# 2025

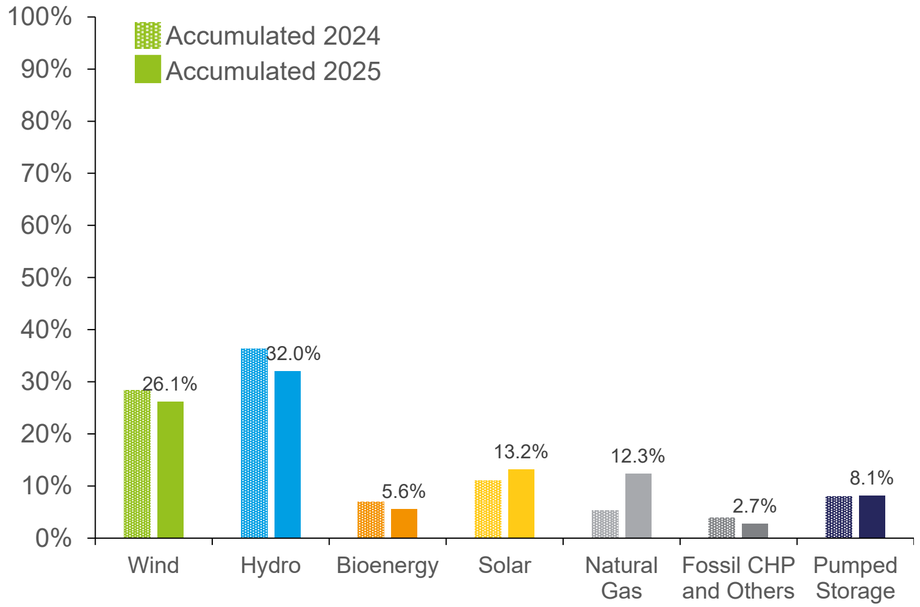
# RENEWABLE ELECTRICITY BULLETIN

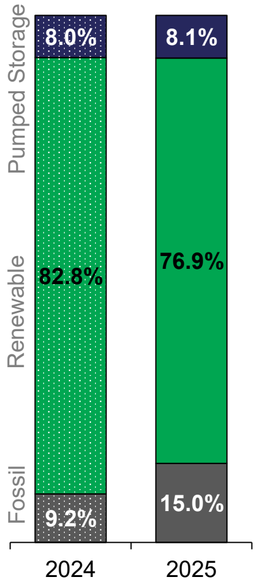
AUGUST
2025

PORTUGAL NEEDS
OUR ENERGY

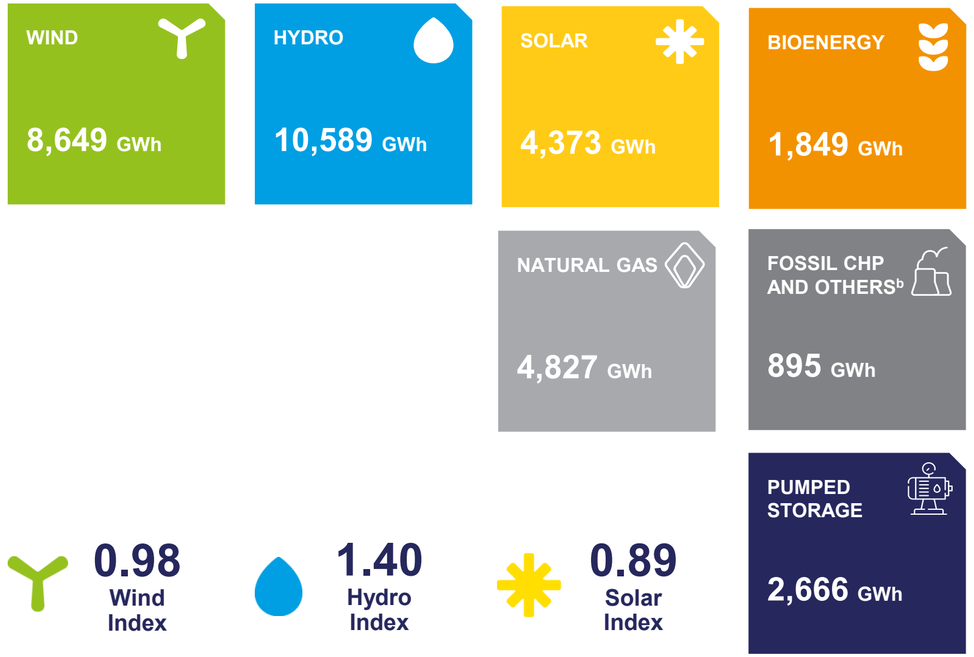
APREN Associação de Energias Renováveis

# EXECUTIVE SUMMARY
## CUMULATIVE GENERATION AUGUST 2025




## MAIN INDICATORS




## COMPARING TO THE SAME PERIOD IN 2024

| GWh | % | GWh | GWh | €/MWh | €/tCO$_2$ | MtCO$_2$-eq | gCO$_2$-eq/kWh |
|---|---|---|---|---|---|---|---|
| △ 5.0% | ▽ 5.9 p.p. | △ 2,6% | ▽ 9.2% | | | | |
| **33,107** | **76.9** | **34,953** | **5,199** | **64.3** | **71.0** | **1.81** | **50.5** |
| Generation[a] | Renewable Incorporation in Generation | Consumption[c] | Net Imports | MIBEL PT Price | $CO_2$ Price | $CO_2$ Emissions | $CO_2$ Specific Emissions |

a 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.
b Includes fuel oil, diesel, the non-biodegradable fraction of MSW and new waste.
c 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

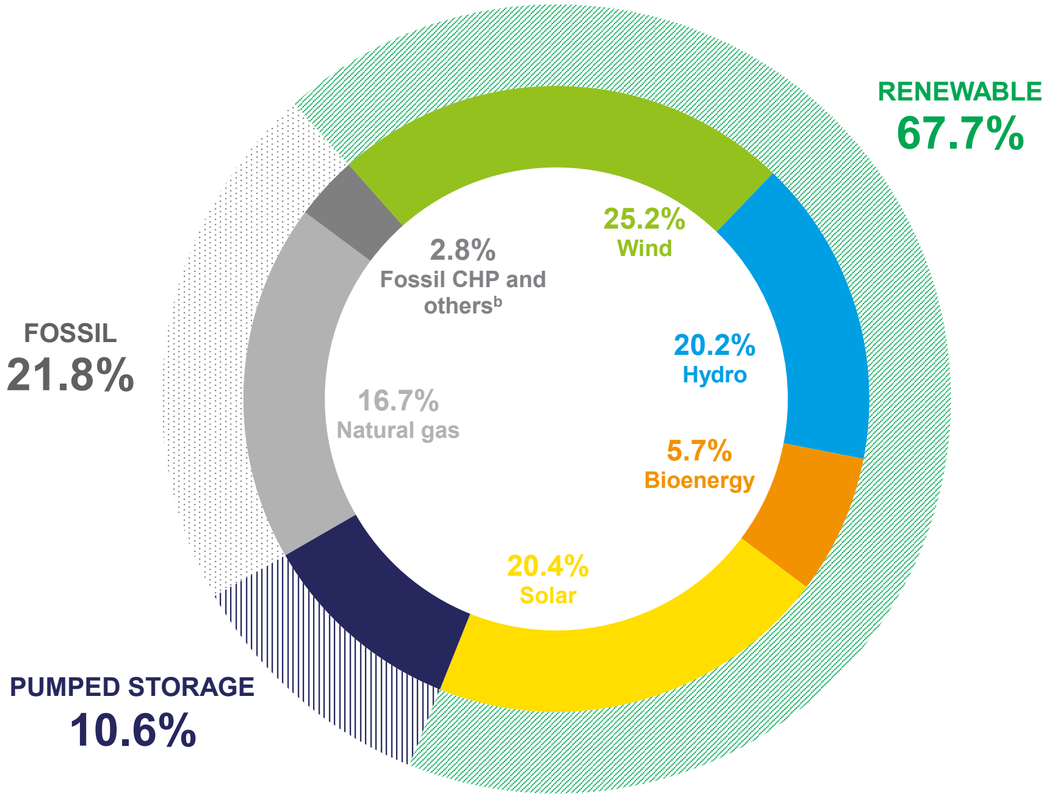
## AUGUST 2025

Between 1 and 31 of August 2025, the **renewable incorporation** equaled 67.7%, making up 2,351 GWh of the 3,475 GWh produced in the month under review.

