APREN Associação de Energias Renováveis

JANUARY

2022 BULLETIN RENEWABLE ELECTRICITY

Portugal precisa da nossa energia!

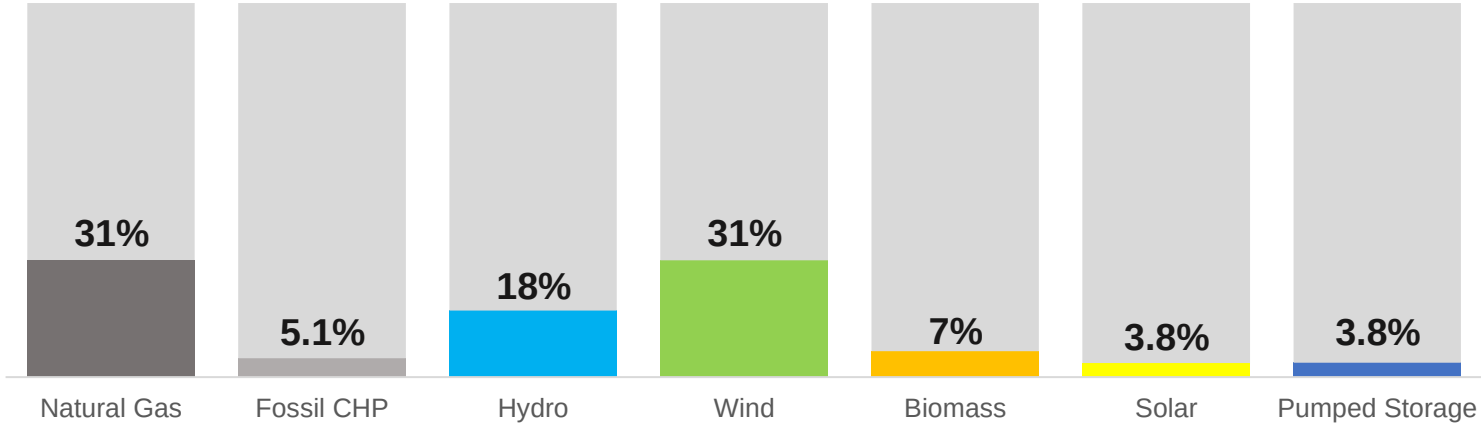
Portugal needs our energy!

Executive Summary

MONTHLY GENERATION (JAN)

% **36.4** // 1,644 GWh
Fossil

% **59.7** // 2,441 GWh
Renewable



INDICATORS OF THE ELECTRICITY SECTOR (Jan)

GWh **4,085** Generation[1]

€/tCO$_2$ **84.3** Price CO$_2$

€/MWh **201.9** MIBEL Price PT

MtCO$_2$eq **0.5** CO$_2$ Emissions

GWh **771** Import balance

gCO$_2$eq/kWh **133** CO$_2$ Specific Emissions

[1] Generation refers to the net power generation of the plants, considering the pumping production recently disclosed by REN. Pumping production is not accounted for in the percentage of production from renewable sources.
Source: REN, Analysis APREN

