

# 2025

## RENEWABLE ELECTRICITY BULLETIN

FEBRUARY  
2025

PORTUGAL NEEDS  
OUR ENERGY



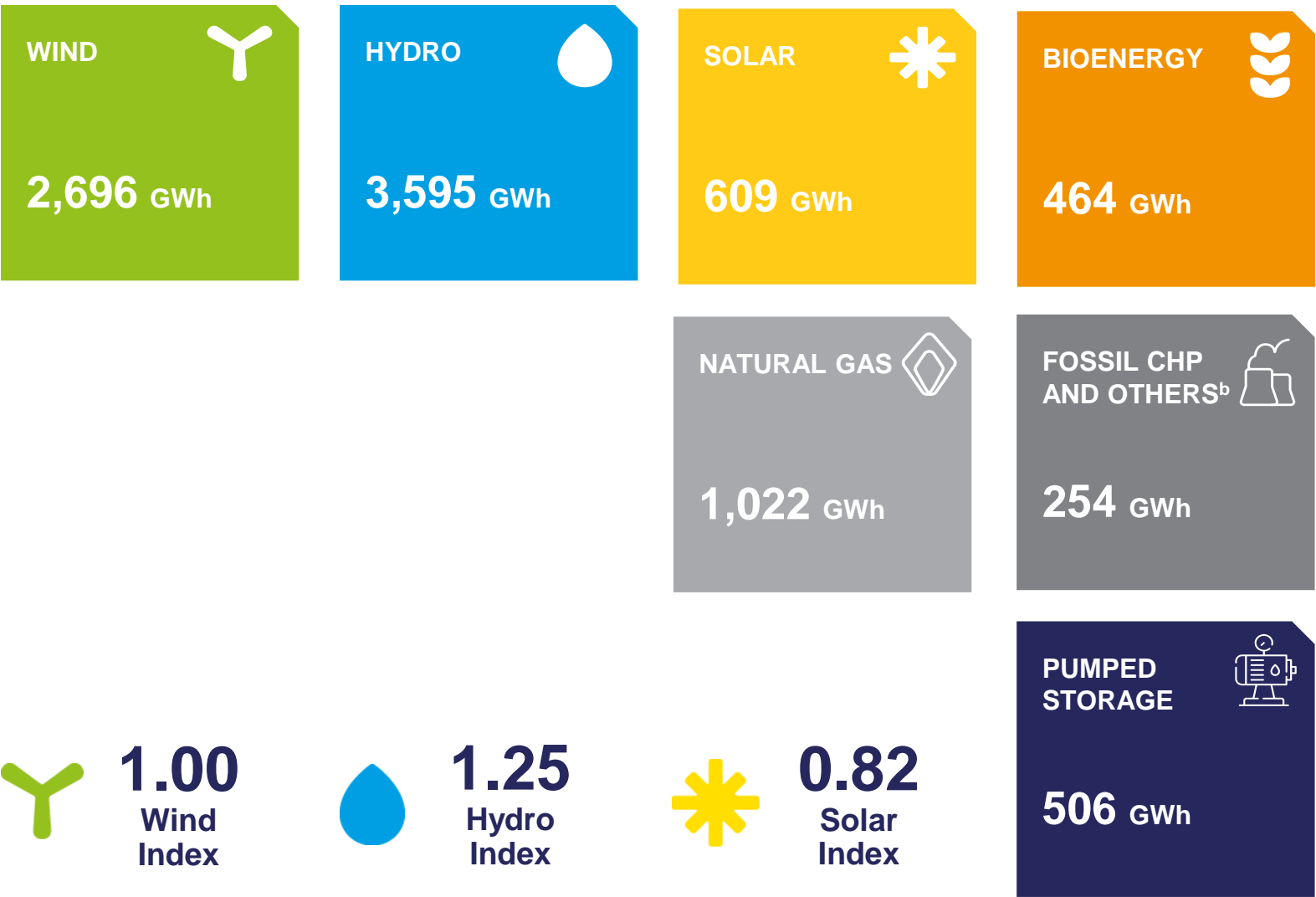
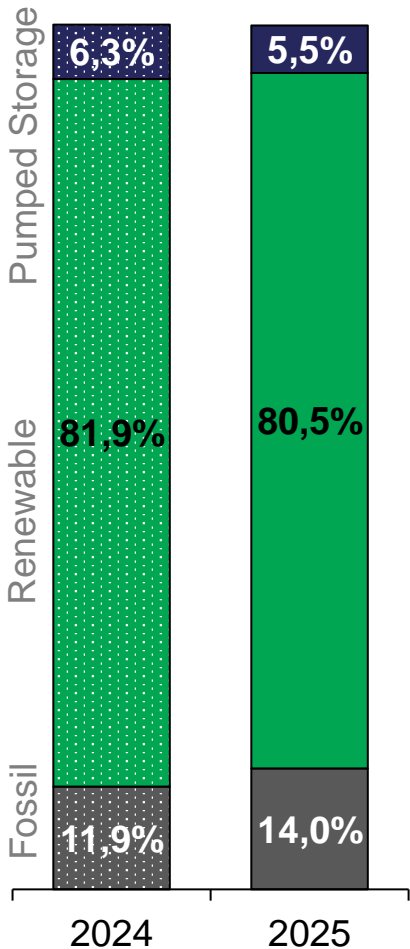
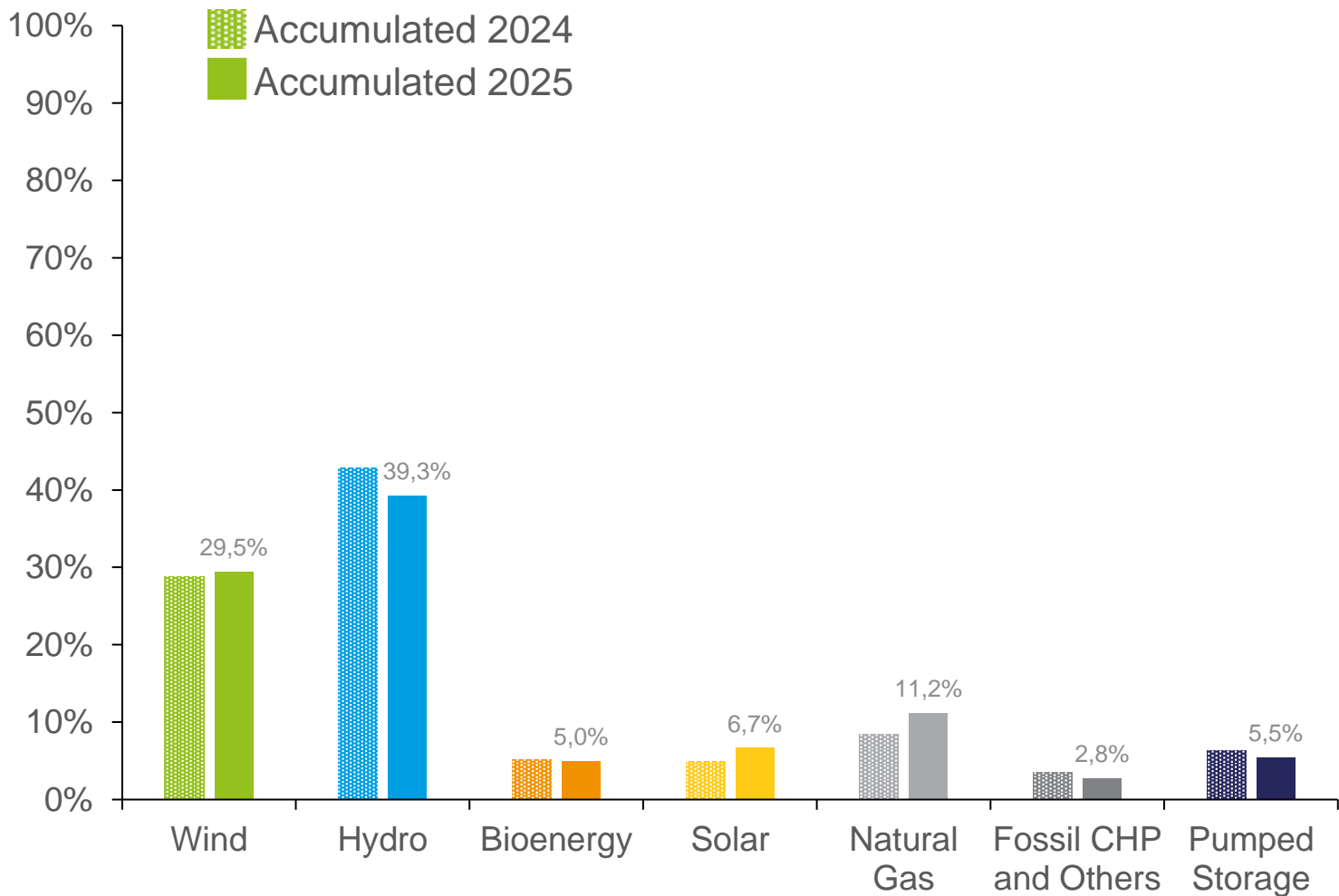
**APREN** Associação  
de Energias  
Renováveis



# EXECUTIVE SUMMARY

## CUMULATIVE GENERATION FEB 2025

### MAIN INDICATORS



### COMPARING TO THE SAME PERIOD IN 2024



<sup>a</sup> Generation refers to the net energy generation of the power stations, considering the pumping production recently disclosed by REN. Production from pumping is not included in the percentage of production from renewable sources.  
<sup>b</sup> Includes fuel oil, diesel, the non-biodegradable fraction of MSW and new waste.  
<sup>c</sup> Consumption refers to the net generation of energy by power stations, considering the import-export balance.  
Source: REN, APREN Analysis



# MONTHLY ANALYSIS IN MAINLAND PORTUGAL

## FEBRUARY 2025

Between 1st and 28th February 2025, **renewable incorporation** was 81.2%, making up 3,499 GWh of the 4,309 GWh produced in the month under review.

Compared to February 2024, there was a 5.1 per cent reduction in national electricity production, which was mainly the result of a 12.5 percentage point (p.p.) decrease in wind production.

In February 2025, imports totalled 8.8% of electricity consumption in mainland Portugal.

Unlike the previous month, there were no situations of curtailment in February 2025.