Compared to August 2024, there was a 16.4% increase in national electricity production. This was due to an increment of 82 GWh from solar production and 397 GWh from natural gas generation.

In August 2025, **imports** totaled 29.3 % of the electricity consumption in mainland Portugal.

There was also curtailment of production in two consecutive hours, for 160 MW of solar.




## MAIN INDICATORS COMPARING TO AUGUST 2024

| GWh | GWh | % |
|---|---|---|
| **3,475** | **4,243** | **67.7** |
| Generation[a] | Consumption[c] | Renewable incorporation |
| △ 16.4% | ▽ 2.7% | ▽ 9.6 p.p. |

WIND INDEX **0.93**

HYDRO INDEX **1.53**

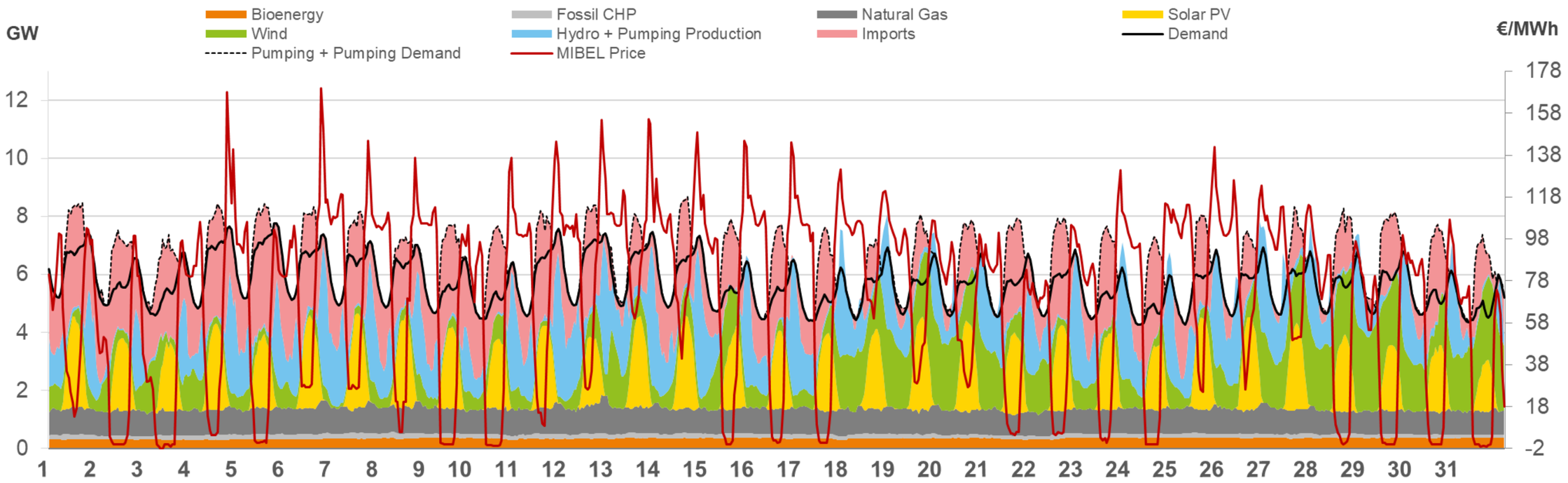
STORAGE IN DAMS **72.1%**

SOLAR INDEX **0.90**

a 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.
b Includes fuel oil, diesel, the non-biodegradable fraction of MSW and new waste.
c 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

