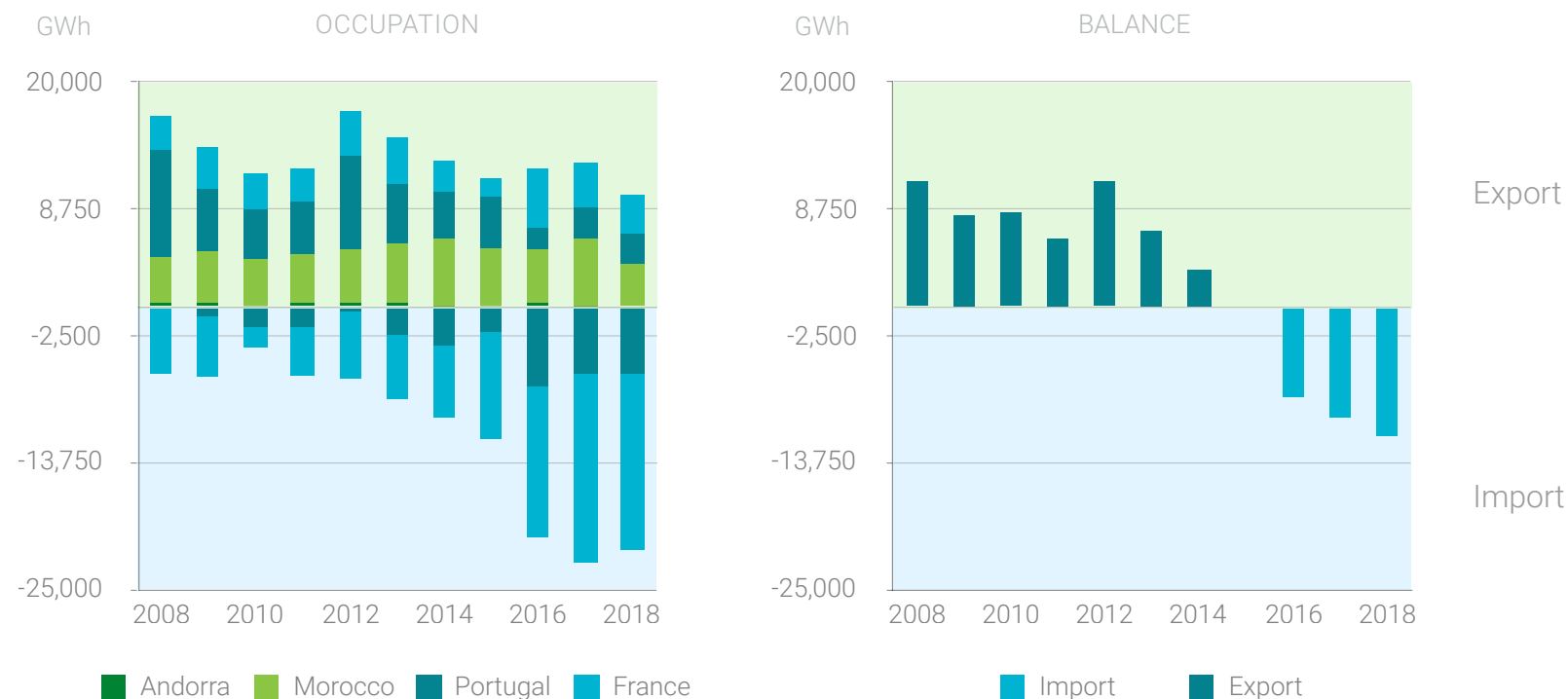
6.4.1 Average hourly energy in the interconnections

	France		Portugal		Morocco	
	2017	2018	2017	2018	2017	2018
Export						
Commercial capacity	2,300	2,192	1,993	2,222	854	898
Capacity not used	1,851	1,803	1,660	1,891	197	489
Occupation	449	389	333	331	657	409
Import						
Commercial capacity	2,564	2,565	3,007	3,083	582	593
Capacity not used	623	764	2,355	2,441	582	579
Occupation	1,941	1,800	652	642	0	14



6.4.2 Annual occupation in the interconnections. PHFC

2018



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Exports (TWh)	16.91	14.26	12.01	12.32	17.54	15.04	13.09	11.55	12.36	12.94	10.10
Imports (TWh)	-5.78	-6.09	-3.59	-6.13	-6.26	-8.21	-9.65	-11.52	-20.29	-22.72	-21.52
Balance (TWh)	11.13	8.16	8.42	6.19	11.28	6.83	3.45	0.03	-7.92	-9.78	-11.42