## MAIN INDICATORS COMPARING TO FEBRUARY 2024

GWh

**4,309**

Generation<sup>a</sup>

▽ **5.1%**

GWh

**4,414**

Consumption<sup>c</sup>

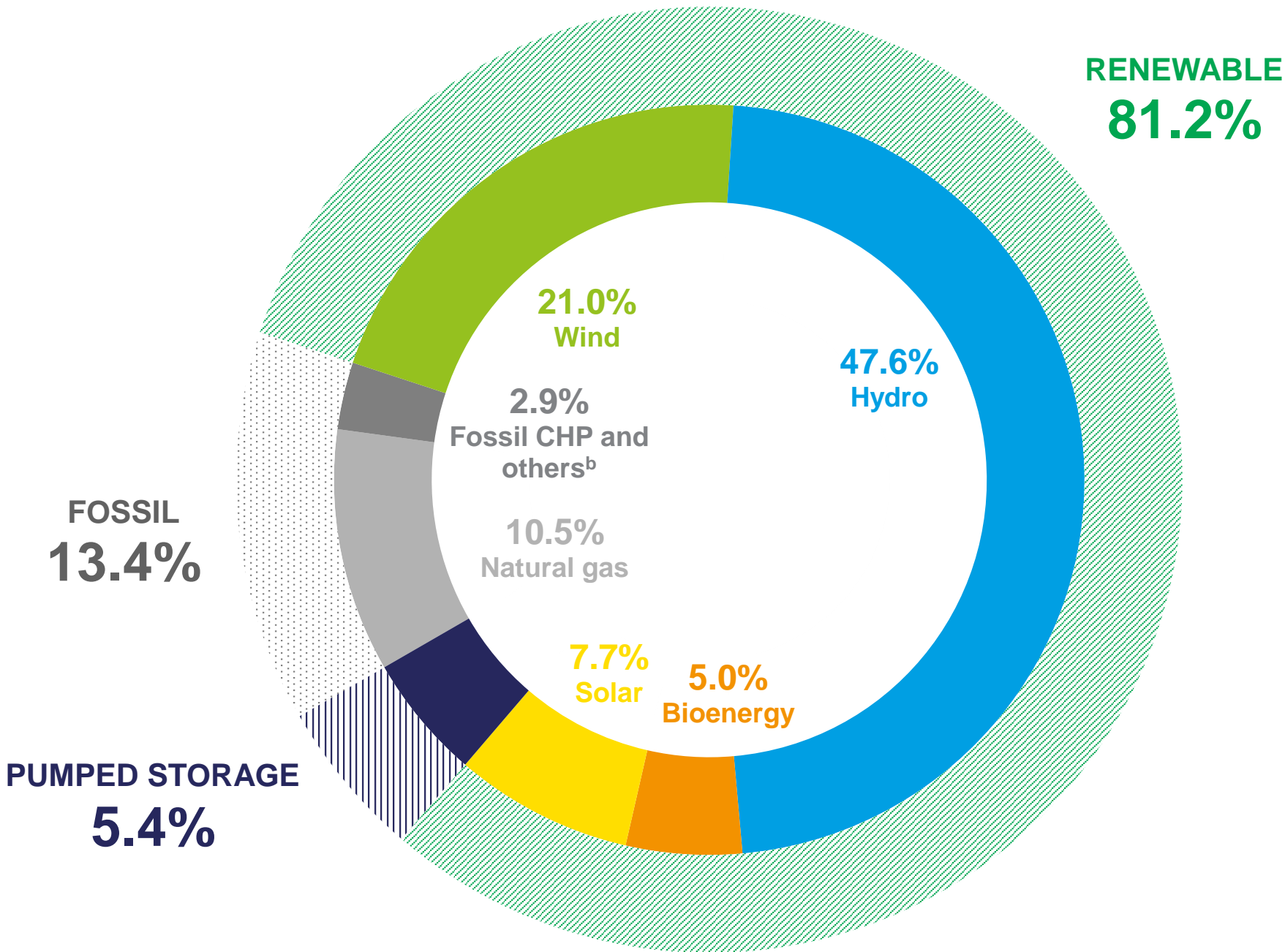
△ **4.1%**

%

**81.2**

Renewable incorporation

▽ **2.2 p.p.**



RENEWABLE  
**81.2%**

WIND INDEX




**0.71**

HYDRO INDEX




**1.28**

STORAGE IN DAMS



**73.7%**

SOLAR INDEX



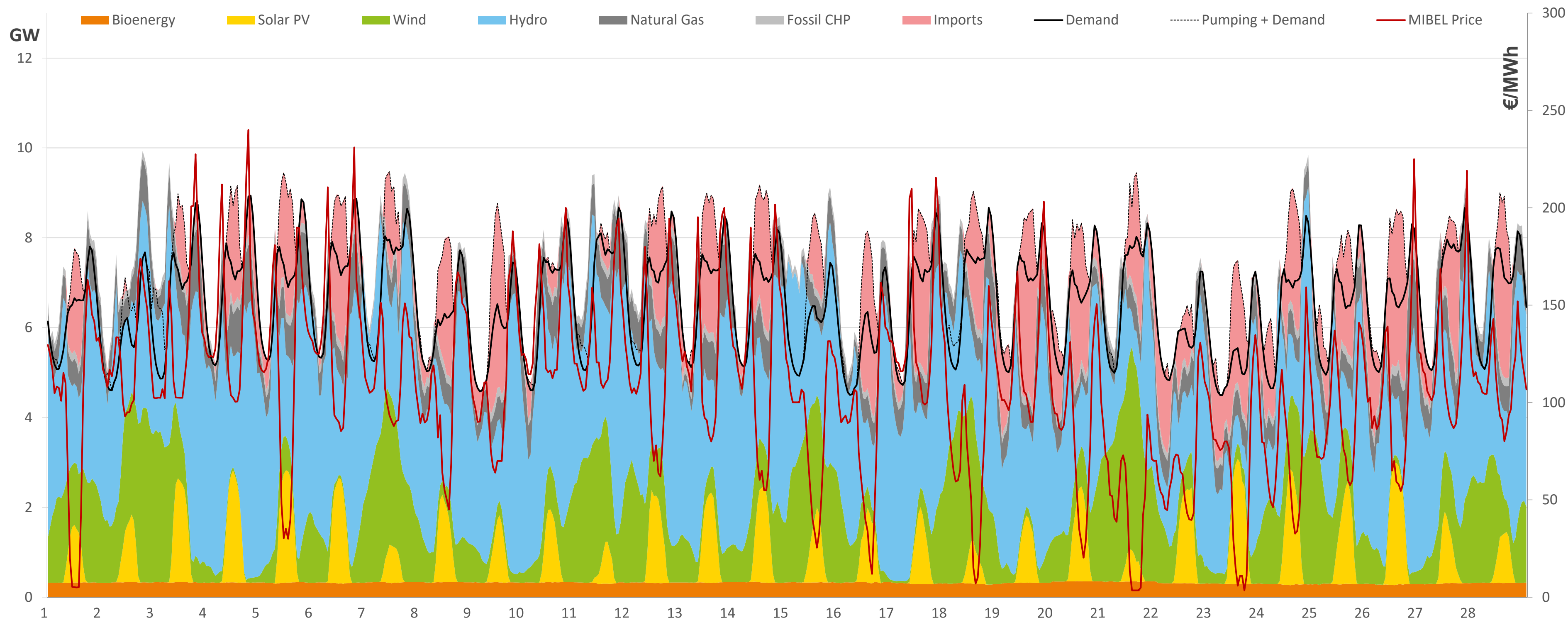
**1.25**

<sup>a</sup> Generation refers to the net energy generation of the power stations, considering the pumping production recently disclosed by REN. Production from pumping is not included in the percentage of production from renewable sources.  
<sup>b</sup> Includes fuel oil, diesel, the non-biodegradable fraction of MSW and new waste.  
<sup>c</sup> Consumption refers to the net generation of energy by power stations, considering the import-export balance.  
Source: REN, APREN Analysis