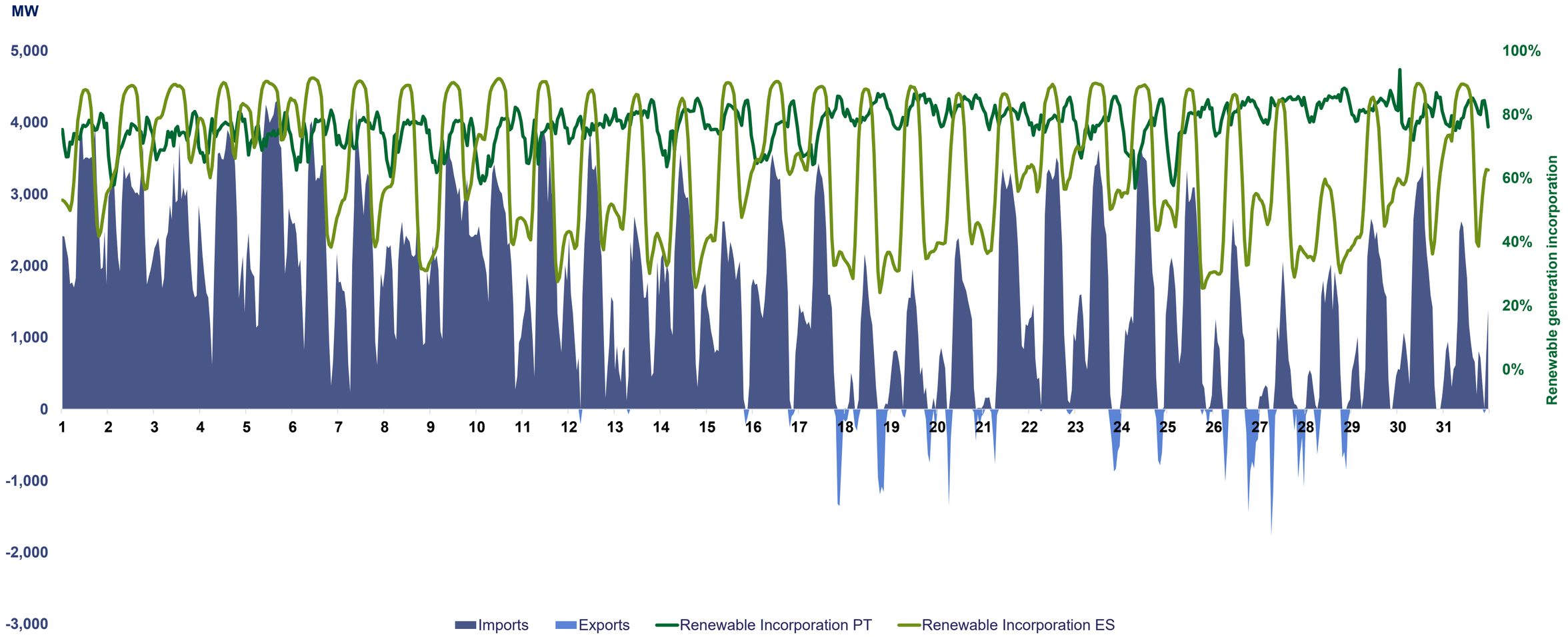
## LOAD DIAGRAM FOR AUGUST 2025




**Source:** REN, OMIE, APREN Analysis

# MONTHLY ANALYSIS IN MAINLAND PORTUGAL

## IMPORTS AND EXPORTS DIAGRAM




**Source:** REN, APREN Analysis

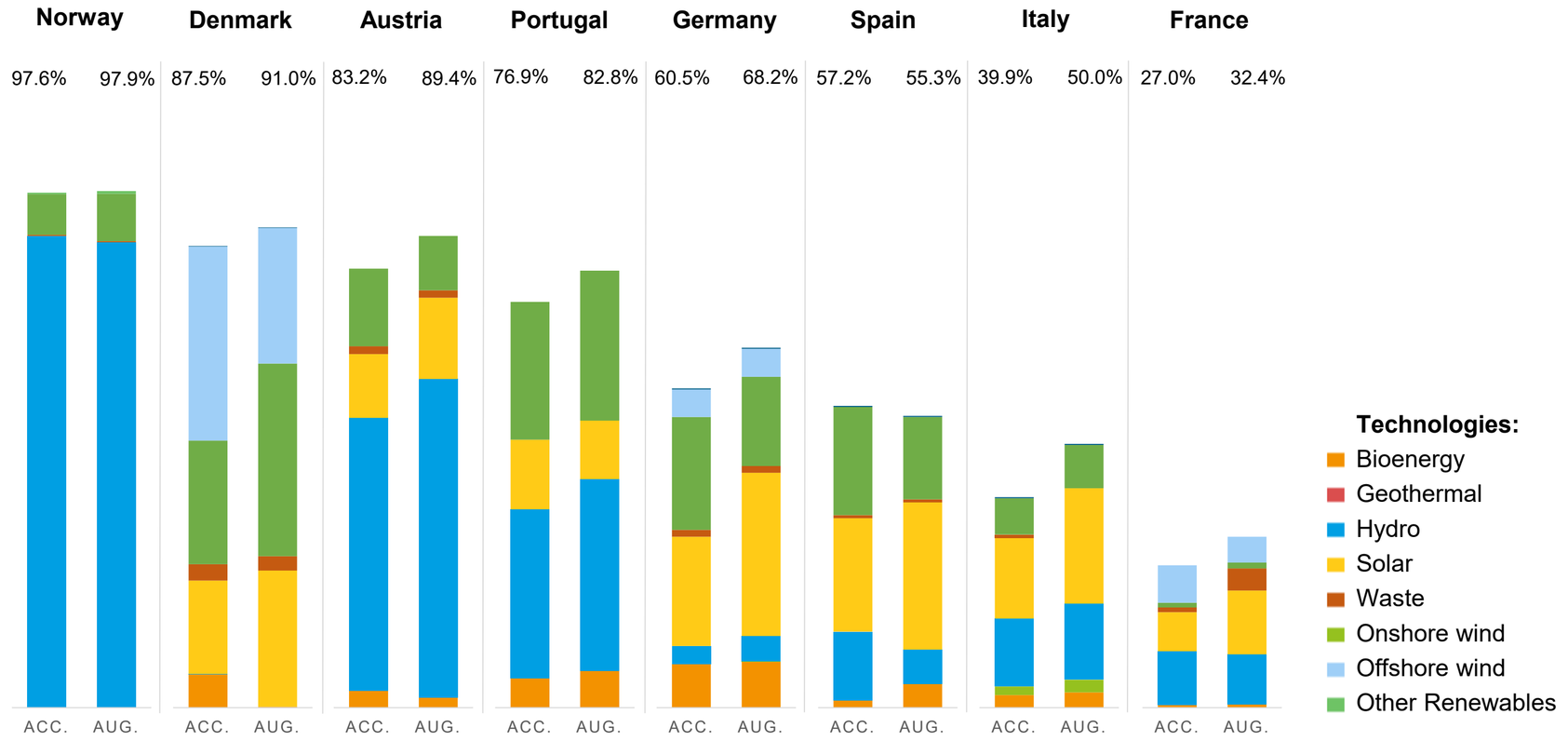
**Note:** The absence of imports from Spain during the first days of Jul is due to the stabilization process of the National Electricity System following the blackout event on 28 April (also visible in the Load diagram presented earlier).

# RENEWABLE ELECTRICITY
## EUROPE

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

Between 1 January and 31 August 2025, Portugal was the fourth country with the highest **share of renewable energy in electricity generation**, with 76.9%, behind Norway, Denmark and Austria, which achieved 97.6%, 87.5% and 83.2%, respectively.

The renewable technologies with the largest share of the European electricity generation mix this month were wind, solar and hydro.




Renewable incorporation in cumulative (1 Jan - 31 Aug) and monthly (Aug) electricity generation.
**Source:** REN, Fraunhofer, REE, Terna, National Grid, ENTSO-E, APREN Analysis.

# ELECTRICITY MARKET
## PORTUGAL

Between January 1 and August 31, the average hourly price recorded on **MIBEL in Portugal** (64.31 €/MWh[d]) represents an increase of 27.9% compared to the same period last year.

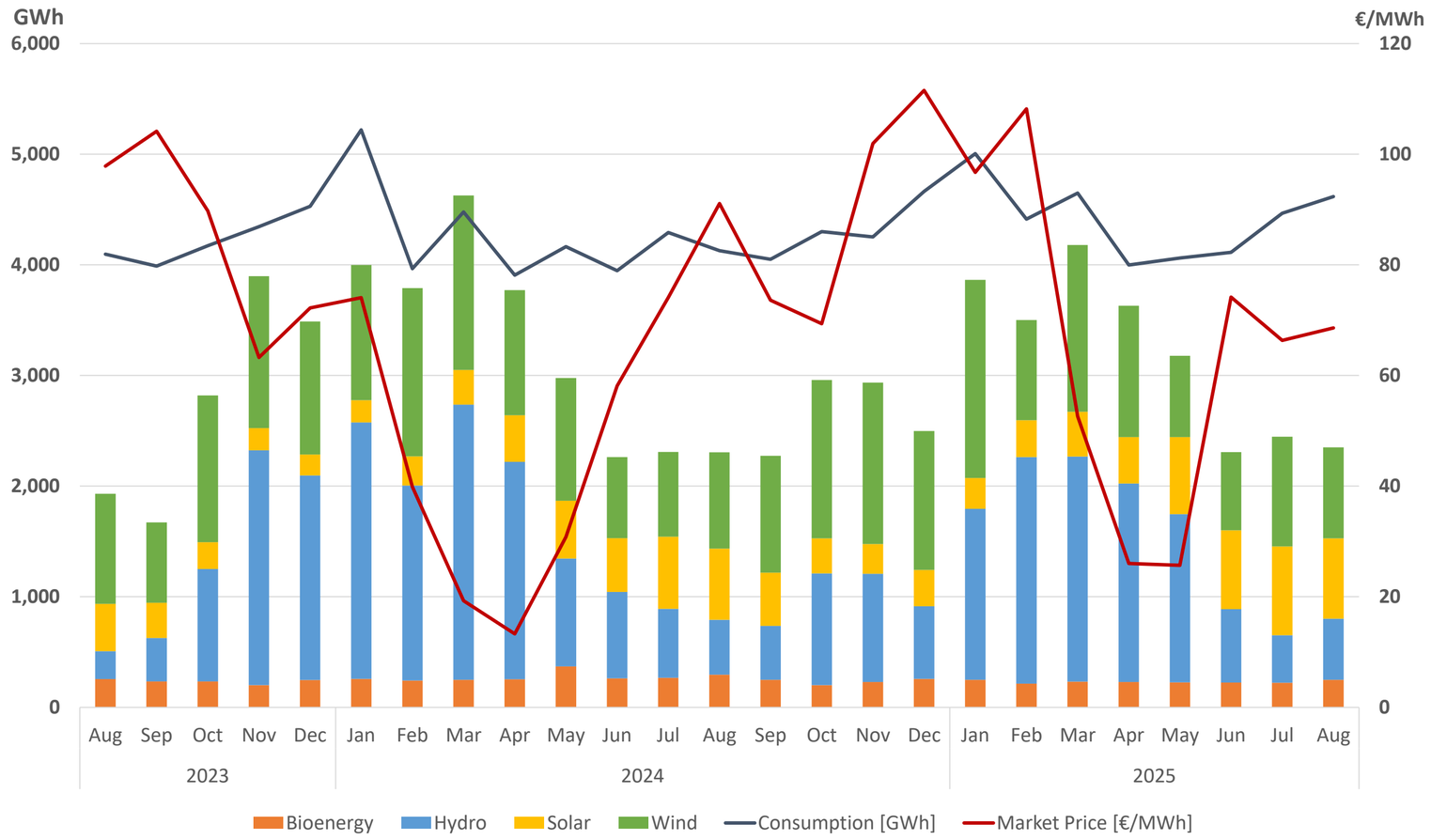
In the same period, there were 1,230 non-consecutive hours in which renewable generation was sufficient to supply mainland Portugal's electricity consumption, with an average hourly price in MIBEL of 65.9 €/MWh.