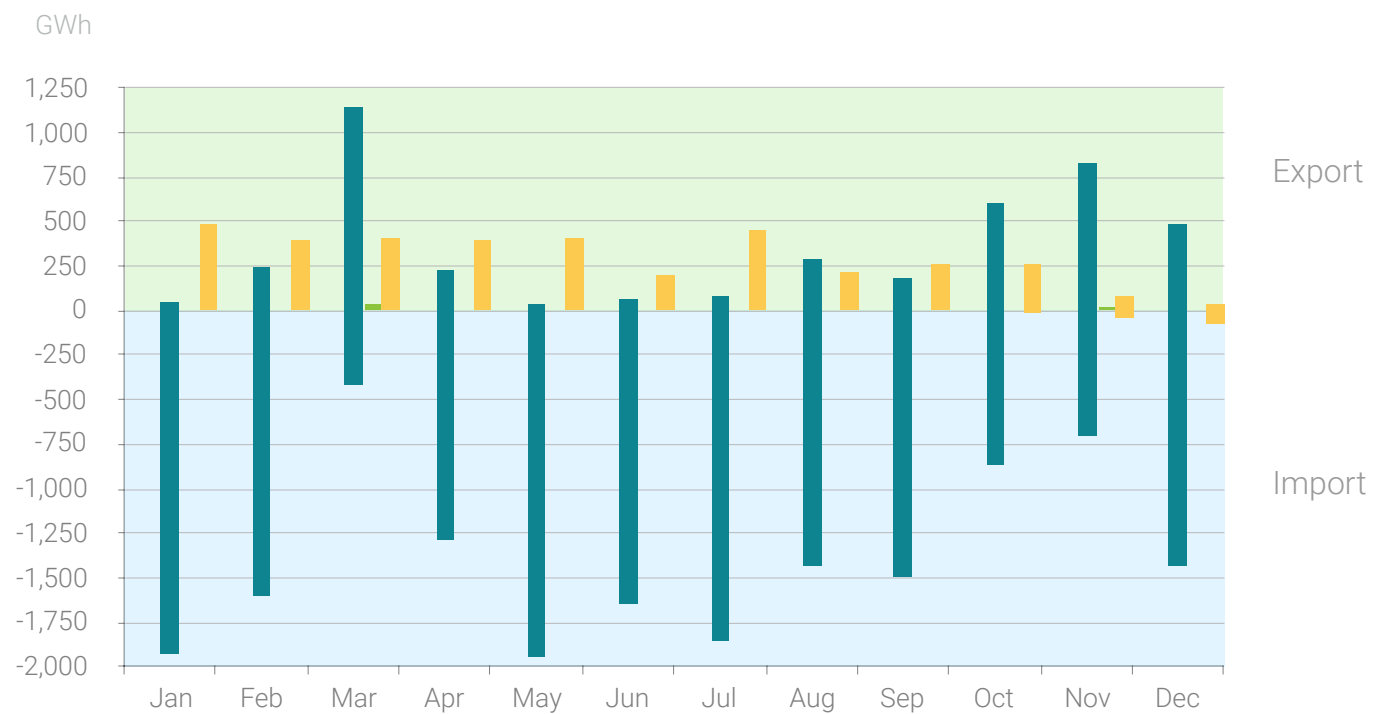


6.5.1 Monthly energies exchanged on the MIBEL borders*

2018

Total export = 7,904 GWh

Total import = 16,686 GWh



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

■ France ■ Andorra ■ Morocco

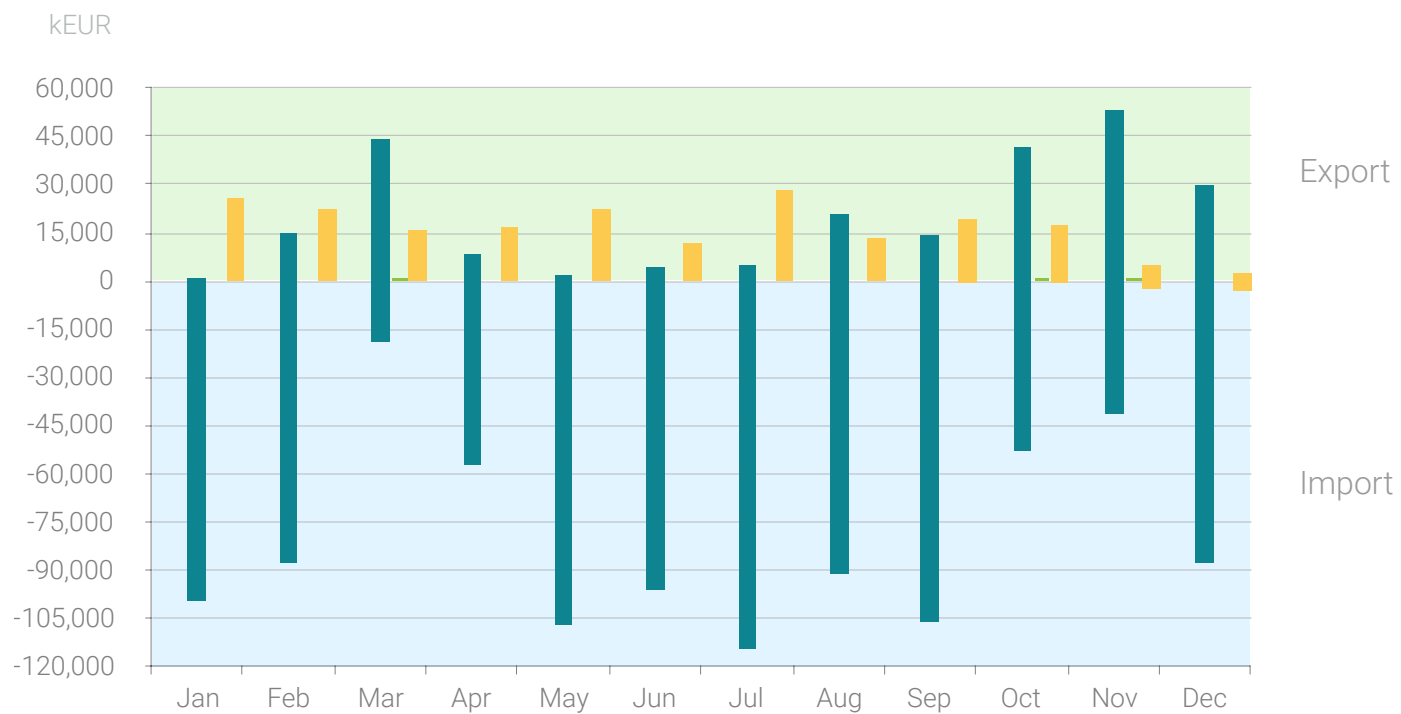


6.5.2 Monthly economic volumes exchanged on the MIBEL borders*

2018

Total export = 446,294 kEUR

Total import = 966,634 kEUR