# MONTHLY ANALYSIS IN MAINLAND PORTUGAL

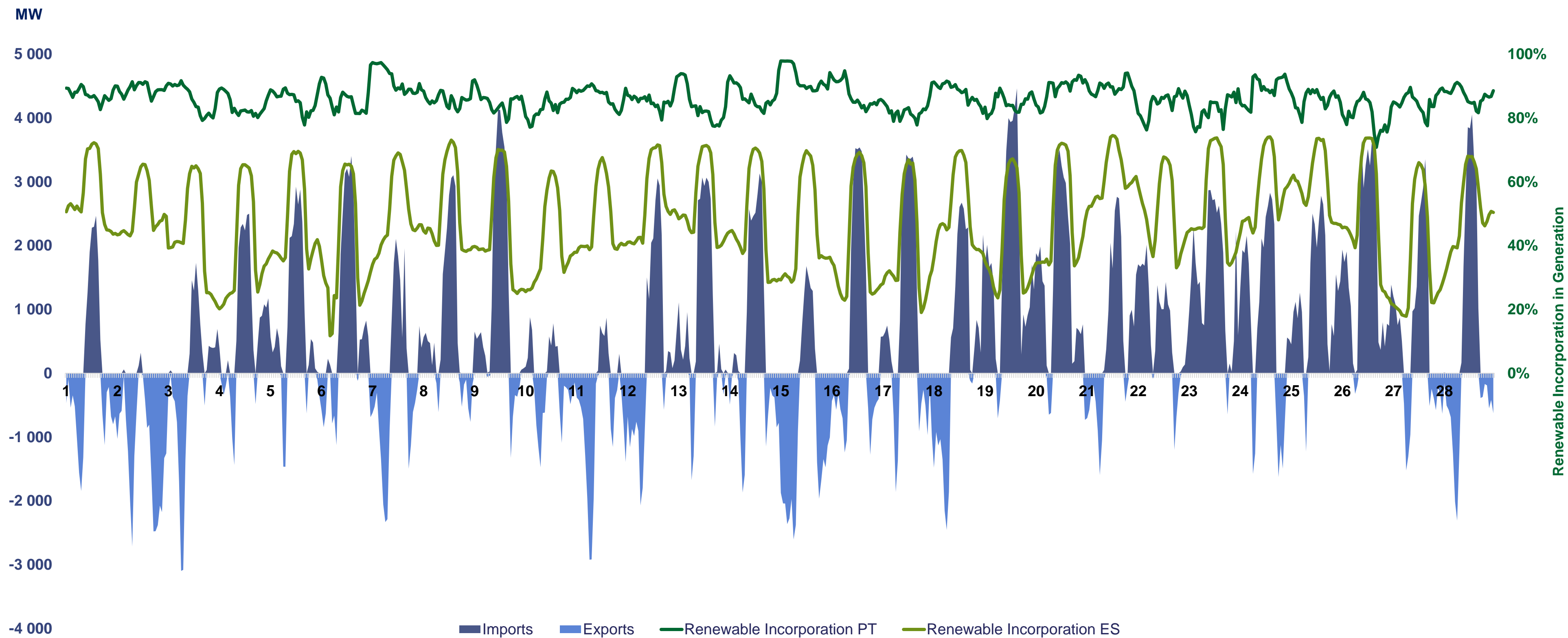
## LOAD DIAGRAM FOR FEBRUARY 2025





# MONTHLY ANALYSIS IN MAINLAND PORTUGAL

## IMPORTS AND EXPORTS DIAGRAM





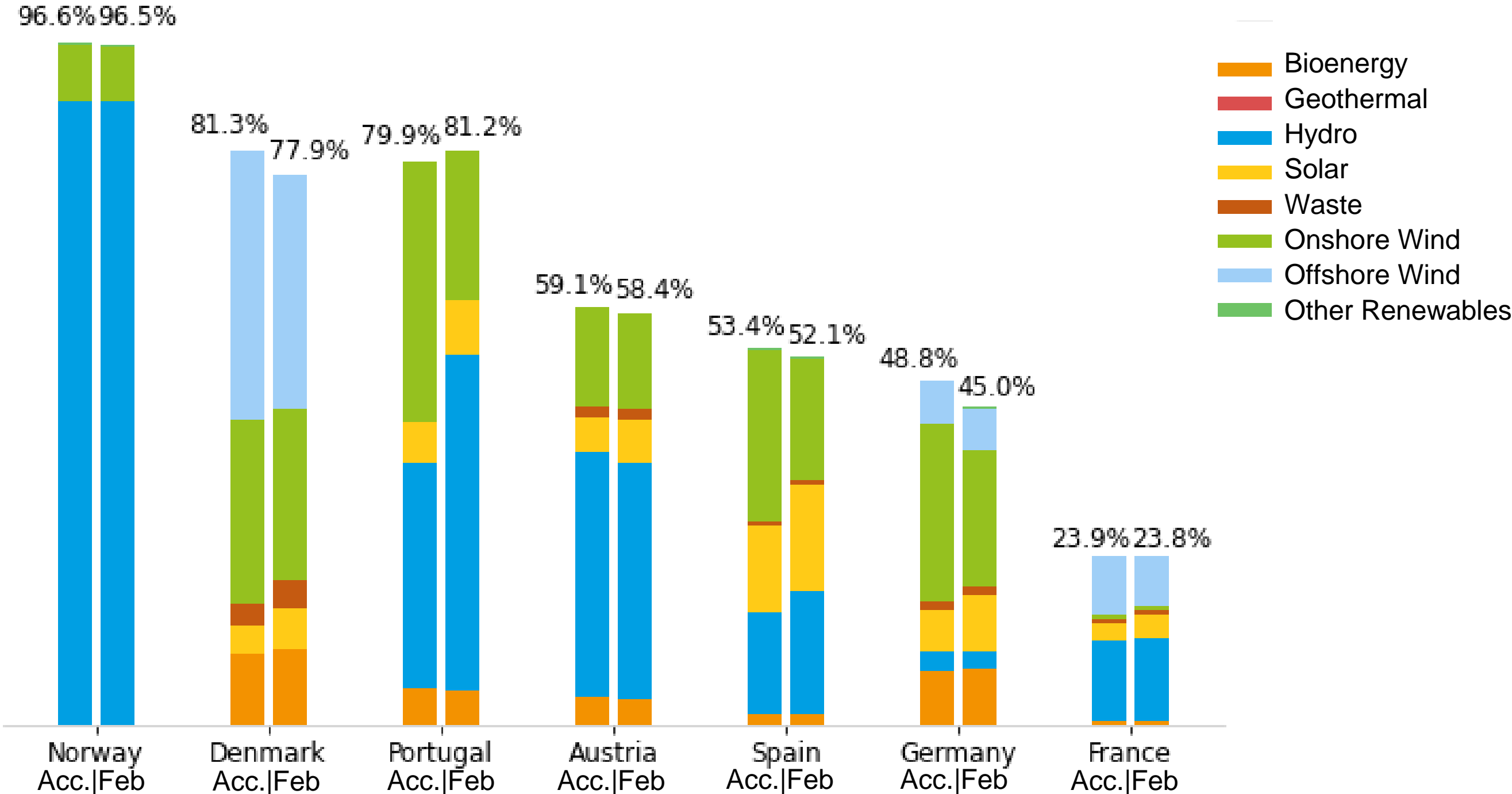
# RENEWABLE ELECTRICITY

## EUROPE

In this analysis, only the main countries in the different European markets were considered to obtain a representative panorama for comparison.

Between 1 January and 28 February 2025, Portugal was the country with the third highest share of renewable energy in electricity generation, with 79.9%, behind Norway and Denmark, which had 96.6% and 81.3%, respectively.

The renewable technology with the largest share of the European electricity generation mix this month was hydro, followed by onshore wind.



Renewable incorporation in cumulative (1 Jan - 28 Feb) and monthly (Feb) electricity generation.  
Source: REN, Fraunhofer, REE, Terna, National Grid, ENTSO-E, APREN Analysis.  
Note: given the unavailability of data for Italy, it was not possible to include it in the analysis.

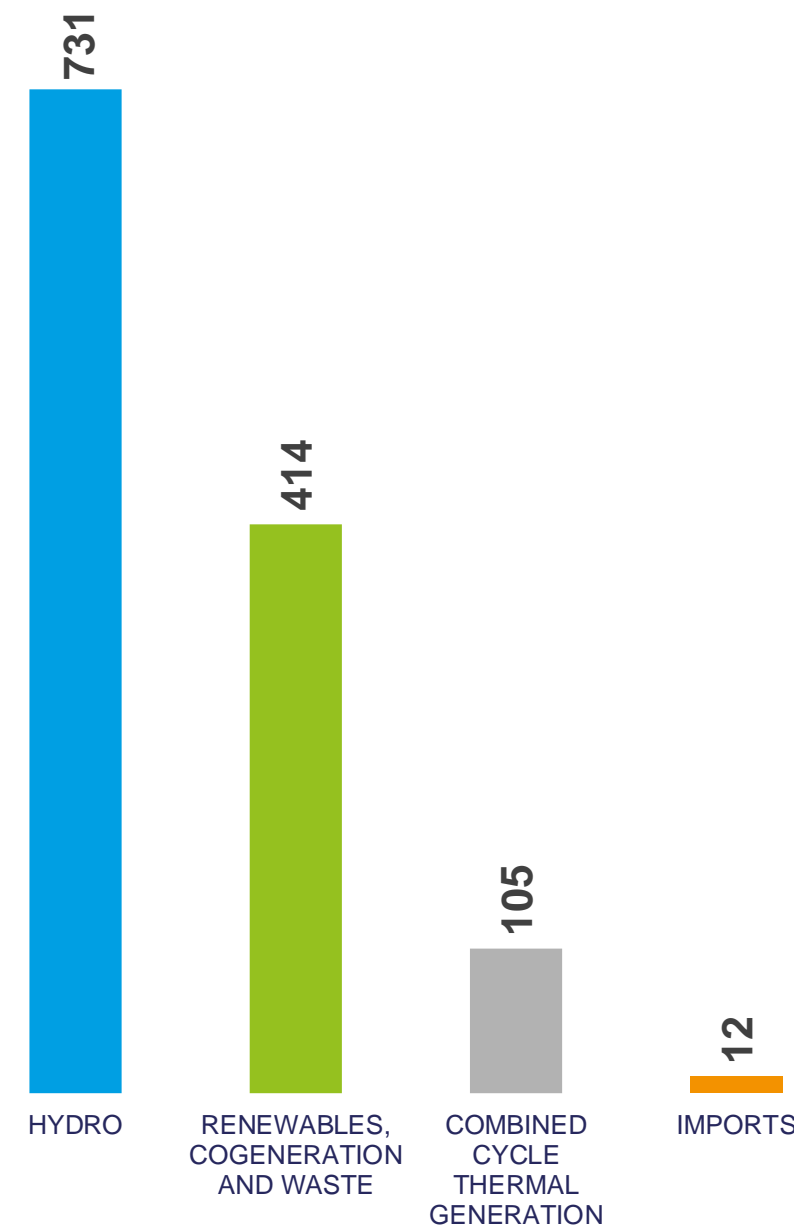


# MARKET PRICE SETTING PORTUGAL

From the 1<sup>st</sup> to the 28<sup>th</sup> of Febuary, the technology with the highest number of **market clearing** hours was hydro, with 731 non-consecutive hours, followed by Renewables, Cogeneration and Waste, with 414 hours, and Combined Cycle Thermal Generation, with 105 hours.