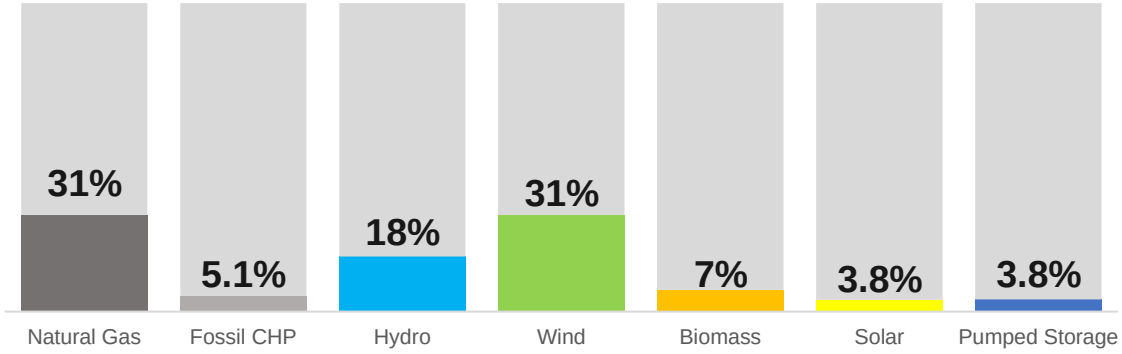
APREN Associação de Energias Renováveis

Electricity Generation: Mainland Portugal

JANUARY 2022

% 36.4 // 1,644 GWh
Fossil

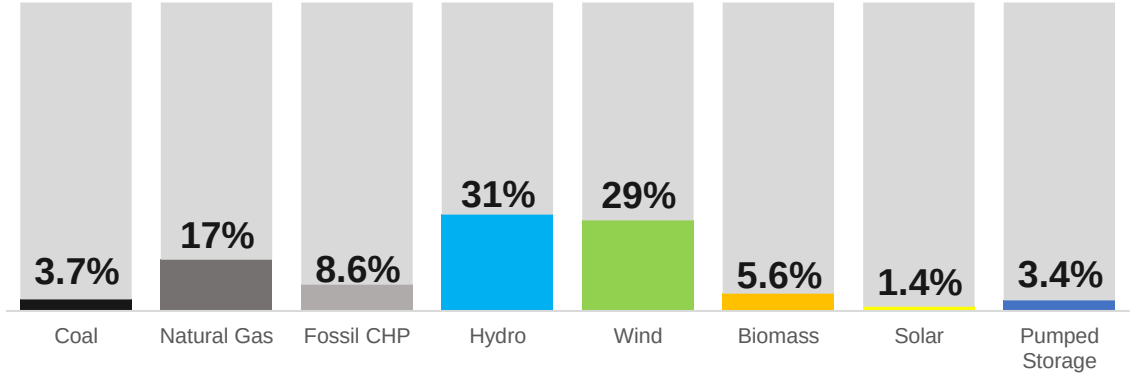
% 59.7 // 2,441 GWh
Renewable



JANUARY 2021

% 38.3 // 1,526 GWh
Fossil

% 67.7 // 2,310 GWh
Renewable



MAIN INDICATORS

GWh 4,085
Generation[1]
20.9%
compared to 2021

% 59.7
Renewable incorporation
7.9%
compared to 2021

GWh 4,652
Consumption[2]
7.2%
compared to 2021

0.94 Wind index

0.97 Hydro index

31.9% Dams Storage

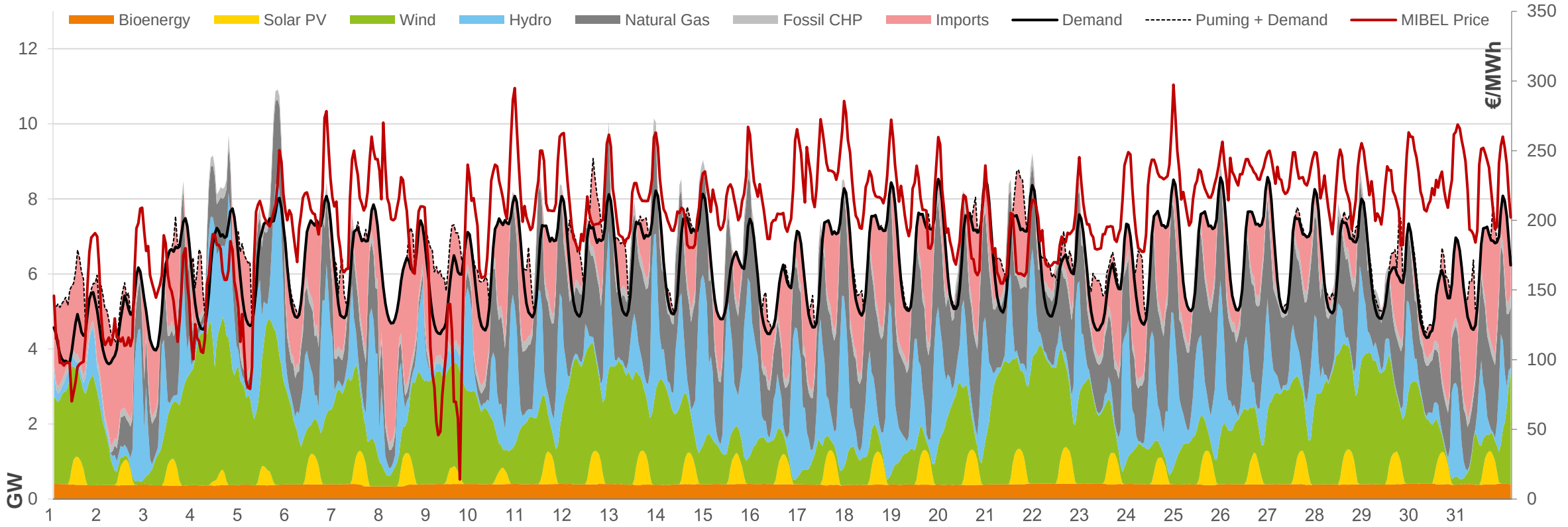
0.92 Solar index