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

■ France ■ Andorra ■ Morocco

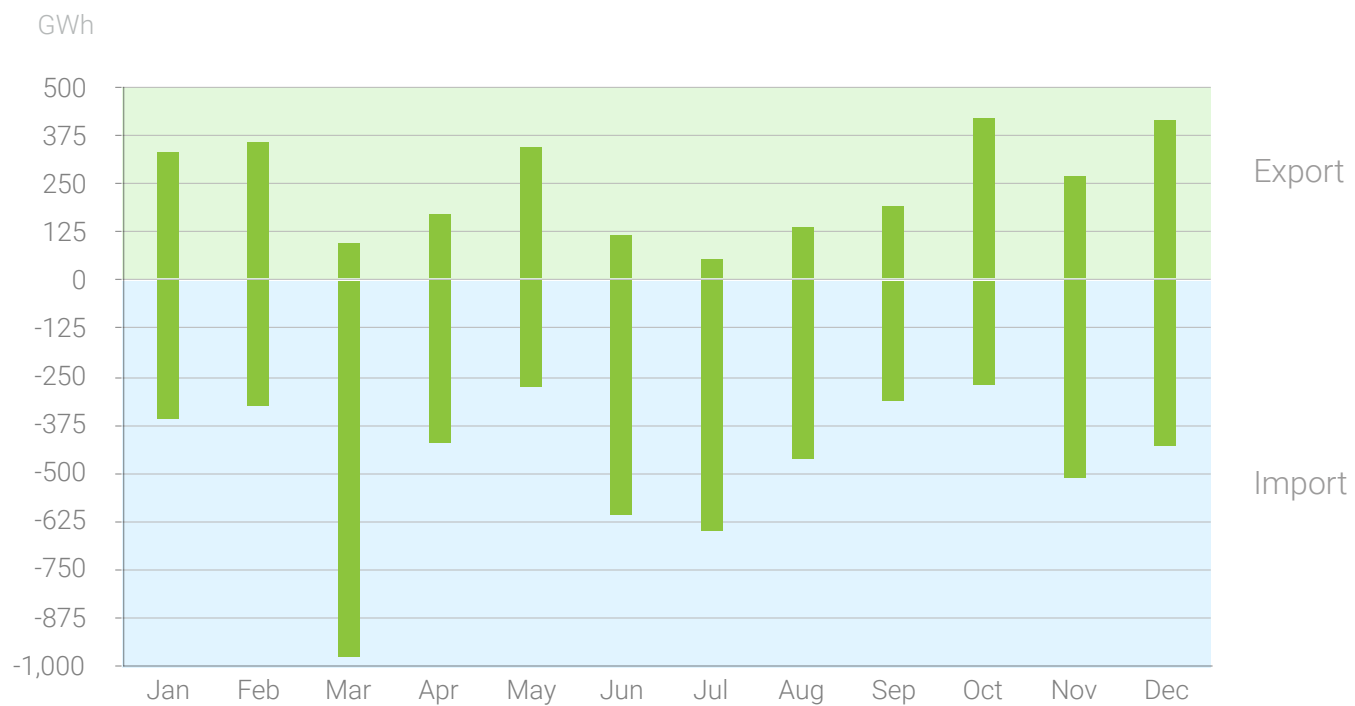


6.6.1 Monthly energies exchanged on the border with Portugal*

2018

Total export = 2,898 GWh

Total import = 5,623 GWh



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

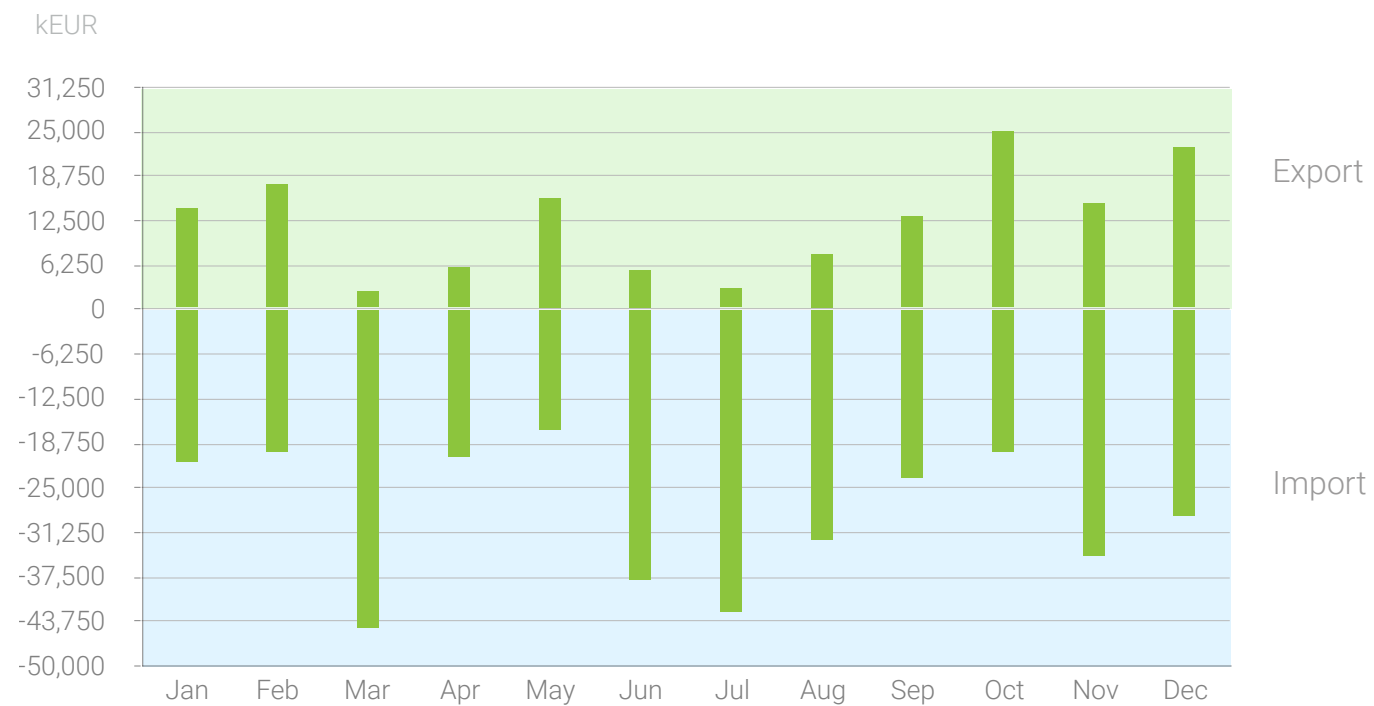


6.6.2 Monthly economic volumes exchanged on the border with Portugal*

2018

Total export = 148,205 kEUR