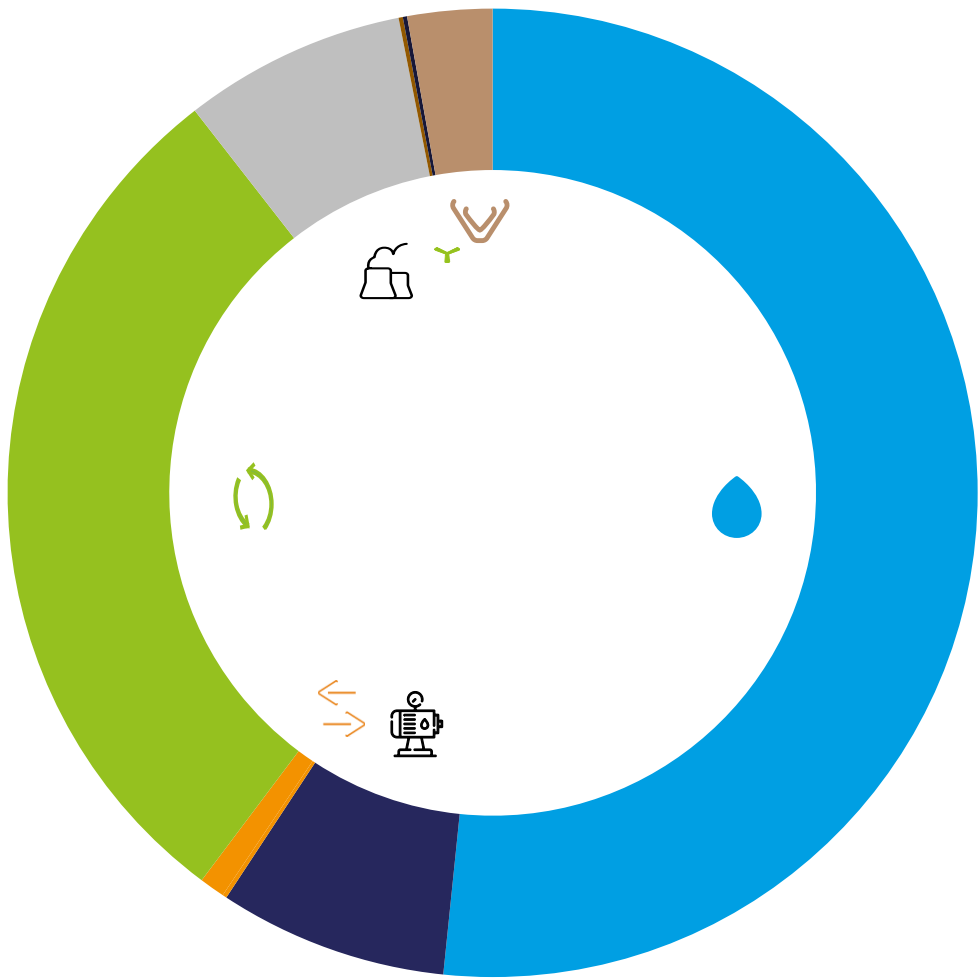


ACCUMULATED FEB 2025

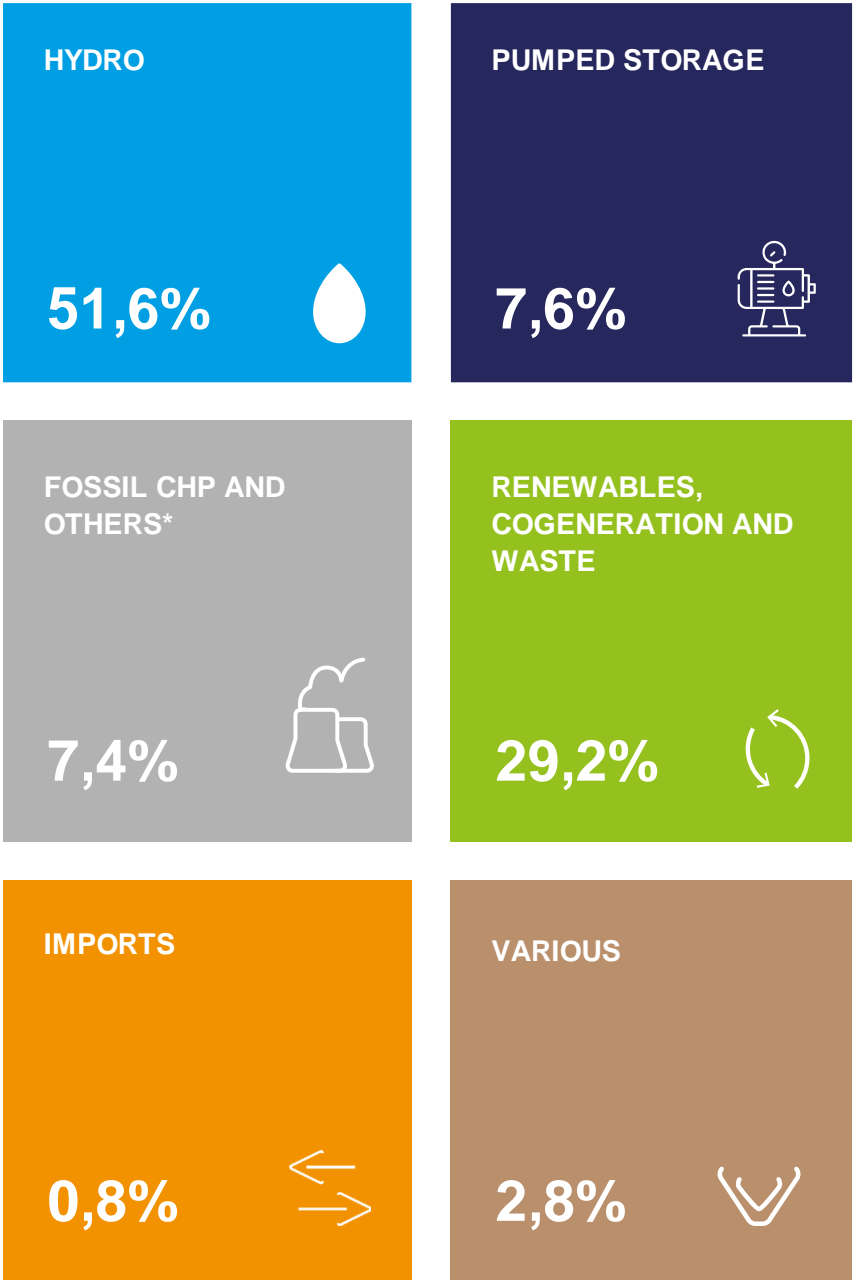


Number of market clearing hours (accumulated) for the three main closing technologies and imports (Feb).  
Source: OMIE, APREN Analysis

FEB 2025



Percentage distribution of the number of hours of market clearing for the various technologies, totalling 672 hours (Feb).  
Apart from the technologies represented, there were also 0,1% of International Imports, 0,1% of Nuclear and 0,1% of Conventional Thermal Generation.  
Source: OMIE, APREN Analysis





# ELECTRICITY MARKET

## PORTUGAL

Between 1 January and 28 February, the average hourly price recorded in MIBEL in Portugal (102.2 €/MWh<sup>d</sup>) represents an increase of 77.6% compared to the same period last year.

In the same period, there were 330 non-consecutive hours in which renewable generation was sufficient to supply mainland Portugal's electricity consumption, with an average hourly price in MIBEL of 92.1 €/MWh.

330  
Hours

100% RENEWABLE HOURS  
[Accumulated]

92.1  
€/MWh

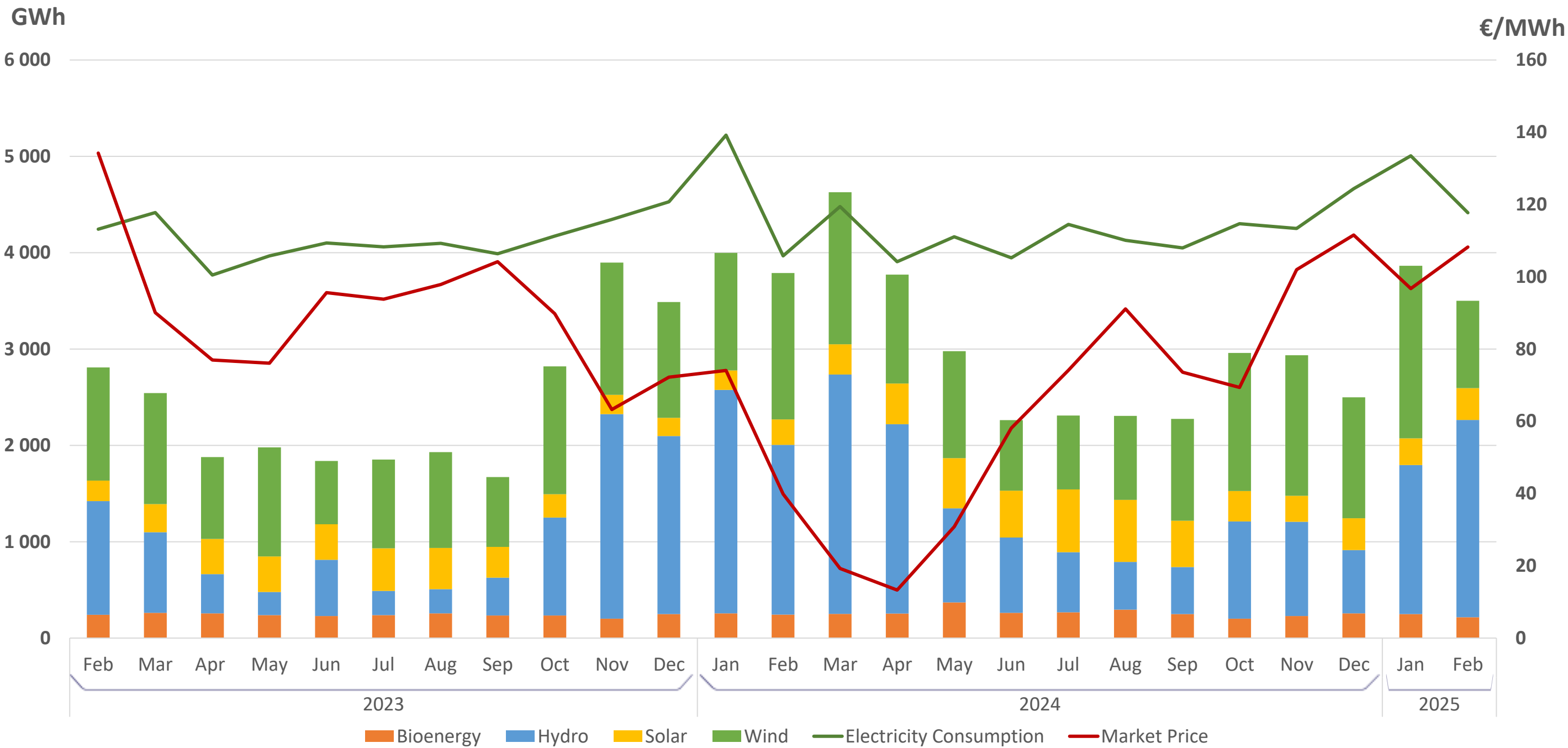
MIBEL'S AVERAGE PRICE (IN 100% RENEWABLE HOURS)  
[Accumulated]

139  
Horas

100% RENEWABLE HOURS  
[Feb]

117.1  
€/MWh

PREÇO MÉDIO MIBEL (EM HORAS 100% RENOVÁVEIS)  
[Feb]



<sup>d</sup> arithmetic average of MIBEL prices.  
Source: OMIE

Electricity market analysis, renewable generation, consumption and market price (Feb-2023 a Feb-2025)  
Source: OMIE, APREN analysis



# RENEWABLE ELECTRICITY

## EUROPE

During the month of February 2025, the **minimum hourly price in MIBEL** in Portugal equalled 3.52 €/MWh, when the market was cleared mostly by Renewables, Cogeneration and Waste.