**1,230**
Hours
**100% RENEWABLE HOURS [Accumulated]**

**65.9**
€/MWh
**MIBEL'S AVERAGE PRICE (IN 100% RENEWABLE HOURS) [Accumulated]**

**19**
Hours
**100% RENEWABLE HOURS [Jul]**

**76.7**
€/MWh
**PREÇO MÉDIO MIBEL (EM HORAS 100%RENOVÁVEIS) [Aug]**




[d] arithmetic average of MIBEL prices.
**Source:** OMIE

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

# RENEWABLE ELECTRICITY
## EUROPE

During the month of August 2025, there was **a minimum hourly price in MIBEL** in Portugal of -2.10 €/MWh*.

**The maximum hourly price** was 170.0 €/MWh*.

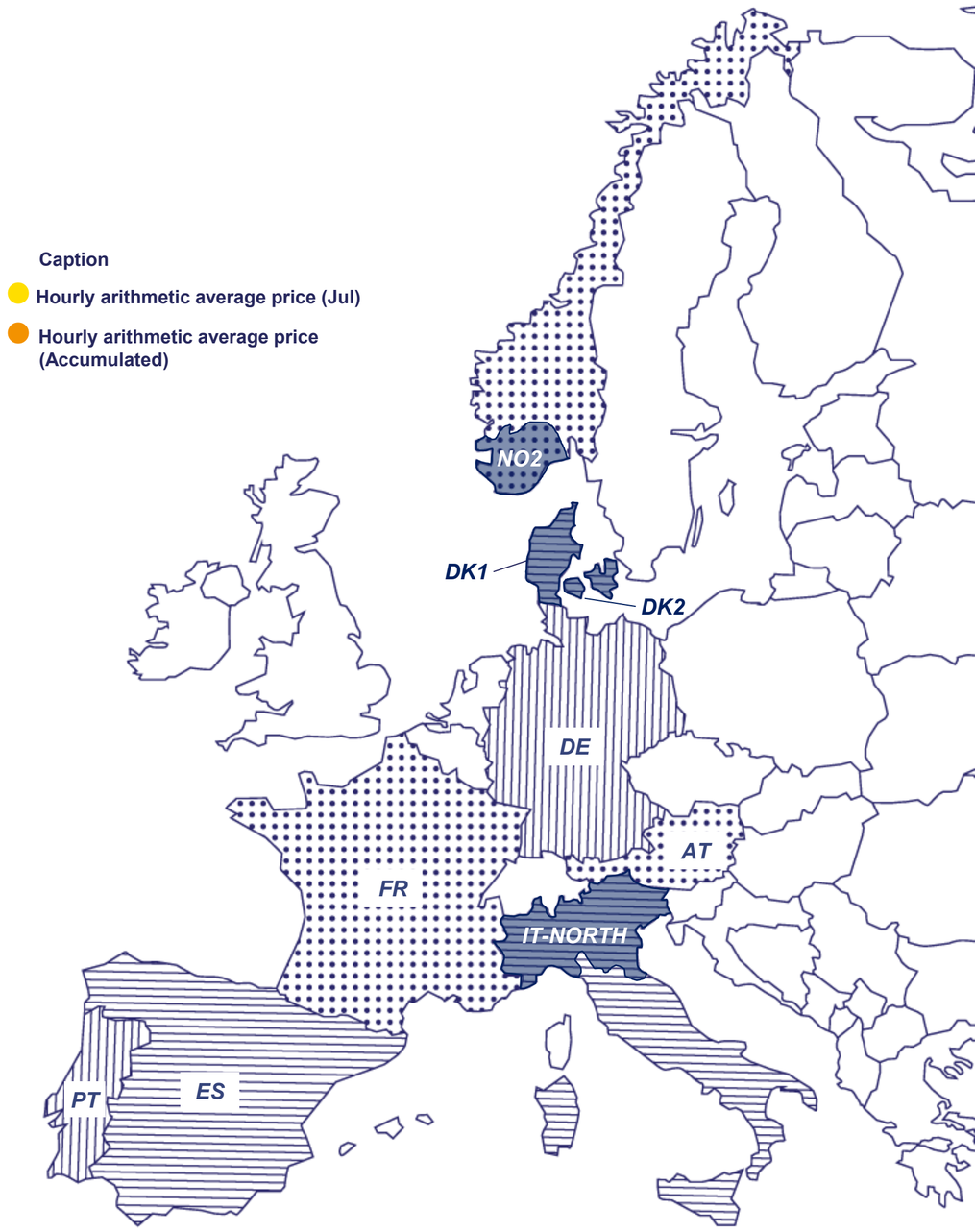
### ▽ MINIMUM PRICES (AUG)

| | | |
|---|---|---|
| 1º | Germany | €/MWh -61.08 |
| 2º | Denmark$^{DK2}$ | €/MWh -17.13 |
| 3º | Norway | €/MWh -1.01 |

### △ MAXIMUM PRICES (AUG)

| | | |
|---|---|---|
| 1º | Denmark$^{DK2}$ | €/MWh 284.05 |
| 2º | Germany | €/MWh 283.89 |
| 3º | Norway | €/MWh 190.85 |

| | | |
|---|---|---|
| Portugal €/MWh | 68.63 | 64.31 |
| Spain €/MWh | 68.36 | 63.63 |
| France €/MWh | 20.20 | 64.01 |
| Italy$^{IT-NORD}$ €/MWh | 82.15 | 117.46 |
| Germany €/MWh | 76.96 | 88.60 |
| Austria €/MWh | 55.76 | 94.04 |
| Denmark$^{DK1}$ €/MWh | 55.52 | 80.93 |
| Denmark$^{DK2}$ €/MWh | 75.29 | 81.12 |
| Norway$^{NO2}$ €/MWh | 71.06 | 66.51 |