Total import = 342,868 kEUR



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



7

Prices and energies of European markets

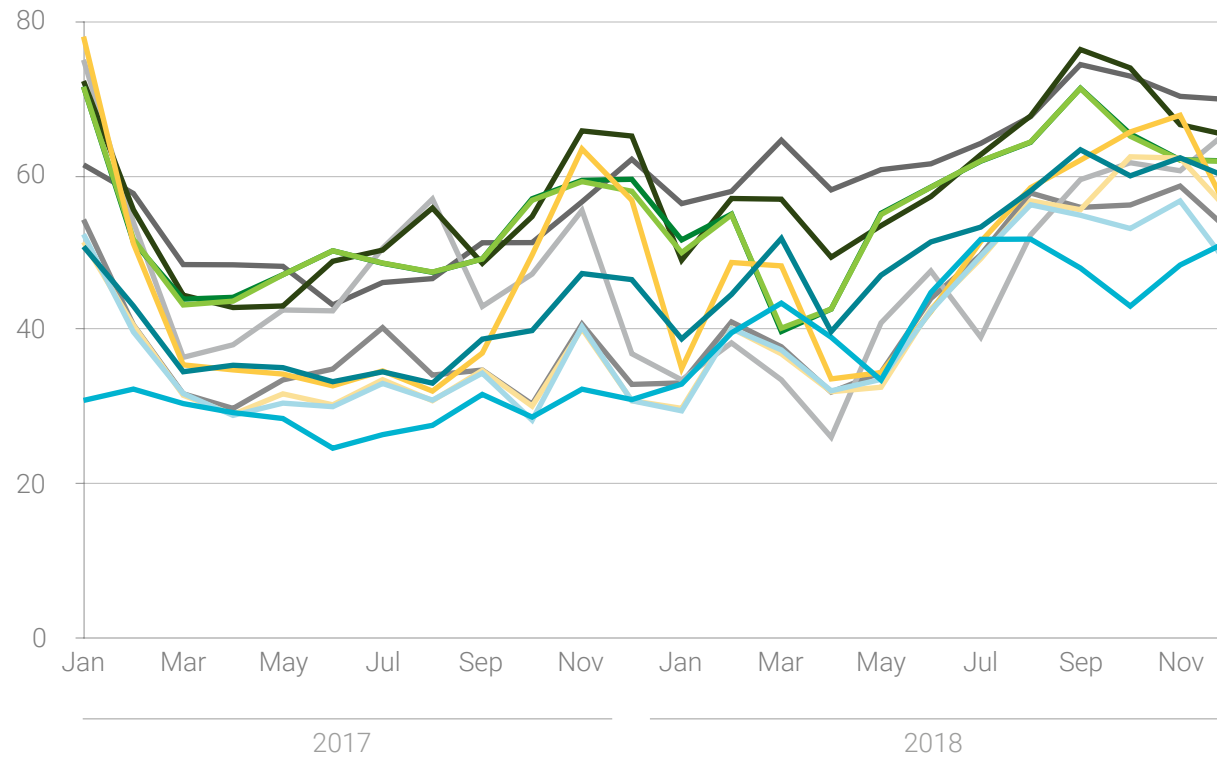
- 7.1 Average monthly prices EUROPEX
- 7.2 Monthly energies EUROPEX
- 7.3 Maximum hourly prices per month
in European markets
- 7.4 Minimum hourly prices per month
in European markets
- 7.5 Percentage of hours with hourly price
differences below € 1/MWh