On the other hand, the **maximum hourly price** reached up to 240.0 €/MWh, when the market was also cleared by Renewables, Cogeneration and Waste.

### MINIMUM PRICES (Feb)

1 <sup>o</sup>	Portugal Spain	€/MWh
		<b>3.52</b>
2 <sup>o</sup>	Denmark <sup>DK1</sup> Denmark <sup>DK2</sup>	€/MWh
		<b>3.93</b>
3 <sup>o</sup>	France	€/MWh
		<b>17.98</b>

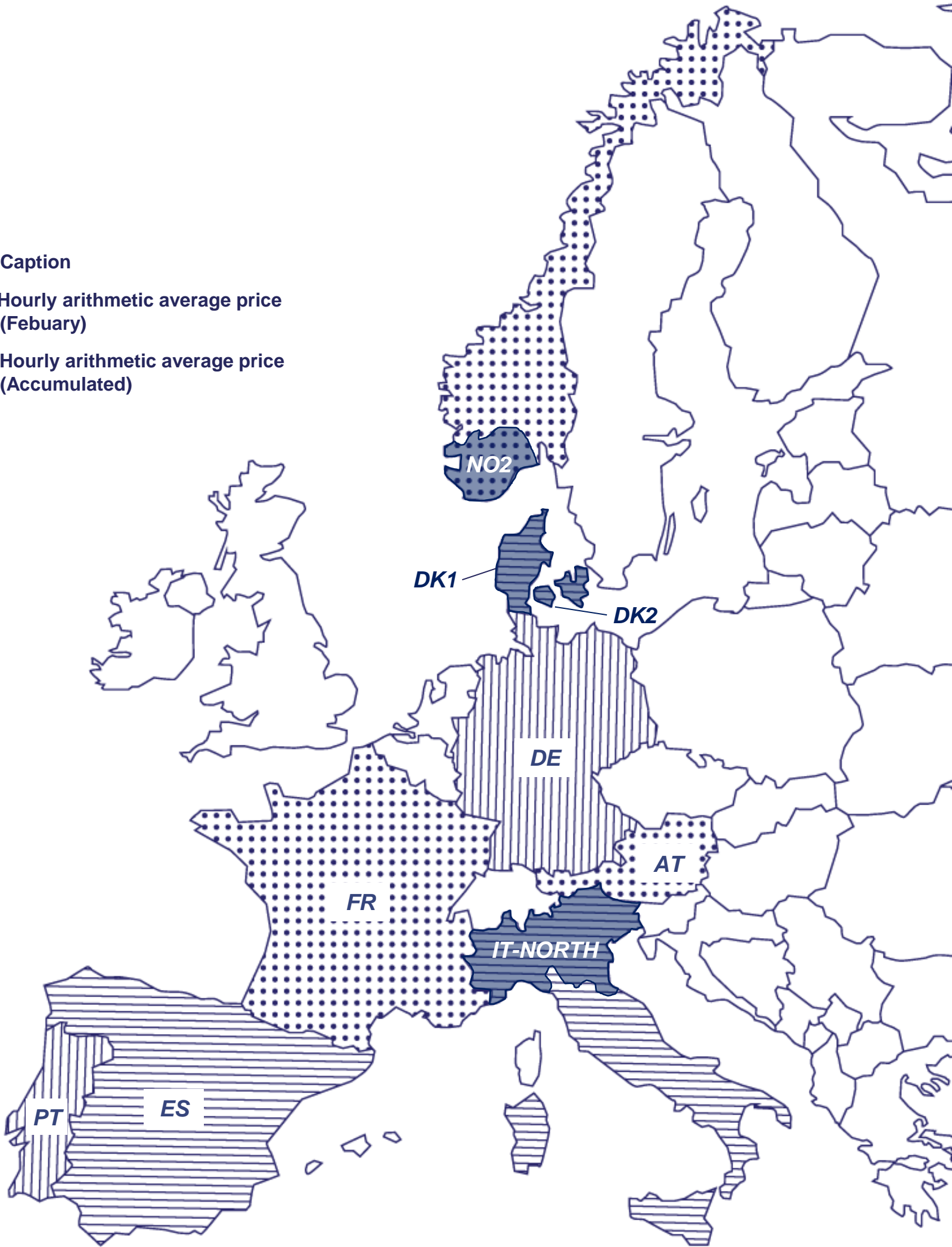
### MAXIMUM PRICES (Feb)

1 <sup>o</sup>	Denmark <sup>DK2</sup>	€/MWh
		<b>298.93</b>
2 <sup>o</sup>	Denmark <sup>DK1</sup> Germany	€/MWh
		<b>298.31</b>
3 <sup>o</sup>	Norway <sup>NO2</sup>	€/MWh
		<b>247.26</b>

Portugal €/MWh	108.2	102.2
Spain €/MWh	108.3	102.2
France €/MWh	123.6	112.0
Italy <sup>IT-NORD</sup> €/MWh	150.5	146.8
Germany €/MWh	128.5	121.1
Austria €/MWh	140.8	137.2
Denmark <sup>DK1</sup> €/MWh	112.8	105.1
Denmark <sup>DK2</sup> €/MWh	117.9	108.7
Norway <sup>NO2</sup> €/MWh	92.9	77.1

Caption

- Hourly arithmetic average price (February)
- Hourly arithmetic average price (Accumulated)



Source: ENTSO-E, OMIE, APREN Analysis  
Note: given recent changes in the data reporting format by the ENTSO-E platform, the price values presented correspond to the bidding zones, when applicable. As such, in the case of Italy, Denmark and Norway only the bidding zones with interconnection with neighbouring countries were considered.