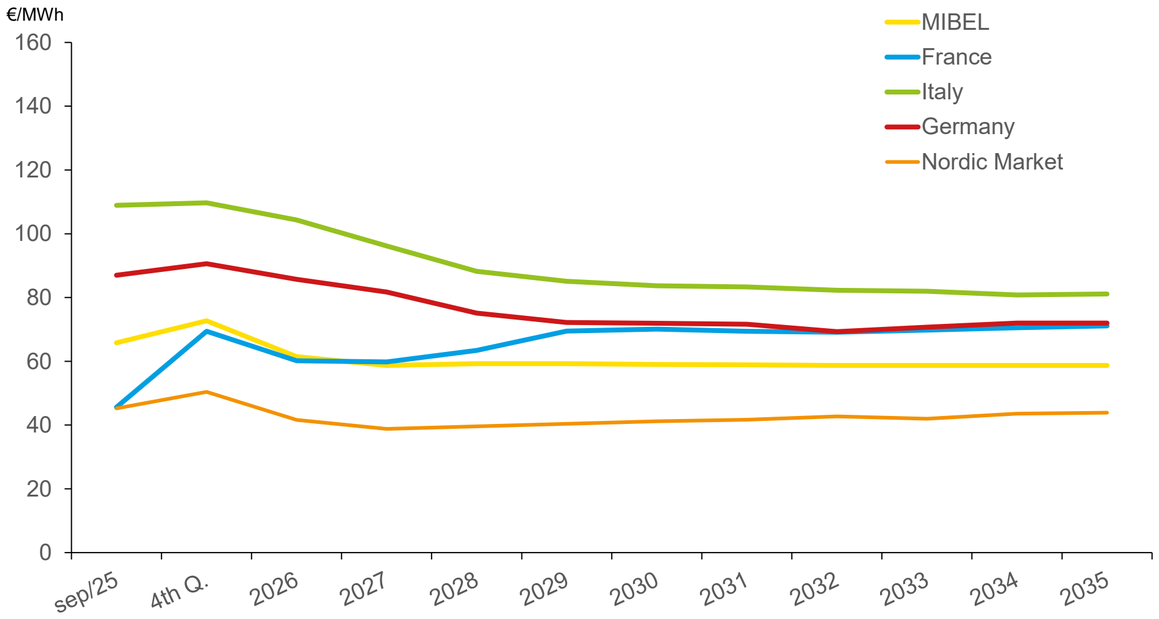

**Source**: ENTSO-E. OMIE, APREN Analysis
**Note**: given recent changes in the data reporting format by the ENTSO-E platform, the price values presented correspond to the bidding zones, when applicable. As such, in the case of Italy, Denmark and Norway only the bidding zones with interconnection with neighbouring countries were considered.
* Due to the unavailability of information on the OMIE platform, it is currently not possible to provide data regarding market closing technologies.

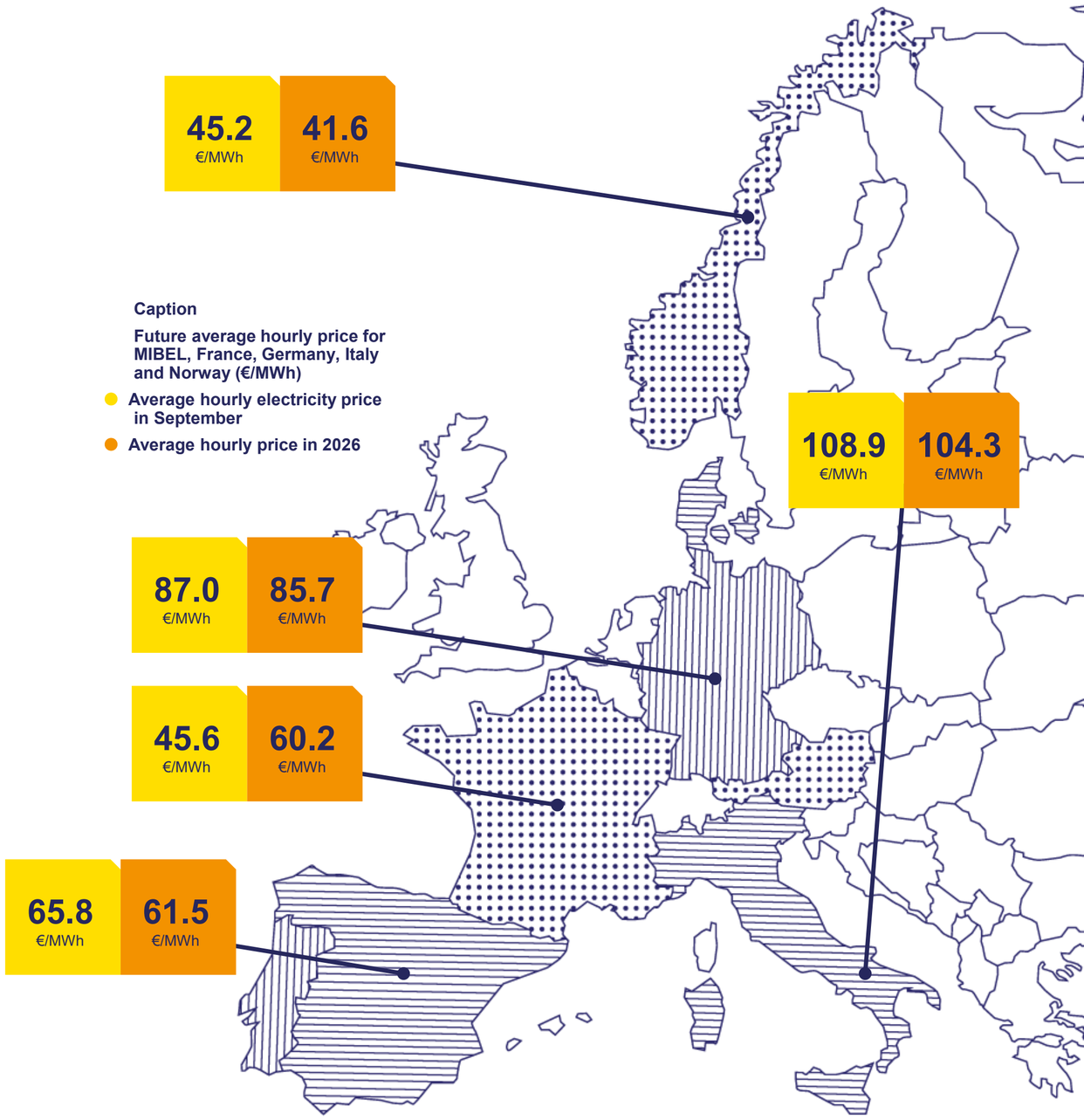
# ELECTRICITY MARKET FUTURES

In the European futures market panorama, example is provided for the **average hourly price** values for next month (September) and next year (2026), according to the records for a specific day[e].

At the time of collection, in September 2025, MIBEL will be the third lowest electricity futures market. From a long-term perspective, and according to the data for the selected day[e], 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 emphasized that the respective volumes traded represent very low quantities when compared to the countries' consumption.




[e] values updated as of 1st of September.