[2] Consumption refers to the liquid generation of power of the plants, considering the import-export balance.
Source: REN, Analysis APREN

APREN Associação de Energias Renováveis

Monthly analysis in Portugal

Load diagram from January 2022

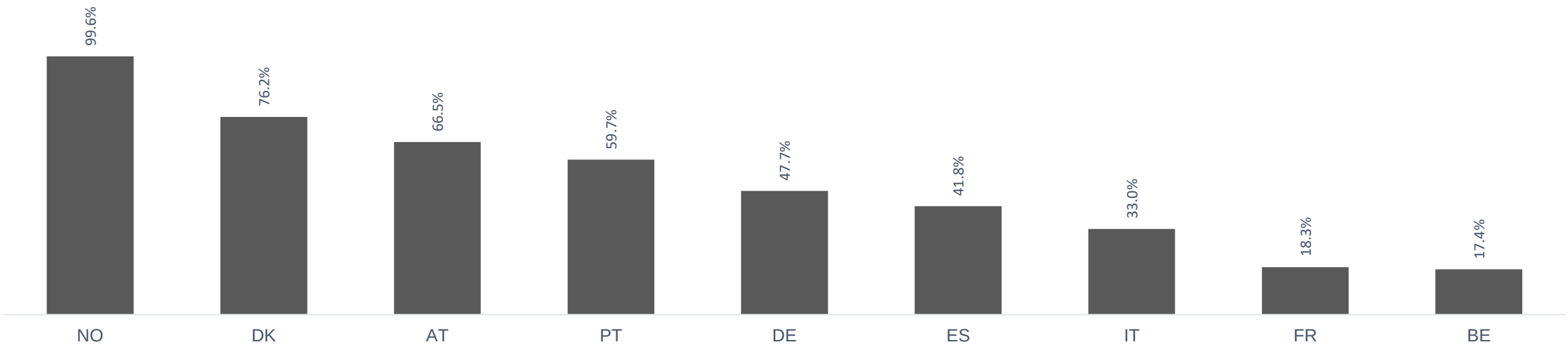


Source: REN, Analysis APREN

Renewable Electricity
Europe

Between January 1 and 31, 2022, Portugal was the fourth country with the highest renewable incorporation in electricity generation, behind Norway, Denmark and Austria, which achieved 99.5 %, 76.2 % and 66.5 %, respectively, from RES.

This analysis only took the main European markets into account, in order to have a representative term of comparison.