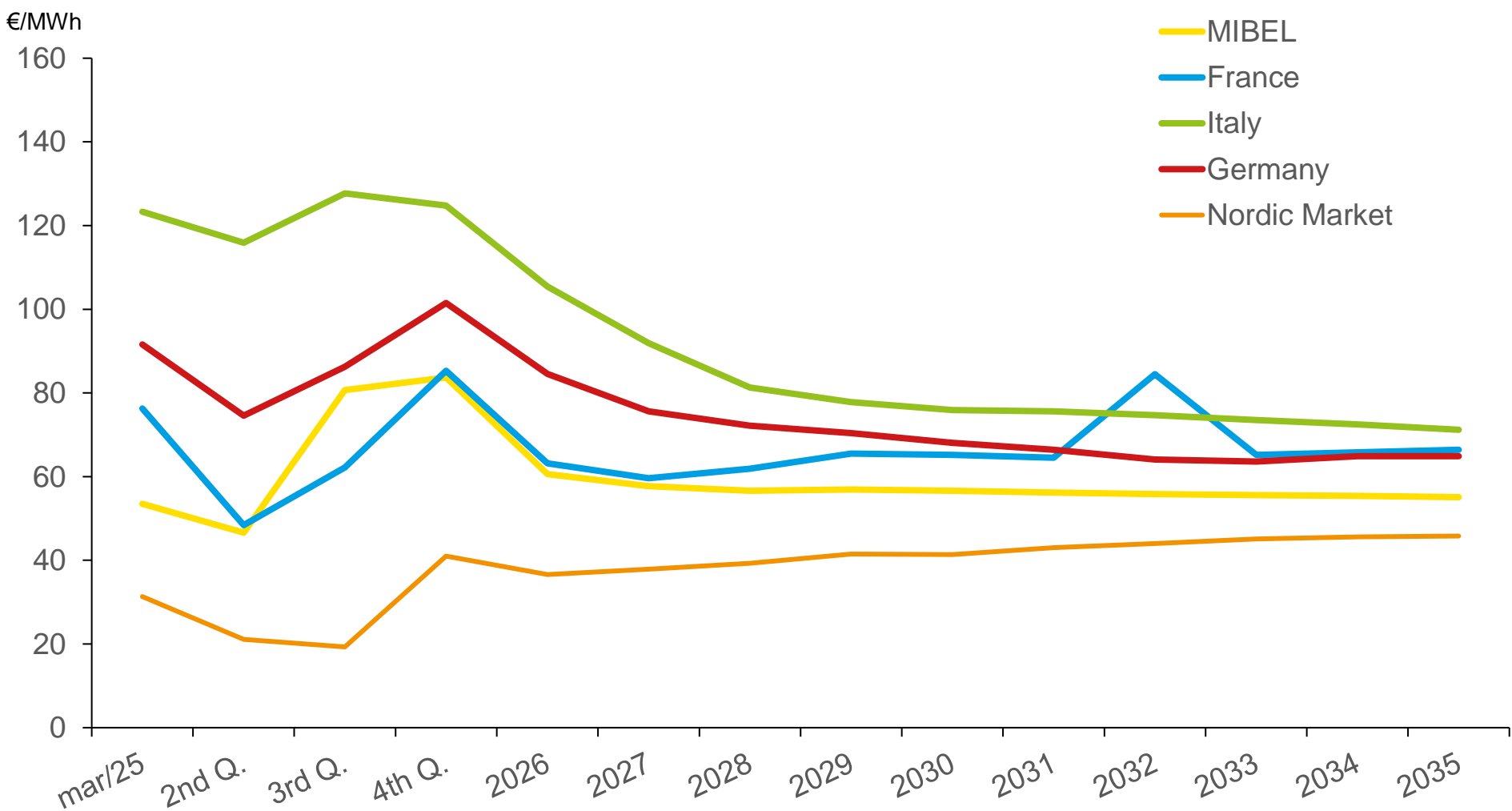


# ELECTRICITY MARKET FUTURES

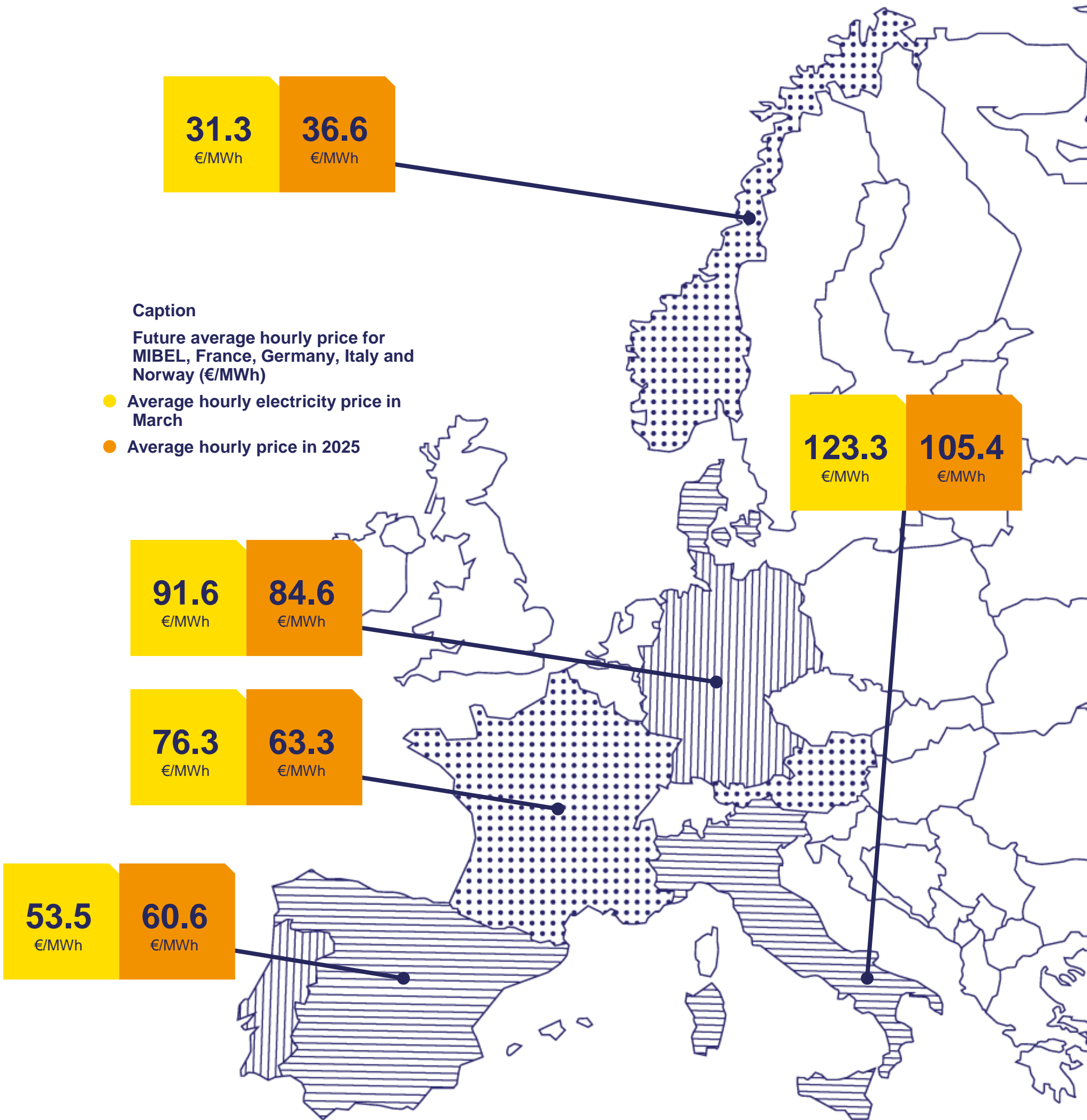
In the European futures market, the average hourly price values for next month (March) and next year, according to the records for a specific day, are an example. At the time of collection, in March 2025, MIBEL will be the second lowest electricity futures market.

From a long-term perspective, and according to the data for the specific day shown, MIBEL will have the second lowest values until 2035, due to investment in renewable production. The evolution of the average hourly future price shown is calculated based on electricity purchase and sale contracts.

However, it should be emphasised that the respective volumes traded represent very low quantities when compared to the countries' consumption.



<sup>e</sup> values updated as of 6th of March.  
Source: OMIP, EEX, APREN Analysis



**Caption**  
Future average hourly price for MIBEL, France, Germany, Italy and Norway (€/MWh)

- Average hourly electricity price in March
- Average hourly price in 2025



# INTERNATIONAL TRADES

## EUROPE

Between 1 January and 28 February 2025, mainland Portugal's electricity system recorded **electricity imports equivalent to 1,822 GWh and exports of 904 GWh**.

Up until this month, Portugal was characterised as an **electricity importer**, with a balance of **918 GWh**.

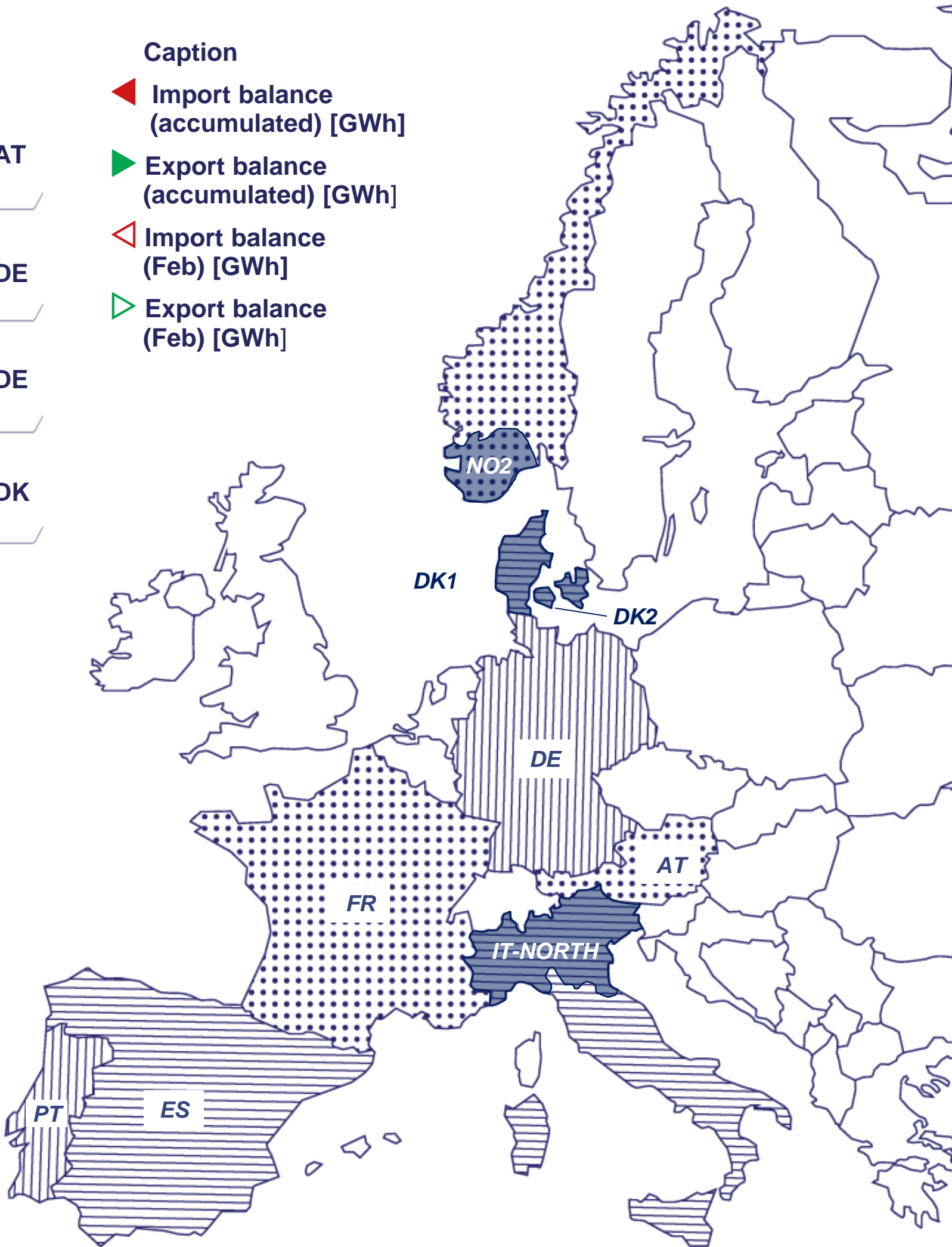
PT	918	388	ES	DE	2,025	975	AT
ES	238	148	MA	DK	1,770	1,054	DE
FR	923	385	ES	NO	1,458	807	DE
IT	4,089	1,941	FR	NO	1,452	783	DK
DE	2,731	1,104	FR				

Caption

- Import balance (accumulated) [GWh]
- Export balance (accumulated) [GWh]
- Import balance (Feb) [GWh]
- Export balance (Feb) [GWh]

### MAIN INDICATOR FOR PT-ES INTERCONNECTION

usage	14.5% (Feb)	19.5% (Jan–Feb)	PT-ES	20.0% (Feb)	31.6% (Jan–Feb)	ES-PT
congestion	0.9% (Feb)	2.5% (Jan–Feb)	PT-ES	0.0% (Feb)	2.1% (Jan–Feb)	ES-PT
market split	1.0% (Feb)	3.5% (Jan–Feb)	PT-ES	57.4% (Feb)	79.2% (Jan–Feb)	MIBEL-FR



Source: ENTSO-E, OMIE, APREN Analysis  
Note: given recent changes in the data reporting format by the ENTSO-E platform, the price values presented correspond to the bidding zones, when applicable. As such, in the case of Italy, Denmark and Norway only the bidding zones with interconnection with neighbouring countries were considered.