**Source:** OMIP, EEX, APREN Analysis

# INTERNATIONAL TRADES
## EUROPE

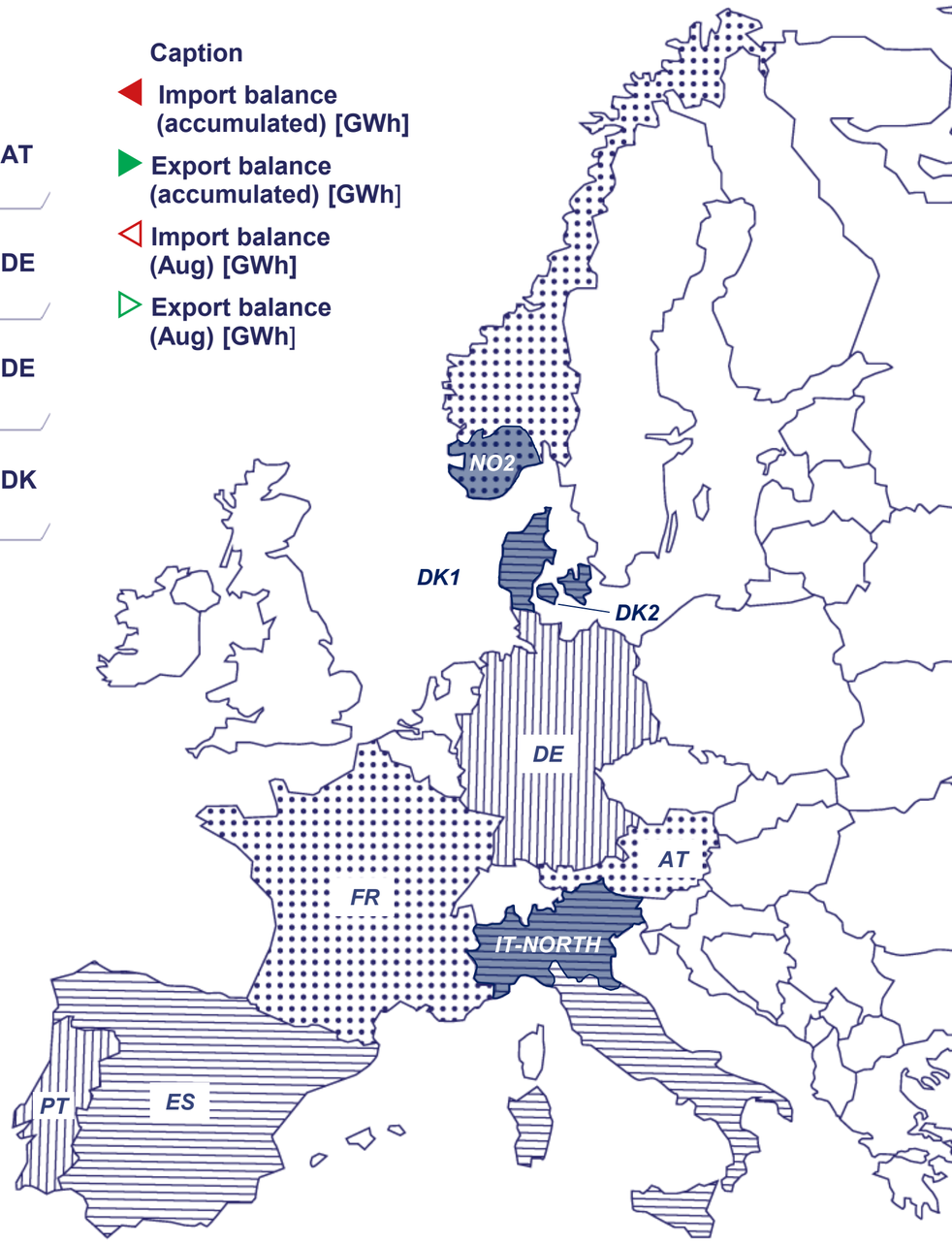
Between 1 January and 31 August 2025, the electricity system in mainland Portugal recorded **electricity imports** equivalent to 8,373 GWh and **exports** of 3,174 GWh.

Up until this month, Portugal was characterized as an electricity **importer**, with a **balance** of 5,199 GWh.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PT | 3,957 ◀ | 1,338 ◁ | ES | DE | 4,050 ▶ | 14 ▷ | AT |
| ES | 2,343 ▶ | 451 ▷ | MA | DK | 5,023 ▶ | 265 ▷ | DE |
| FR | 1,605 ◀ | 765 ▷ | ES | NO | 4,097 ▶ | 411 ▷ | DE |
| IT | 15,957 ◀ | 1,461 ◁ | FR | NO | 4,642 ▶ | 566 ▷ | DK |
| DE | 11,758 ◀ | 1,858 ◁ | FR | | | | |

## MAIN INDICATOR FOR PT-ES INTERCONNECTION

| | PT-ES (Aug) | PT-ES (Jan-Aug) | ES-PT (Aug) | ES-PT (Jan-Aug) |
|---|---|---|---|---|
| usage | 2.0% | 10.9% | 47.5% | 37.2% |
| congestion | 0.0% | 1.2% | 6.5% | 10.3% |
| market split | 6.2% | 25.5% | 59.3% (MIBEL-FR) | 68.9% |




**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

Between 1 January and 31 August 2025, **specific emissions** reached 50.5 $gCO_2$-eq/kWh, giving total emissions from the electricity generation sector of 1.81 $MtCO_2$-eq.

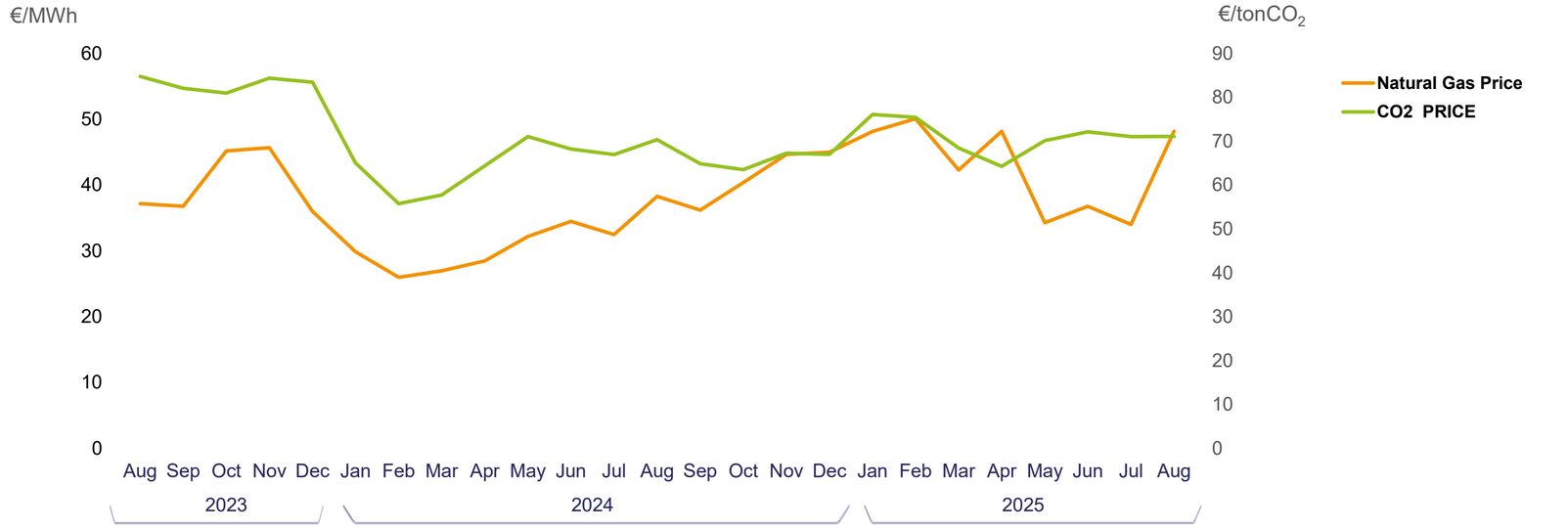
The **European $CO_2$ Emissions Trading Scheme (ETS)** recorded a price of 71.0 €/$tCO_2$[d], which represents a reduction of 9.3% compared to the same period in 2024.