7.1 Average monthly prices EUROPEX

2017 - 2018

€/MWh

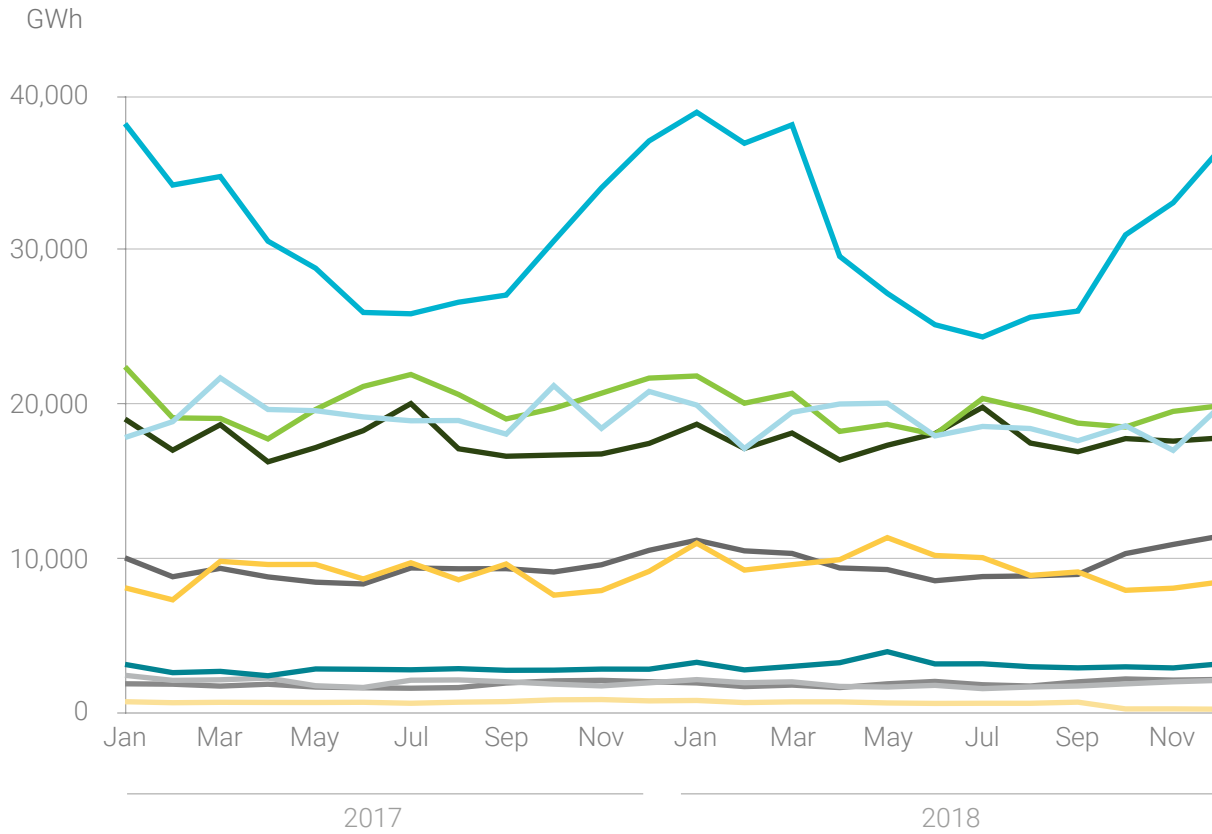


- EPEX - Netherlands
 - EXAA - Austria
 - OPCOM - Romania
- NordPool
 - OMIE Spain
 - OTE - Czech Republic
- EPEX - Germany
 - OMIE - Portugal
 - N2EX
- EPEX - France
 - GME - Italy