# POWER PRODUCTION EMISSIONS

From the 1<sup>st</sup> of January to the 28<sup>th</sup> of February, the **specific emissions** reached up to 50.5 gCO<sub>2</sub>eq/kWh, corresponding to a total of emissions from the electricity generation sector of around 0.46 MtCO<sub>2</sub>eq.

The **European Carbon Emission Trading Scheme** (ETS) registered a price of 77.8 €/tCO<sub>2</sub><sup>d</sup>, which means a reduction of 25.4% comparing to the same period of 2024.

0.46  
MtCO<sub>2</sub>eq

SECTOR'S EMISSIONS

75.8  
€/tCO<sub>2</sub>

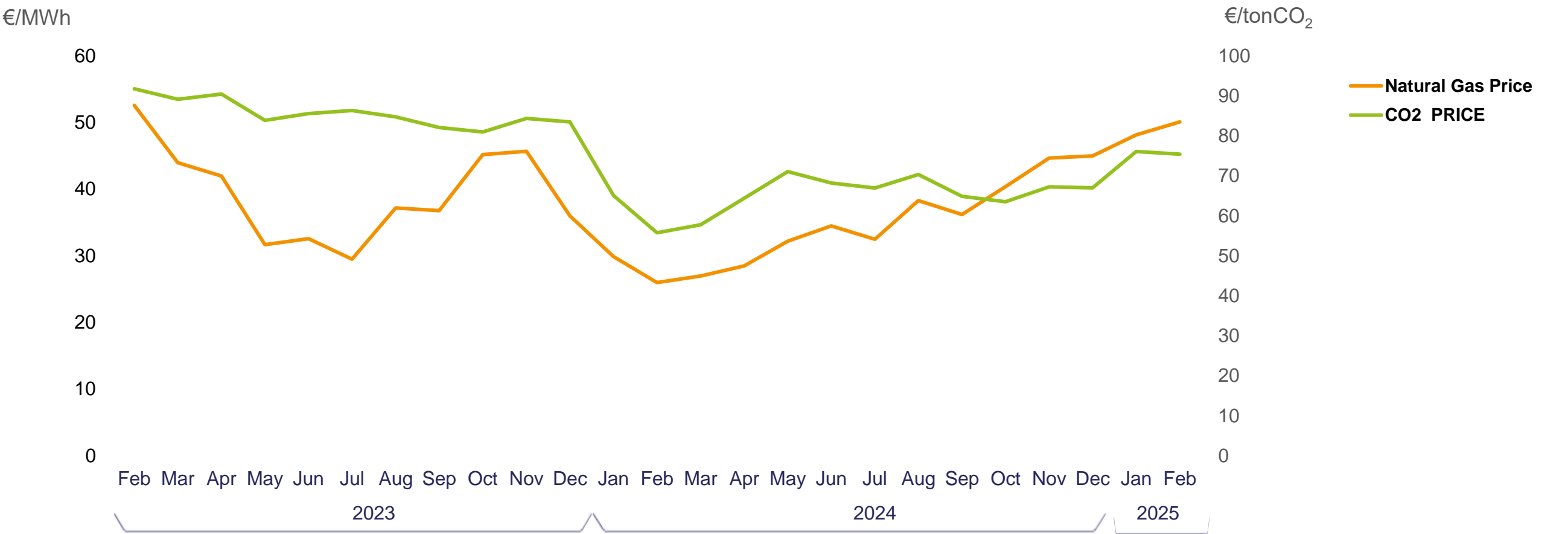
AVERAGE ALLOWANCE PRICE

35.3  
%

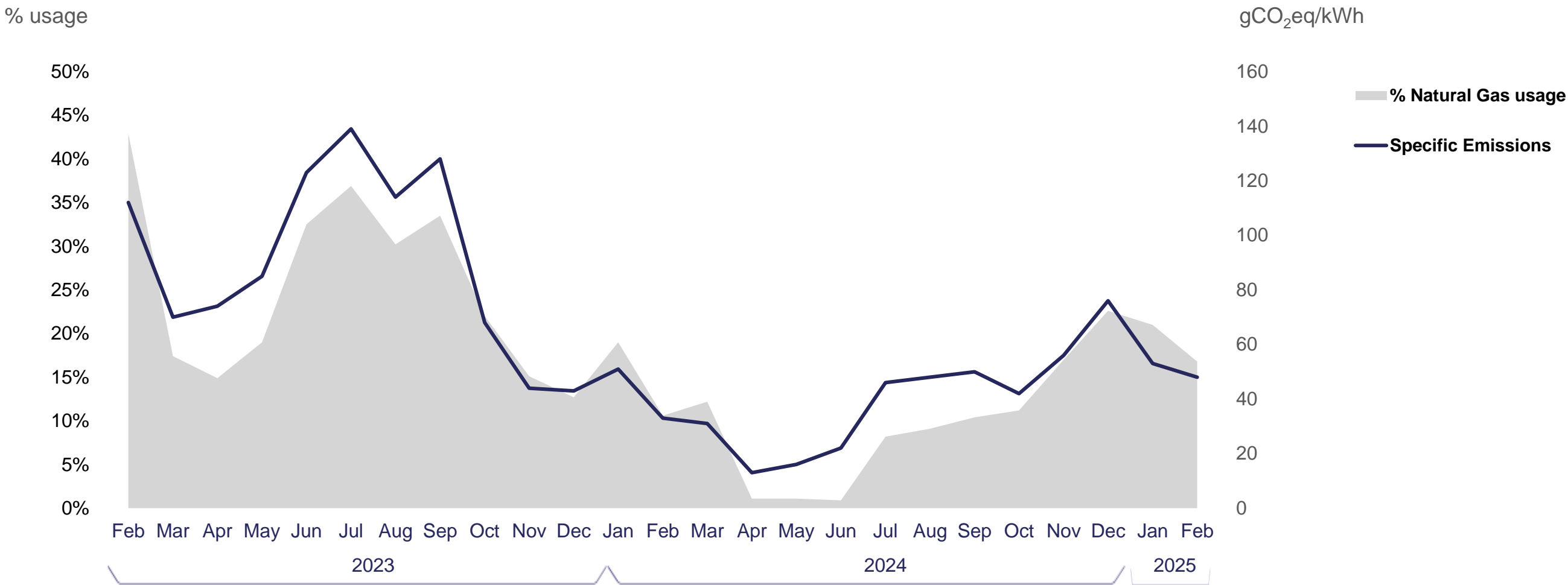
COMPARED TO FEB 2024  
[Accumulated]

25.4  
%

COMPARED TO FEB 2024  
[Accumulated]



Price of CO<sub>2</sub> allowances in the EU ETS and price of natural gas in Europe (Feb-2022 to Feb-2024).  
Source: SendeCO2, WorldBank, REN



Specific emissions from the electricity sector in mainland Portugal, % use of coal and natural gas power stations (Feb-2023 to Feb-2025).  
Source: REN, DGEG, ERSE, APREN Analysis

<sup>D</sup> Arithmetic mean of the hourly prices  
Source: OMIE, MIBGAS.

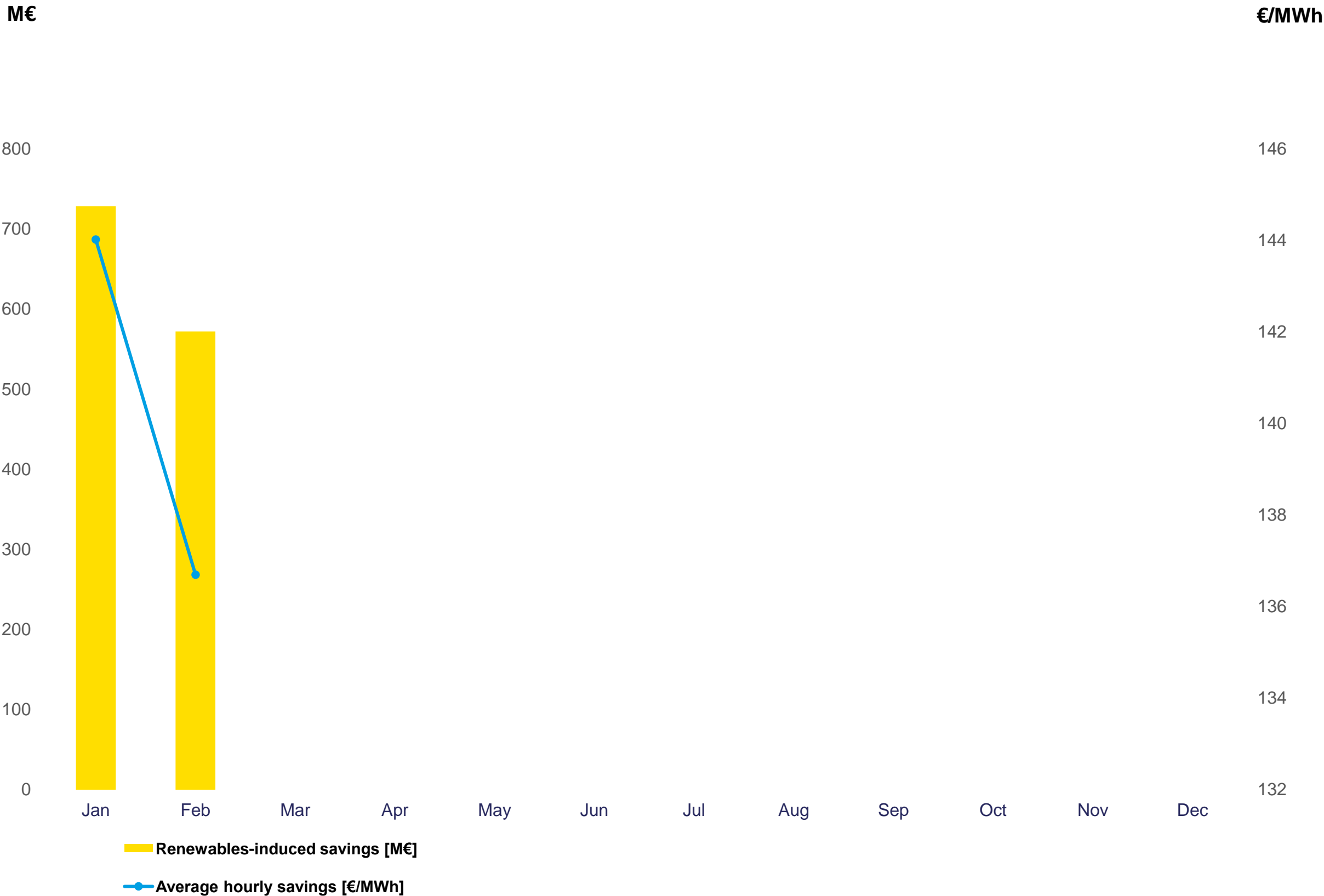
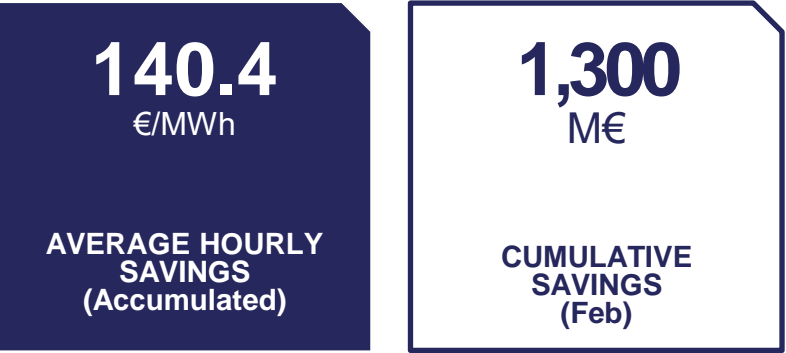