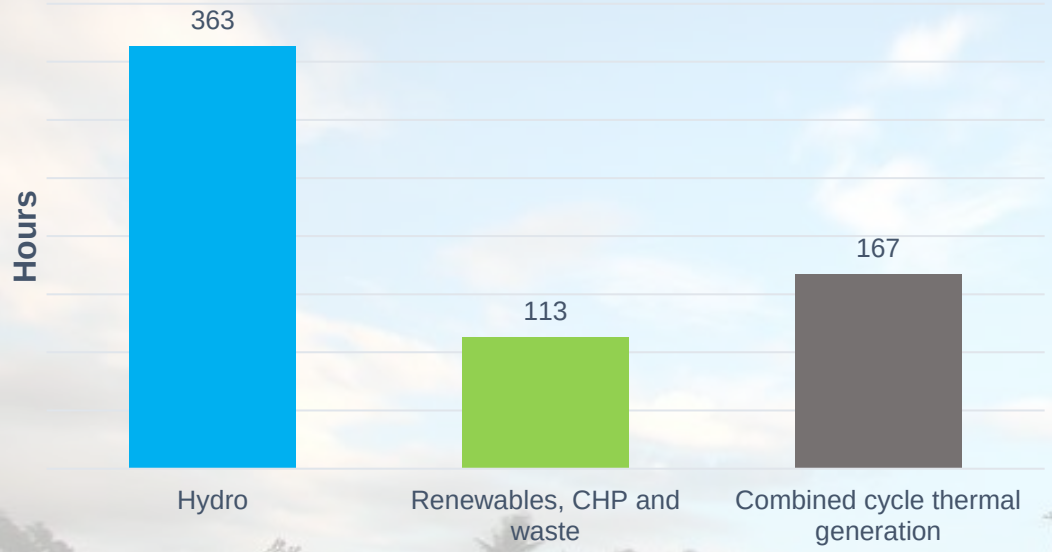
Renewable incorporation in electricity generation (Jan).
Source: REN, Fraunhofer, REE, Terna, National Grid, ENTSO-E, Analysis APREN

APREN Associação de Energias Renováveis

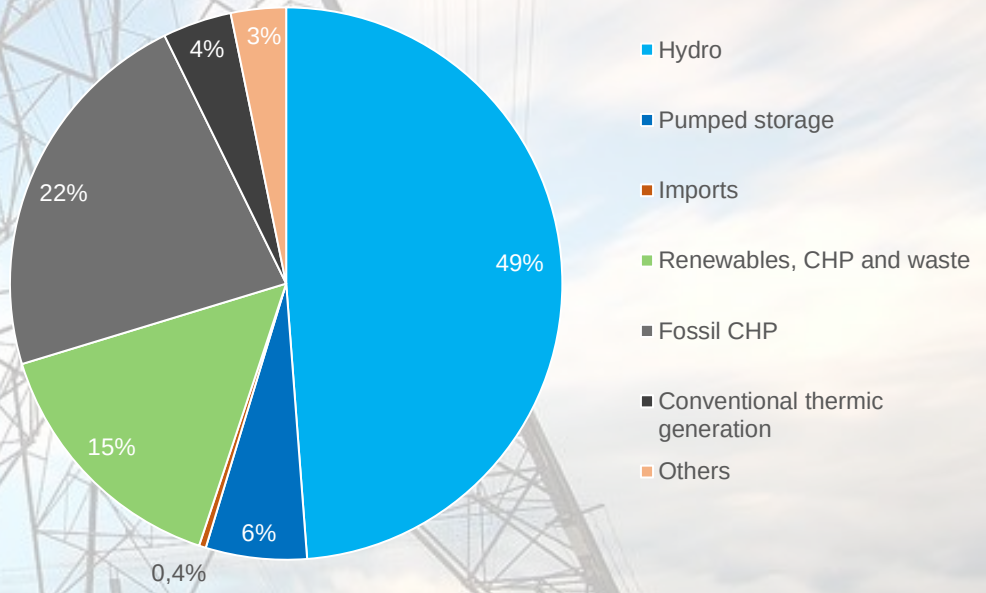
Market Price Setting : Portugal

During January, the hydro technology was the market price setting technology that recorded the highest number of hours reaching a total of 150 non-consecutive hours, followed by the combined cycle thermal generation with 167 non-consecutive hours.