**1.81**
$MtCO_2eq$
**SECTOR'S EMISSIONS**

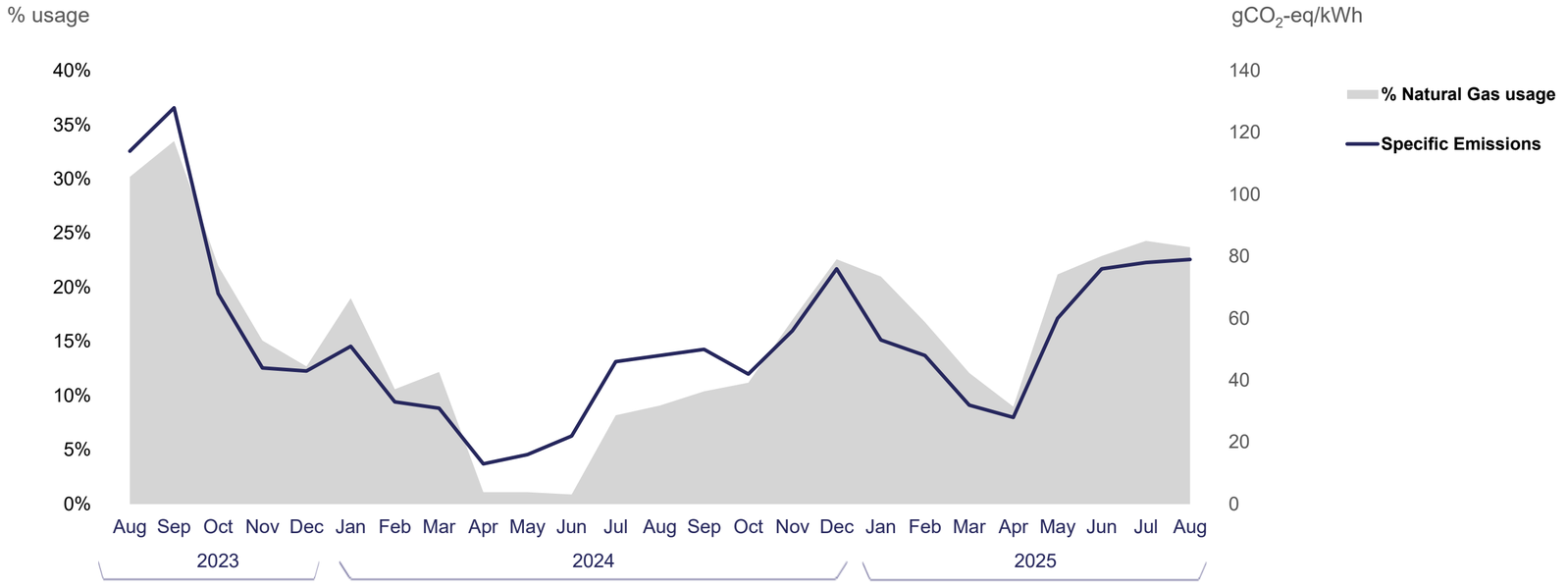
**71.0**
€/$tCO_2$
**AVERAGE ALLOWANCE PRICE**

**43.7**
%
▼
**COMPARED TO AUG 2024 [Accumulated]**

**9.3**
%
▼
**COMPARED TO AUG 2024 [Accumulated]**




Price of $CO_2$ allowances in the ETS and price of natural gás in Europe (Aug-2023 to Aug-2025).
**Source:** SendeCO2, WorldBank, REN




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

[d] 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 1st of January and the 31th of August of 2025 given the contribution of special regime production (PRE).

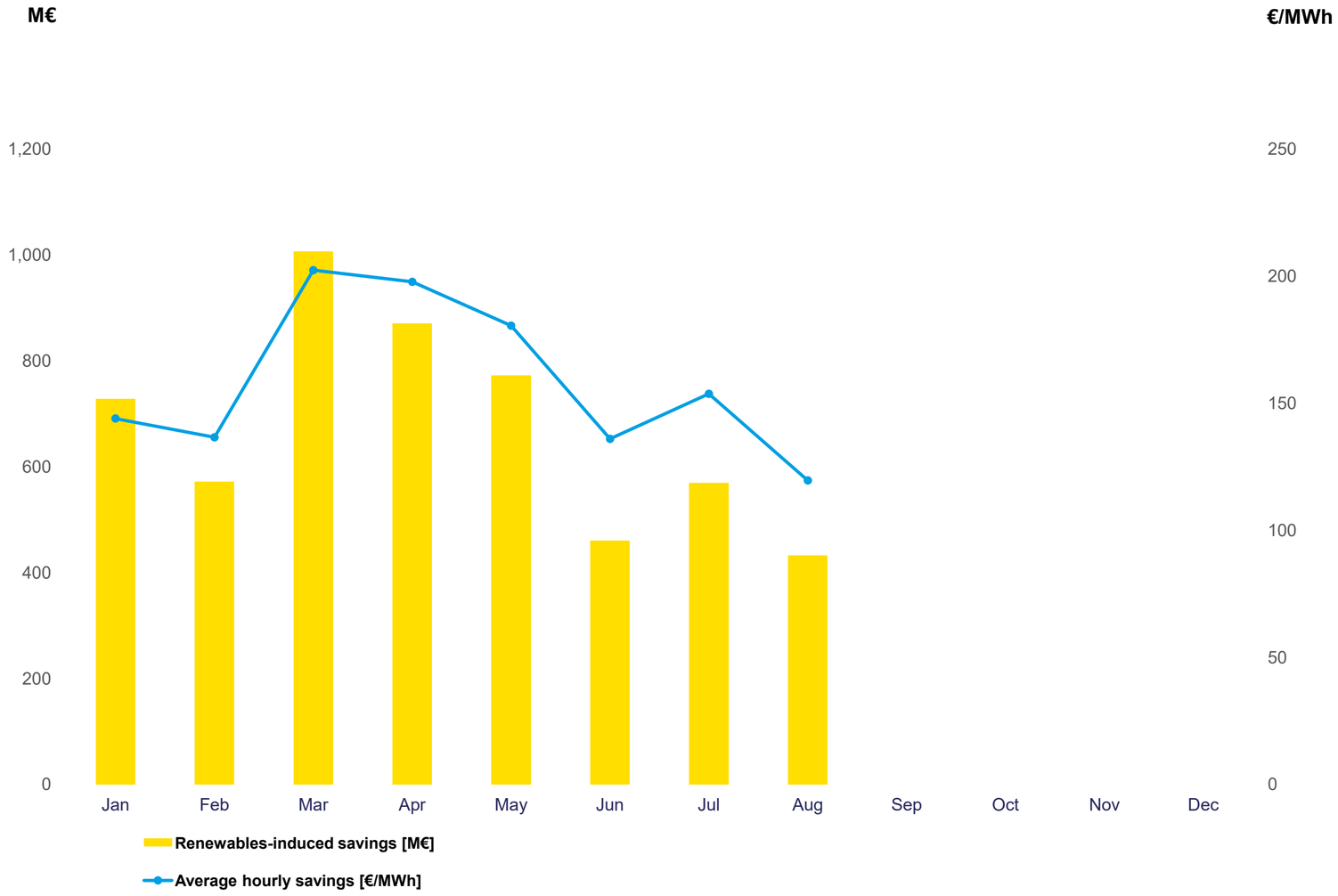
This study is carried out for PRE, which includes all installed fossil cogeneration power. Considering that the capacity equivalent to this technology within PRE is residual and that the other technologies are renewable, the figures are close to the real savings generated by renewables.