# SIMULATION OF PRICE FORMATION WITHOUT SPECIAL REGIME PRODUCTION (PRE)

## RENEWABLES HAVE AVOIDED:

The indicators below identify the savings achieved by the **Order of Merit** between the 1<sup>st</sup> of January and the 28<sup>th</sup> of February of 2025 given the contribution of special regime production (PRE).

This study is carried out for PRE, which includes all installed fossil cogeneration power. Considering that the capacity equivalent to this technology within PRE is residual and that the other technologies are renewable, the figures are close to the real savings generated by renewables.



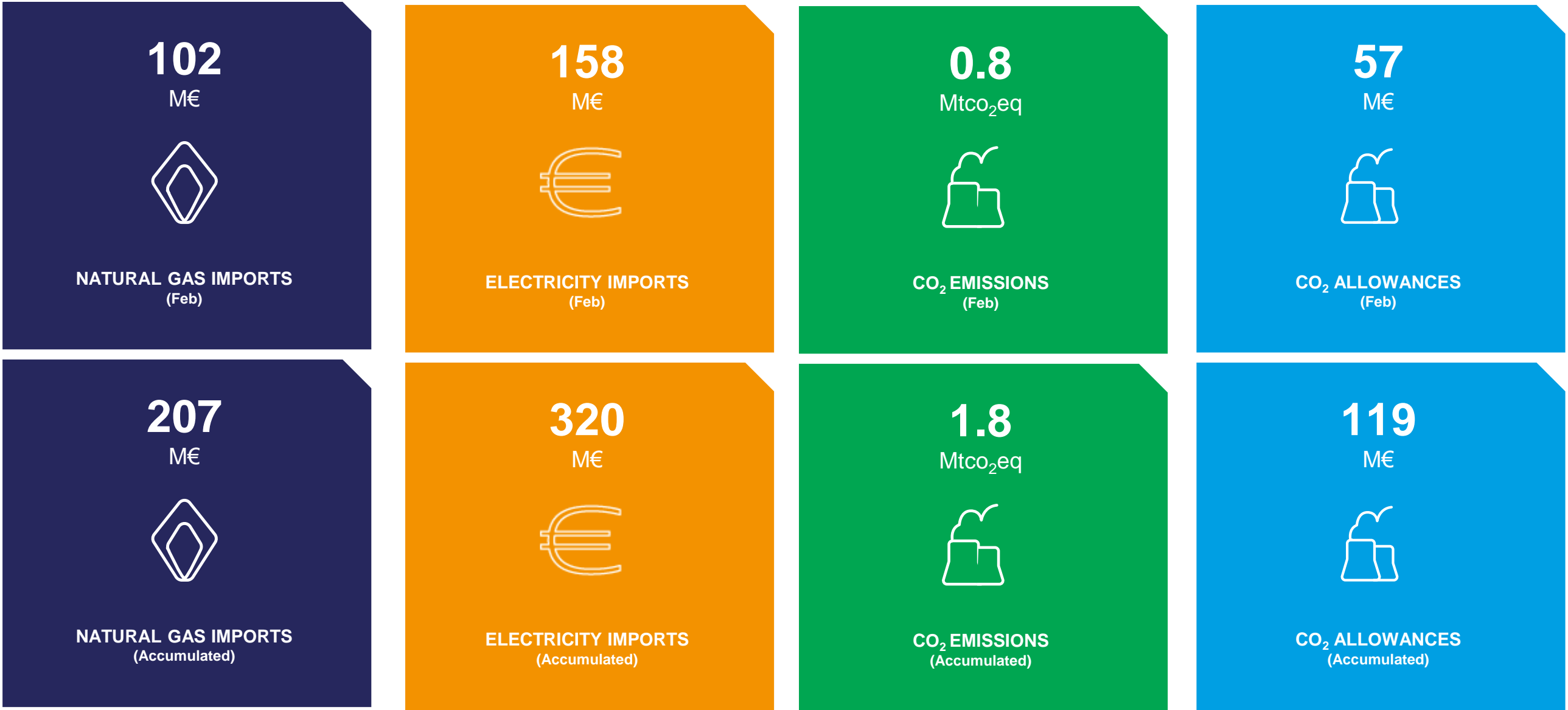


# ENVIRONMENTAL SERVICE

## RENEWABLES AVOIDED:

The indicators below identify the **savings** achieved between the 1<sup>st</sup> of January and the 28<sup>th</sup> of February of 2025 in natural gas, CO<sub>2</sub> emissions and CO<sub>2</sub> emission allowances, because of incorporating renewables into electricity generation.

This analysis assumes that, in the absence of renewables, production would be ensured primarily by natural gas, followed by electricity imports.





# RENEWABLE INSTALLED CAPACITY

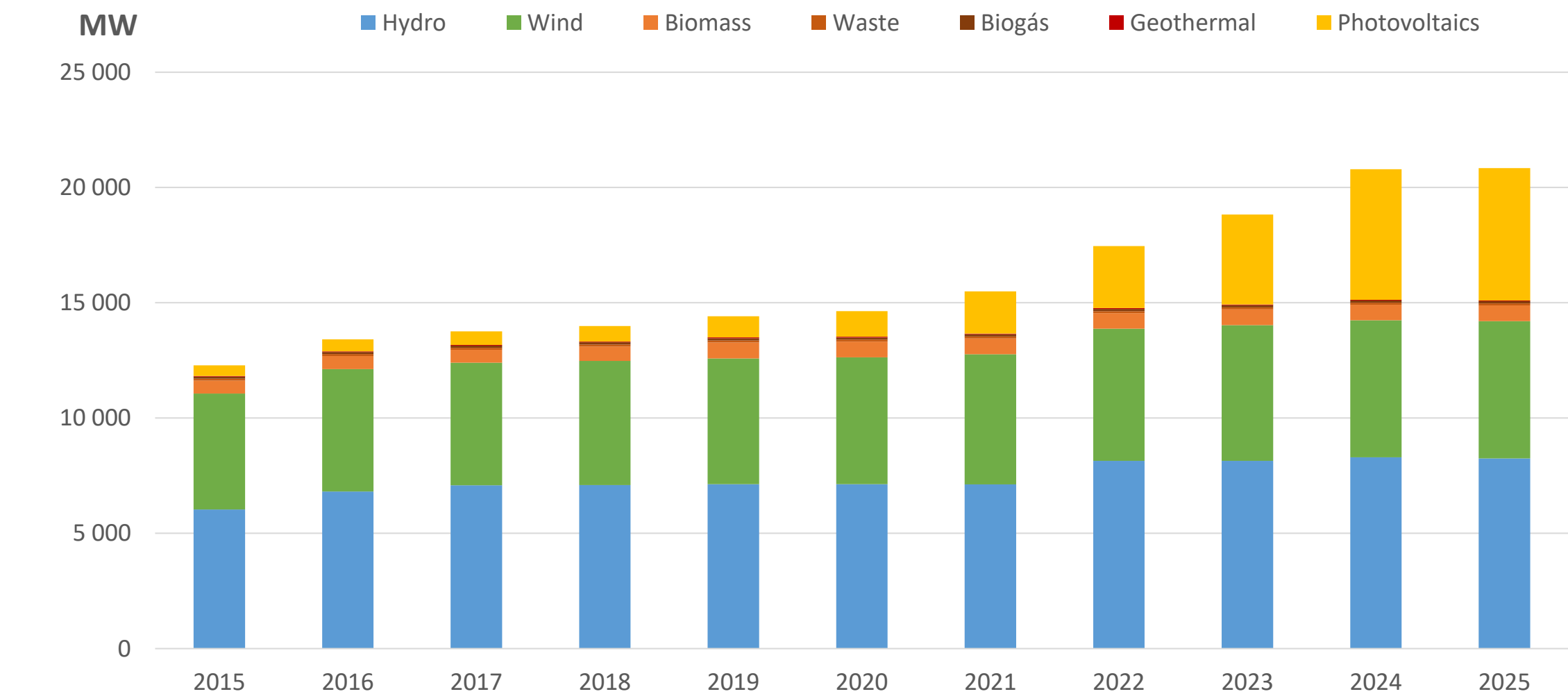
## PORTUGAL

From January 2015 to January 2025, installed renewable capacity increased by 8,560 MW, representing growth of 69.6 per cent.

From December 2024 to January 2025, installed capacity increased by 66 MW, especially solar photovoltaic technology, which grew by 17 MW in the centralised component and 57 MW in the decentralised component. However, the withdrawal of 7 MW of installed hydroelectric capacity compared to December 2024 is regrettable.

At the end of January 2025, renewable capacity accounted for around 78% of total installed capacity in Portugal.

### JANUARY 2025



Source: DGEG, APREN Analysis  
Nota: information available at the source with one month of delay to the month under analysis.



20  
25

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