Source: OMIE, Analysis APREN



Number of market price setting hours of the three main technologies (Jan).
Source: OMIE, Analysis APREN



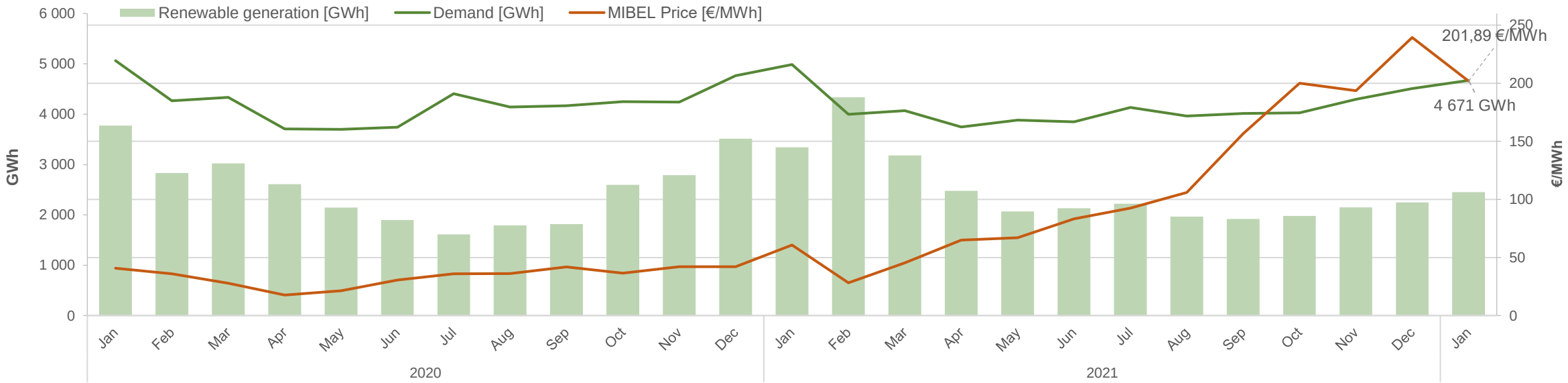
Percentage distribution of the number of market price setting hours of the various technologies, totaling 744 hours (Jan).
Source: OMIE, Analysis APREN

APREN Associação de Energias Renováveis

Electricity Market
Portugal

Between January 1 and 31, the average hourly price recorded in MIBEL in Portugal (€201.89/MWh[3]) represents an increase of more than triple compared to the same period last year.
In the same period, 12 non-consecutive hours were recorded in which renewable generation was sufficient to supply the electricity consumption of Mainland Portugal, with an average hourly price in MIBEL of €177.68/MWh.

[3] Arithmetic average of hourly prices
Source: OMIE, Analysis APREN



Market price, electricity consumption and renewable generation (Jan-2020 to Jan-2022).
Source: OMIE, REN, Analysis APREN

APREN Associação de Energias Renováveis

Electricity Market: Europe

During the month of January 2022, there was a minimum hourly price in MIBEL in Portugal of €14.00/MWh, for an hour in which hydro was the market price setting technology. On the other hand, the maximum hourly price reached €297.33/MWh, where the market price setting depended on pumped storage and thermal generation of combined cycle.

Regarding prices in Europe, it is noteworthy that France recorded the second highest average hourly price during the month of January, the month which the country electricity production depended 70% on nuclear generation.

PRICES MINIMUM

1º	€-1.83 /MWh	BELGIUM
2º	€-1.05 /MWh	GERMANY
3º	€0.06 /MWh	FRANCE

PRICES MAXIMUM

1º	€399.85 /MWh	GERMANY
2º	€399.46 /MWh	AUSTRIA
3º	€399.06 /MWh	FRANCE ITALY BELGIUM

Source: ENTSO-E, OMIE, Analysis APREN

International Trade

Between January 1 and 31, 2022, the electricity system of Mainland Portugal recorded electricity imports equivalent to 982 GWh and exports of 211 GWh, with Portugal being an importer with a balance of 771 GWh.