7.2 Monthly energies EUROPEX

2017 - 2018

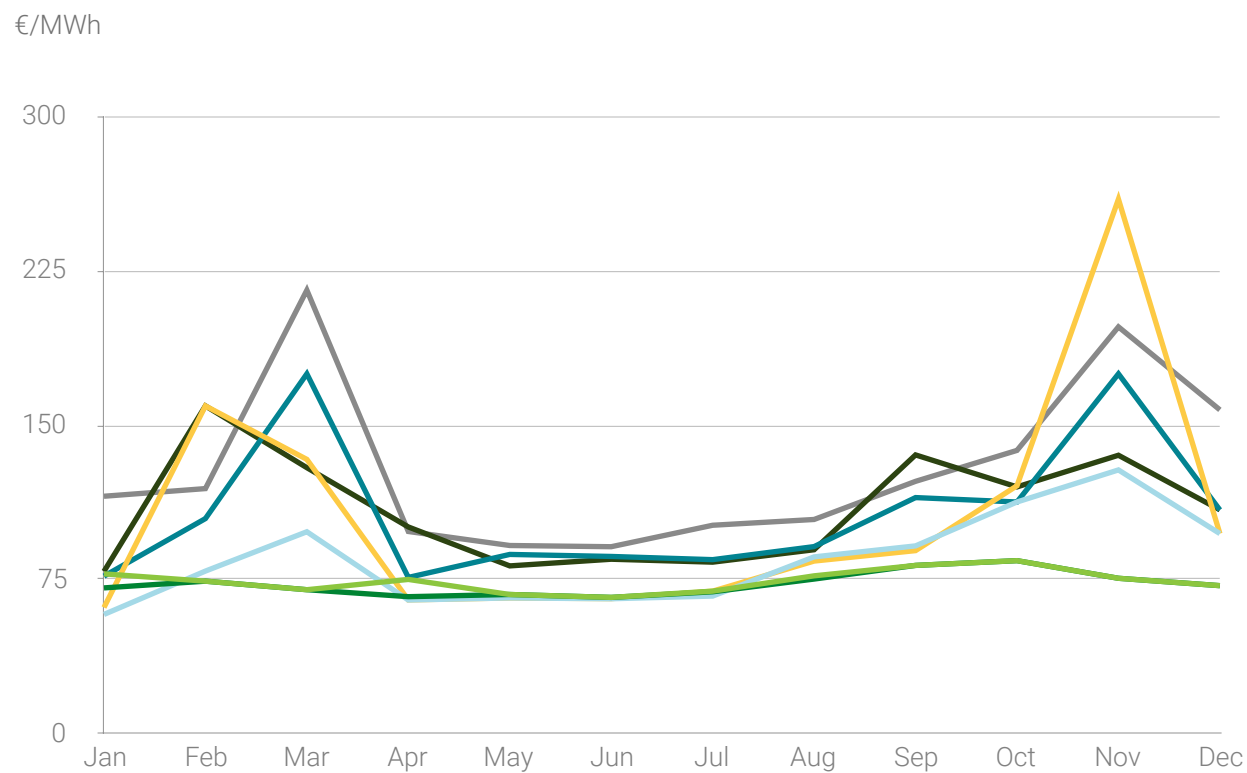


- EPEX - Netherlands
- NordPool
- EPEX - Germany
- EPEX - France
- EXAA - Austria
- OMIE
- GME - Italy
- OPCOM - Romania
- OTE - Czech Republic
- N2EX