**158.9**
€/MWh

**AVERAGE HOURLY SAVINGS (Accumulated)**

**5,417**
M€

**CUMULATIVE SAVINGS (Accumulated)**




**Disclaimer:** This analysis is carried out using a program developed by APREN, based on the Deloitte calculation method.

# ENVIRONMENTAL SERVICE

## RENEWABLES AVOIDED:

The indicators below identify the **savings** achieved between the 1st of January and the 31th of August of 2025 in natural gas, $CO_2$ emissions and $CO_2$ 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.

**102** M€
NATURAL GAS IMPORTS (Aug)

**42.0** M€
ELECTRICITY IMPORTS (Aug)

**0.9** $Mtco_2eq$
$CO_2$ EMISSIONS (Aug)

**56** M€
$CO_2$ ALLOWANCES (Aug)

**650** M€
NATURAL GAS IMPORTS (Accumulated)

**650** M€
ELECTRICITY IMPORTS (Accumulated)

**7.5** $Mtco_2eq$
$CO_2$ EMISSIONS (Accumulated)

**461** M€
$CO_2$ ALLOWANCES (Accumulated)

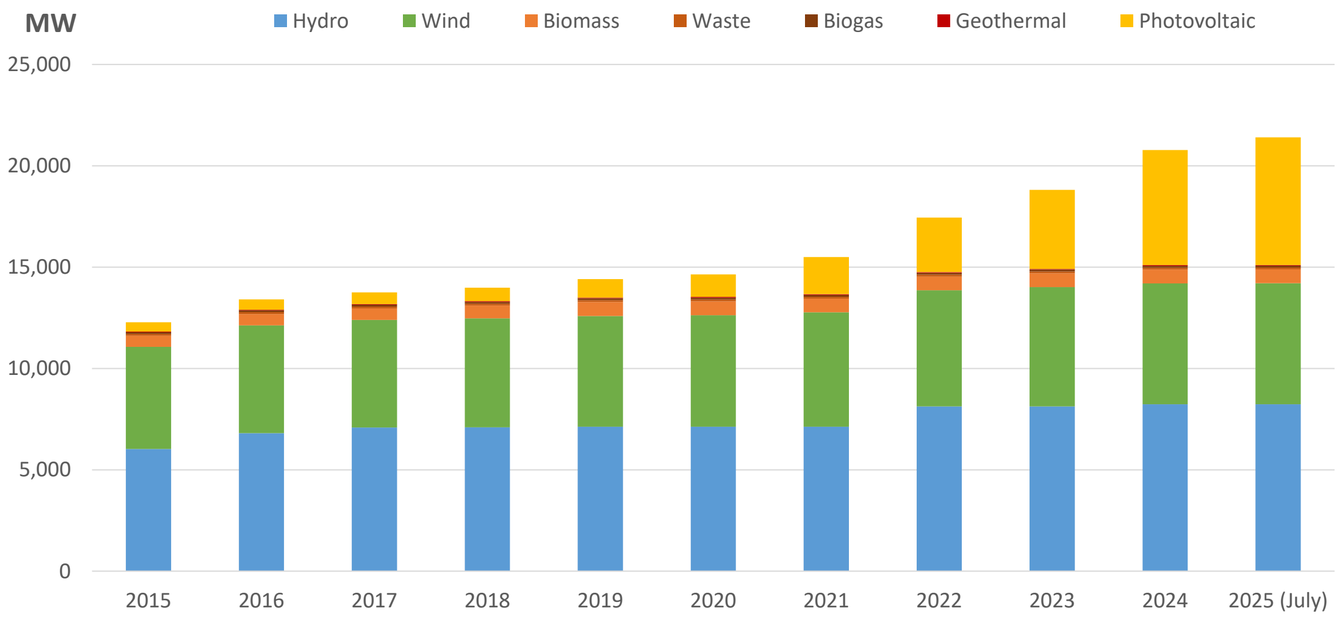
Source: OMIE, APREN Analysis

# RENEWABLE INSTALLED CAPACITY
## PORTUGAL

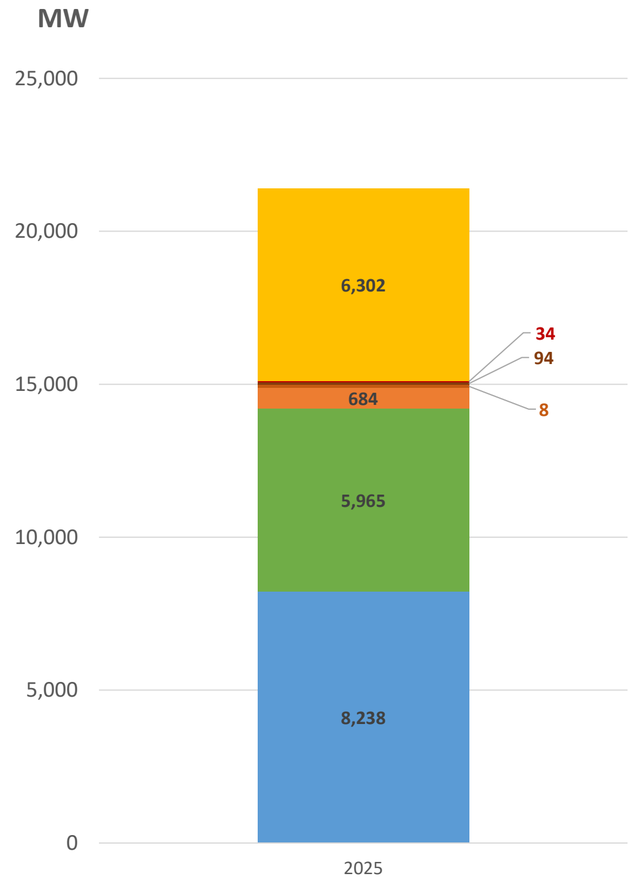
From 2015 to 2025 (July), installed renewable capacity increased by 9,123 MW, representing growth of 74,3%.

From December 2024 to July 2025, installed capacity increased by 629 MW, especially solar photovoltaic technology, which grew by 334 MW in the centralized component and 291 MW in the decentralized component.

At the end of July 2025, renewable capacity accounted for around 78.6% of total installed capacity in Portugal.




## JULY 2025




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

# 2025


**APREN**
**DEPARTAMENTO TÉCNICO E COMUNICAÇÃO**

Av. da República 59 – 2º andar
1050–189 Lisboa
(+351) 213 151 621

**apren@apren.pt**
**apren.pt**


APREN Associação de Energias Renováveis