MAIN INTERCONNECTION INDICATORS PT-ES

	PT-ES	ES-PT
USAGE	% 6.4 (Jan)	% 28.2 (Jan)
CONGESTION	% 0.0 (Jan)	% 1.6 (Jan)
MARKETS SPLIT	PT-ES: % 1.6 (Jan)	MIBEL-FR: % 55.5 (Jan)

Source: REN, Analysis APREN.

Power sector emissions

The specific emissions of January reached 133 gCO_2eq/kWh, while the total emissions from the electro-producing sector reached 0.5 $MtCO_2eq$.

The European Emissions Trading System (EU-ETS) recorded an average price of €84.3/tCO_2, increasing by more than double from January 2021.

Source: SendeCO2, REN, ERSE, Analysis APREN

SECTOR EMISSIONS

6.0

$MtCO_2eq$

28.5%

compared to Jan 2021

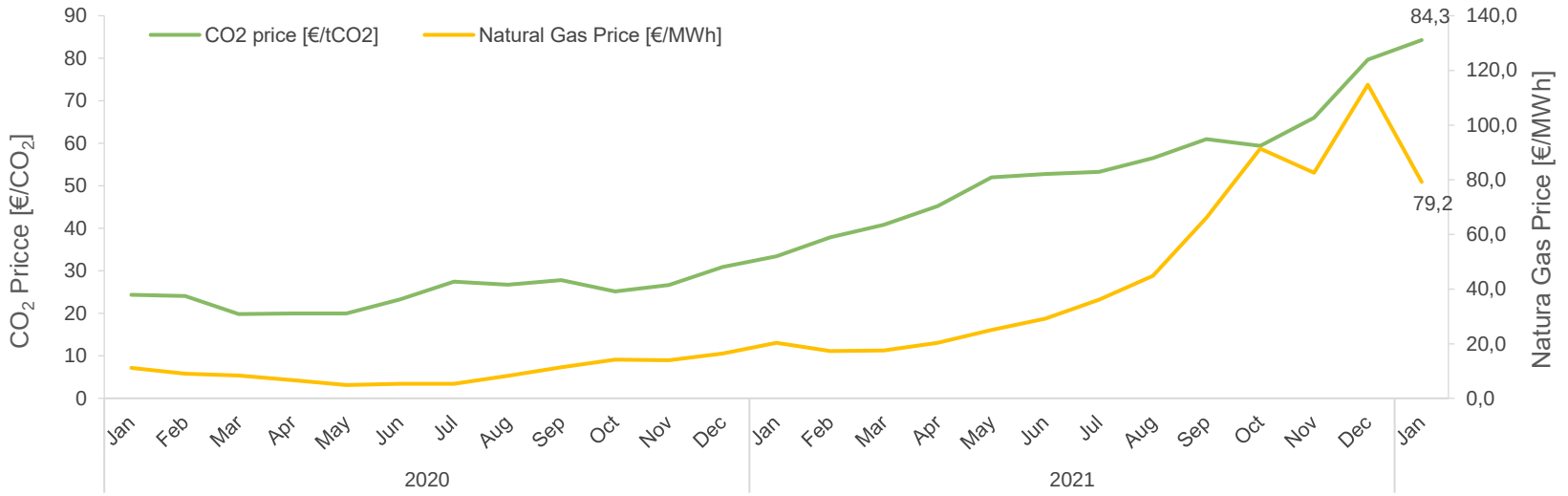
ALLOWANCES AVERAGE PRICE

€84.3

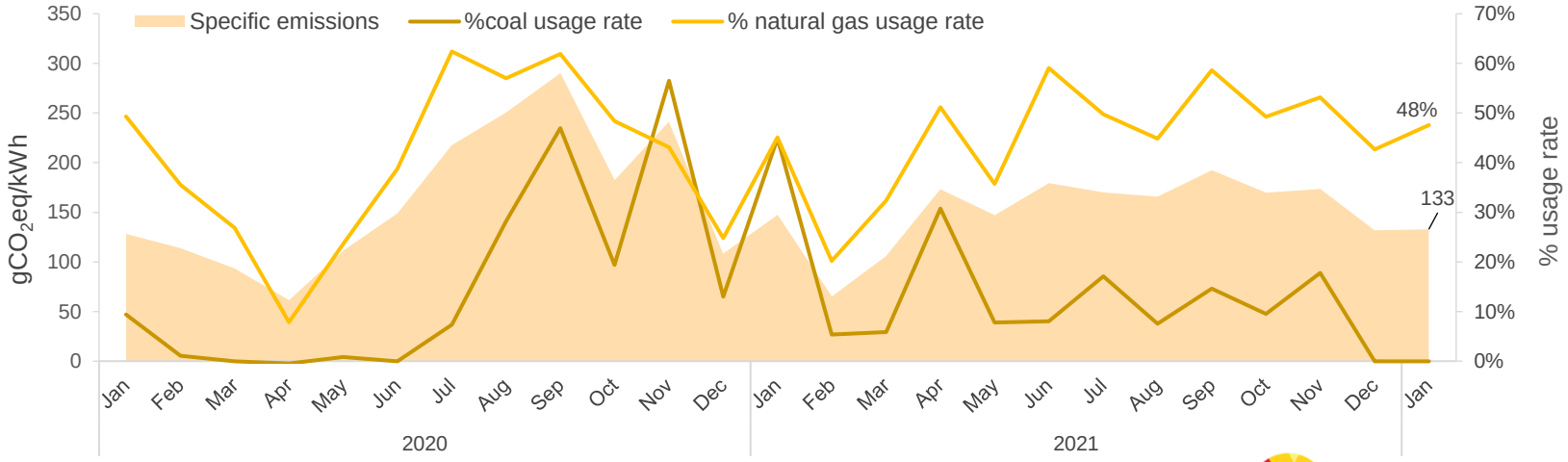
/tCO_2

152%

compared to Jan 2021



CO_2 allowances price at EU-ETS and natural gas price in Europe (Jan-2020 to Jan-2022).
Source: SendeCO2, WorldBank.



Specific emissions from the electricity sector in mainland Portugal, % use of coal and natural gas power plants (Jan-2020 to Jan-2022).
Source: REN, DGEG, ERSE, Analysis APREN

APREN Associação de Energias Renováveis

Environmental Service

The indicators below identify the savings achieved between January 1 and 31, 2022, in imported natural gas, CO_2 emissions and CO_2 emission allowances, resulting from renewable incorporation into electricity generation.

This analysis is based on the assumption that, in the absence of renewables, production would be ensured primarily by natural gas and finally by imported electricity.

Renewables have avoided:

€233 M
Imported Natural Gas (Jan)

0.7 $MtCO_2eq$
CO_2 emissions (Jan)

€198 M
Imported eletricity (Jan)

€46 M
CO_2 allowances (Jan)

Source: REN, REE, SendeCO2, WorldBank, DGEG, ERSE, Analysis APREN.
Note1: For the estimate of savings in imported natural gas, the price of natural gas in Europe was considered, according to commodity prices published by WorldBank.
Note2: For the estimation of savings in imported electricity, the average price on the MIBEL market was considered.

European Barometer

Guidelines on State Aid

The European Commission (EC) has approved the new guidelines concerning the state aid for climate and environmental protection and energy (CEEAG), which will be formally adopted in January 2022 and will apply from that date on.

Fossil fuels and Nuclear power

On January 1, the EC initiated a consultation with experts in relation to the EC first *draft* on EU Taxonomy, where the EC considers nuclear energy and natural gas to be green energy, in accordance with certain criteria.