7.3 Maximum hourly prices per month in European markets

2018

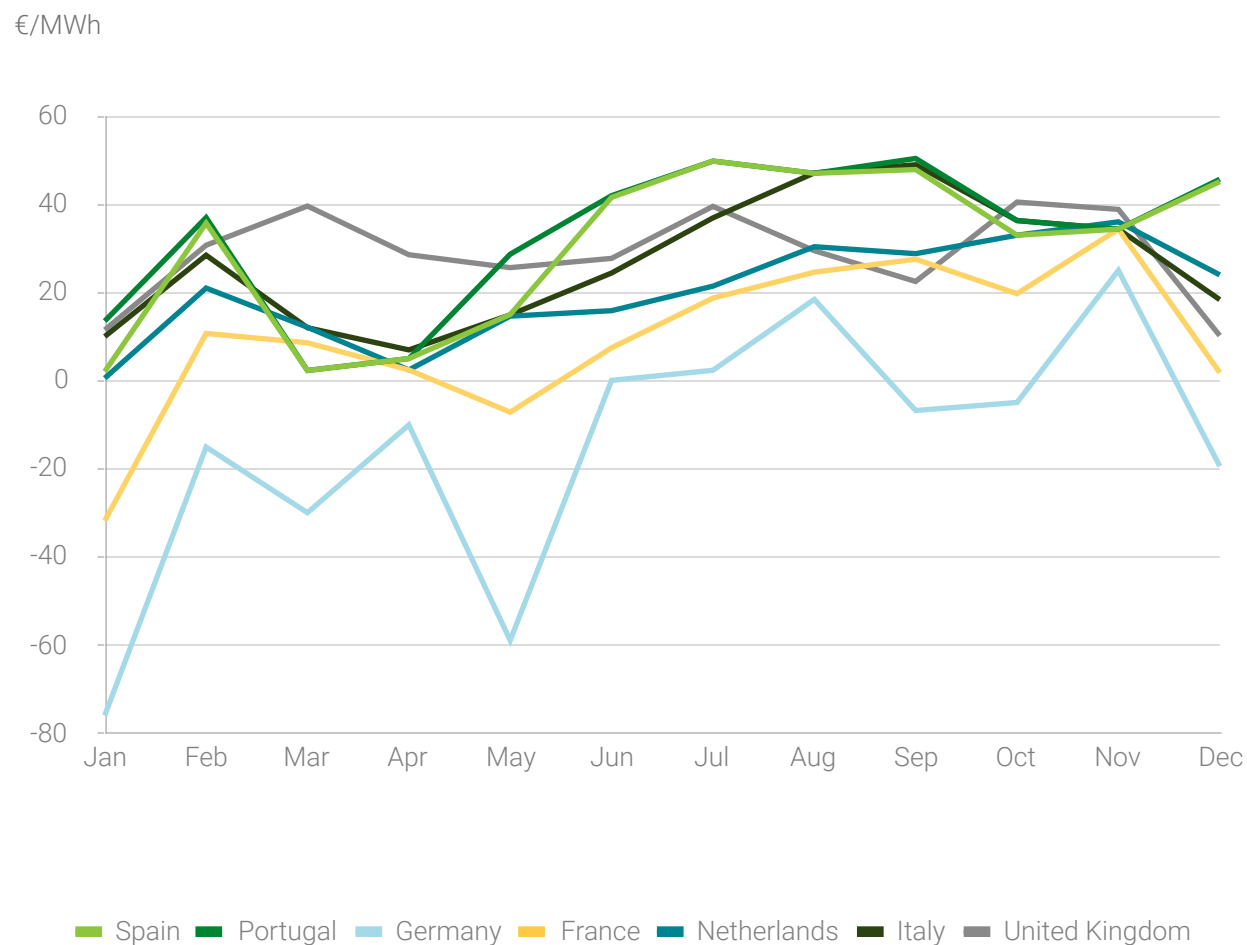


Spain Portugal Germany France Netherlands Italy United Kingdom



7.4 Minimum hourly prices per month in European markets

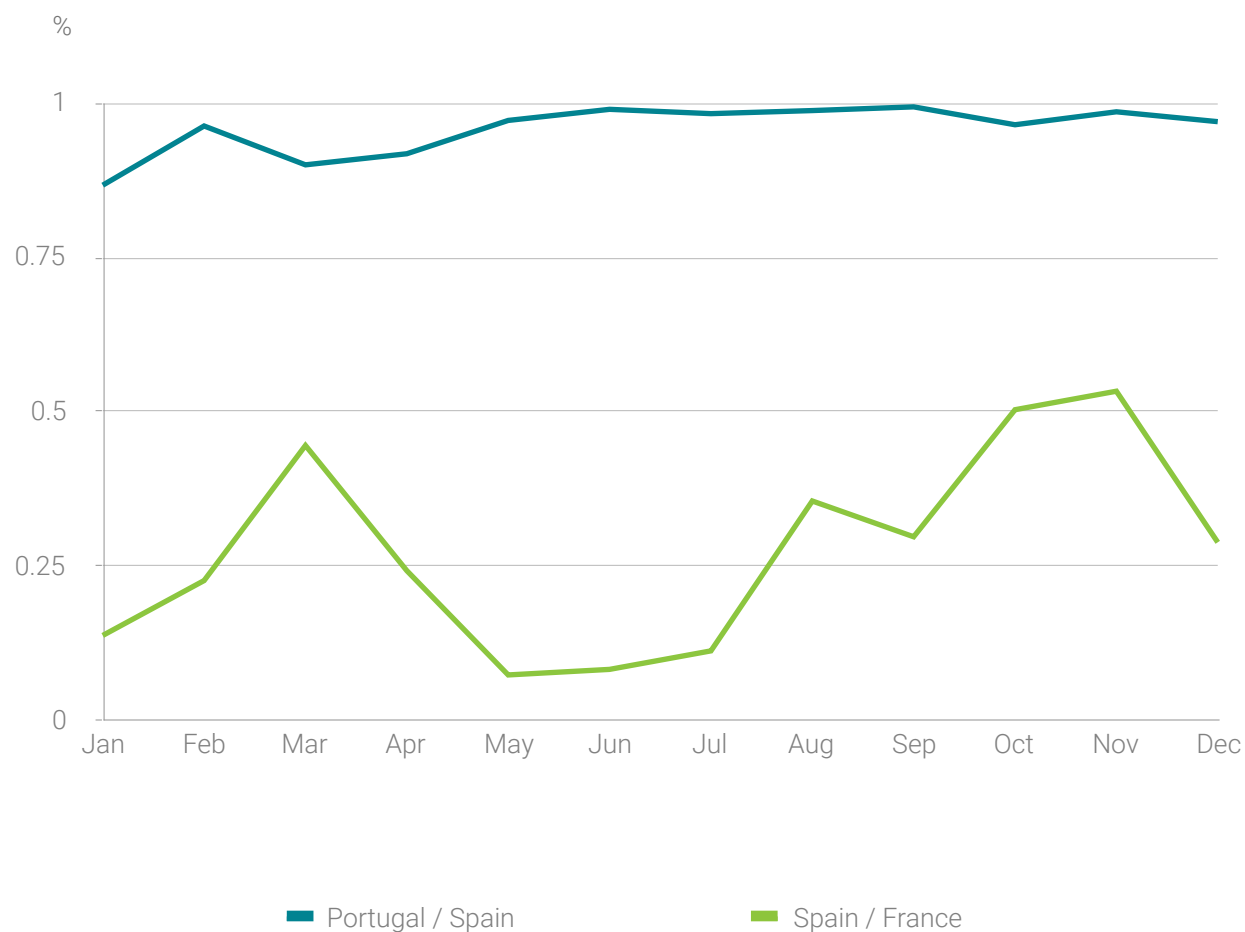
2018





7.5.1 Percentage of hours with hourly price differences below € 1/MWh

at the interconnections between Spain and Portugal and between Spain and France





7.5.2 Prices of international markets with hourly price differences below € 1/MWh

% of hours with price difference < € 1/ MWh

% of hours France / Spain < € 1 / MWh in 2018 = **27%**