Among several negative opinions, we highlight the EU Platform of Sustainable Finance, EC's advisory body, that strongly criticized the consideration of nuclear energy and natural gas as green energy.

Energy Security

On January 22, the European Energy Ministers met to assess the possibility of other natural gas supply points to Europe, besides Russia, due to both the current situation of conflict between Russia and Ukraine, and the increase in the price of natural gas resulting from failures in the flow of supply.

It was published a joint statement from the EC President and the President of the United States, referring the cooperation on energy security, and advances in this direction.

TEN-E Regulation

The TEN-E regulation (Trans-European Network for Energy) has been approved, setting out new rules to support European climate goals as well as the Green Deal, focused mainly on the transition from fossil fuels to hydrogen.

CBAM

The European Committee on the Environment, Public Health, and Food Health (ENVI), responsible for legislation in the area, has published a report on CBAM (Carbon Boarder Adjustment Mechanism), where it has been proposed to include hydrogen within the framework of the project.

Principle of addition

A document from the Regulatory Commission was released on the rules concerning the principle of addition in renewable hydrogen production, that have been added to the initial version of the document.

National Barometer

Consumption, production and self-consumption profiles

On January 1, the Directive No. 1/2022 was published, approving the consumption, production and self-consumption profiles applicable in 2022.

Tariffs prices for electricity

On January 7, the Directive No. 3/2022 was published, approving tariffs and prices for electricity and other services in 2022 and parameters for the 2022-2025 regulatory period.

Adhering to the electronic platform for issuing and managing Guarantees of Origin

On January 12, the Dispatch No. 2/2022 was published, establishing the exemption from mandatory registration on the platform until December 31, 2022, for microproduction units, mini-production units, UPACs and UPPs.

Decree-Law 15/2022

On January 14, the Decree-Law 15/2022 was published, establishing the organisation and functioning of the National Electricity System by transposing Directive (EU) 2019/944 and Directive (EU) 2018/2001.

Regulation of the National Gas Network

On January 19, the Dispatch No. 806-B/2022 and the Dispatch No. 806-C/2022 were published, approving the Regulation of the National Gas Distribution and Transport Network, respectively, establishing the technical and safety conditions to which the design, construction, operation, maintenance and out-of-service infrastructure of the distribution and transport network must comply.

Risk-preparedness Plan for the Portuguese Electricity Sector

The Risk-preparedness Plan for the Portguese Electricity Sector has been submitted for approval to the European Commission, establishing the measures to be followed in the event of a crisis in the electrical system, as well as who is responsible for acting in this event.

Solar Auctions 2019 and 2020

On January 20, the Dispatch form the Deputy Secretary of State and Energy was published, extending the 2019 and 2020 Solar Auction deadlines due to the effects of COVID-19 on raw material chairs and the production and distribution of goods and equipment worldwide.

Loss profiles

On January 26, the Directive No. 5/2022 was published, approving the loss profiles applicable in 2022, including loss profiles for low, medium, high and very high voltage networks; for the upstream transport network, and the loss profiles applicable to customers connected in Very High Voltage.

Suspension of hydroelectric production due to drought

On February 1 the 8th interministerial meeting of the Standing Committee on The Prevention, Monitoring and Monitoring of the Effects of Drought took place, where the mechanisms that allow a safe and articulated planning of existing reserves were activated, namely the definition of quotas/volumes of water from which the use for hydroelectric production is suspended, which led to the suspension of production in the Dams Alto Lindoso/ Touvedo, Alto Rabagão, Vilar/Tabuaço, Cabril and Castelo de Bode.

Dispatch No.1322/2022

On Febuary 1, the Disptach No. 1322/2022 was published, setting out the parameter corresponding to the impact of out-of-market measures and events recorded within the European Union on the formation of average electricity prices on the wholesale market in Portugal.

APREN | Departamento Técnico e Comunicação

Avenida da República,
59 - 2º andar
1050-189 Lisboa

[+351] 213 151 621
apren@apren.pt
www.apren.pt

APREN Associação de Energias Renováveis